



PAL-M SYSTEM VCR CHROMA SIGNAL PROCESSOR

ABSOLUTE MAXIMUM RATINGS

| Symbol | Parameter                  | Ratings | Unit  |
|--------|----------------------------|---------|-------|
| Vcc    | Supply voltage             | 7       | V     |
| Pd     | Power dissipation          | 0.8     | W     |
| Topr   | Operating temperature      | -20-75  | °C    |
| Tstg   | Storage temperature        | -40-125 | °C    |
| Kθ     | Thermal derating (Ta≥25°C) | 8.0     | mW/°C |

ELECTRICAL CHARACTERISTICS (Ta=25°C, unless otherwise noted)

| Symbol | Parameter                               | Test point | Test conditions |     |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |     |     |     |     |     | Remarks                           | Limits                                                   |       |      | Unit |    |
|--------|-----------------------------------------|------------|-----------------|-----|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|-----|-----|-----|-----|-----|-----------------------------------|----------------------------------------------------------|-------|------|------|----|
|        |                                         |            |                 |     |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |     |     |     |     |     |                                   | Min.                                                     | Typ.  | Max. |      |    |
|        |                                         |            | IN              | OUT | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18  | 19  | 20  | 21  | 22  |                                   |                                                          |       |      |      | 23 |
| IccP   | PAL circuit current                     | 21         | a               | a   | a | a | a | b | a | a | a | a | a | a  | a  | a  | a  | a  | a  | a  | a  | a   | 2.0 | 2.0 | 0   | 0   | 0                                 | Measure the amperage of the current that flows to pin ①. | —     | 21   | 26   | mA |
| IccN   | NTSC circuit current                    | 21         | a               | a   | a | a | a | b | a | a | a | a | a | a  | a  | a  | a  | a  | a  | a  | a  | a   | 2.0 | 2.0 | 0   | 0   | 0                                 | Measure the amperage of the current that flows to pin ①. | —     | 19   | 24   | mA |
| G7-9   | 2H COMB DRIVE Gain                      | 7 9        | a               | a   | a | a | a | b | b | a | a | a | a | a  | a  | a  | a  | a  | a  | a  | a  | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | SG 7 : CW 3.6 MHz 0.8 Vp-p        | -1.5                                                     | -0.5  | 0.5  | dB   |    |
| D7-9   | 2H COMB DRIVE Secondary distortion      | 7 9        | a               | a   | a | a | a | b | b | a | a | a | a | a  | a  | a  | a  | a  | a  | a  | a  | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | SG 7 : CW 3.6 MHz 1.6 Vp-p        | —                                                        | -59   | -45  | dB   |    |
| F7-9   | 2H COMB DRIVE Frequency characteristics | 7 9        | a               | a   | a | a | a | b | b | a | a | a | a | a  | a  | a  | a  | a  | a  | a  | a  | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | SG 7 : CW 1 MHz, 5 MHz 0.8 Vp-p   | -0.5                                                     | 0     | 0.5  | dB   |    |
| G7-23  | -11 dB AMP Gain                         | 7 23       | a               | a   | a | a | a | b | b | a | a | a | a | a  | a  | a  | a  | a  | a  | a  | a  | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | SG 7 : CW 3.6 MHz 0.8 Vp-p        | -13.5                                                    | -11.5 | -9.5 | dB   |    |
| D7-23  | -11 dB AMP Secondary distortion         | 7 23       | a               | a   | a | a | a | b | b | a | a | a | a | a  | a  | a  | a  | a  | a  | a  | a  | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | SG 7 : CW 3.6 MHz 1.6 Vp-p        | —                                                        | -47   | -40  | dB   |    |
| F7-23  | -11 dB AMP Frequency characteristics    | 7 23       | a               | a   | a | a | a | b | b | a | a | a | a | a  | a  | a  | a  | a  | a  | a  | a  | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | SG 7 : CW 1 MHz, 5 MHz 0.8 Vp-p   | -0.3                                                     | 0.2   | 0.7  | dB   |    |
| G13-23 | COMB AMP SW Gain                        | 13 23      | a               | a   | a | a | a | b | a | a | b | a | a | a  | a  | a  | a  | a  | a  | a  | a  | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | SG 13 : CW 3.6 MHz 110 mVp-p      | -1.5                                                     | -0.5  | 0.5  | dB   |    |
| D13-23 | COMB AMP SW Secondary distortion        | 13 23      | a               | a   | a | a | a | b | a | a | b | a | a | a  | a  | a  | a  | a  | a  | a  | a  | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | SG 13 : CW 3.6 MHz 220 mVp-p      | —                                                        | -60   | -45  | dB   |    |
| F13-23 | COMB AMP SW Frequency characteristics   | 13 23      | a               | a   | a | a | a | b | a | a | b | a | a | a  | a  | a  | a  | a  | a  | a  | a  | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | SG 13 : CW 1 MHz, 5 MHz 110 mVp-p | -0.5                                                     | 0     | 0.5  | dB   |    |
| G7-16  | 1H DL SW Gain                           | 7 16       | a               | a   | a | a | a | b | b | a | a | a | a | a  | a  | a  | a  | a  | a  | a  | a  | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | SG 7 : CW 3.6 MHz 0.8 Vp-p        | -1.4                                                     | -0.4  | 0.6  | dB   |    |
| D7-16  | 1H DL SW Secondary distortion           | 7 16       | a               | a   | a | a | a | b | b | a | a | a | a | a  | a  | a  | a  | a  | a  | a  | a  | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | SG 7 : CW 3.6 MHz 1.6 Vp-p        | —                                                        | -60   | -45  | dB   |    |

6249826 0022702 552



PAL-M SYSTEM VCR CHROMA SIGNAL PROCESSOR

ELECTRICAL CHARACTERISTICS (cont.)

| Symbol | Parameter                                | Test point | Test conditions |     |      |      |      |      |      |      |      |      |      |       |       |       |       |       |       |       |       |       |       |       |       |       | Remarks | Limits |      |      | Unit |       |       |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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|        |                                          |            | IN              | OUT | SW 1 | SW 2 | SW 3 | SW 4 | SW 5 | SW 6 | SW 7 | SW 8 | SW 9 | SW 10 | SW 11 | SW 12 | SW 13 | SW 14 | SW 15 | SW 16 | SW 17 | SW 18 | SW 19 | SW 20 | SW 21 | SW 22 |         |        |      |      |      | SW 23 | SW 24 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| F7-16  | 1H DL SW<br>Frequency<br>characteristics | 7 16       | a               |     |      |      |      |      |      |      |      |      |      |       |       |       |       |       |       |       |       |       |       |       |       |       |         |        |      |      |      |       |       |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

6249826 0022703 499



PAL-M SYSTEM VCR CHROMA SIGNAL PROCESSOR

ELECTRICAL CHARACTERISTICS (cont.)

| Symbol     | Parameter                                     | Test point | Test conditions |     |   |   |   |   |   |   |   |   |   |    |     |               |     |     |     |     |     |    |    |    | Remarks | Limits                                                                                         |                                      |      | Unit |     |    |
|------------|-----------------------------------------------|------------|-----------------|-----|---|---|---|---|---|---|---|---|---|----|-----|---------------|-----|-----|-----|-----|-----|----|----|----|---------|------------------------------------------------------------------------------------------------|--------------------------------------|------|------|-----|----|
|            |                                               |            |                 |     |   |   |   |   |   |   |   |   |   |    |     |               |     |     |     |     |     |    |    |    |         | Min.                                                                                           | Typ.                                 | Max. |      |     |    |
|            |                                               |            | IN              | OUT | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11  | 12            | 13  | 14  | 15  | 16  | 17  | 18 | 19 | 20 |         |                                                                                                |                                      |      |      | 21  | 22 |
| F18-23     | GCA 1, 2, -17 dB<br>Frequency characteristics | 18 23      | a               |     | a | b | a | a | b | a | a | b | a | a  | b   | a             | a   | b   | a   | a   | b   | a  | a  | b  | a       | a                                                                                              | SG 18 : CW 1 MHz,<br>5 MHz 130 mVp-p | -0.5 | 0    | 0.5 | dB |
| CT1        | 1H DL SW/<br>Crosstalk 1                      | 7 16       | a               |     | a | b | b | a | b | b | a | a | a | a  |     | 2.5           | 5.0 | 5.0 | 2.0 | 2.0 | 5.0 |    |    |    |         |                                                                                                | SG 7 : CW 3.6 MHz<br>0.8 Vpp         | —    | -55  | -45 | dB |
| CT2        | 1H DL SW/<br>Crosstalk 2                      | 7 16       | a               |     | a | b | b | a | b | b | a | a | a | a  |     | 5.0           | 5.0 |     |     |     |     |    |    |    |         | SG 7 : CW 3.6 MHz<br>0.8 Vpp                                                                   | —                                    | -60  | -40  | dB  |    |
| CT3        | 1H DL SW/<br>Crosstalk 3                      | 13 16      | a               |     | a | b | b | a | b | b | a | a | a | a  |     | 5.0           | 0   |     |     |     |     |    |    |    |         | SG 13 : CW 3.6 MHz<br>110 mVp-p                                                                | —                                    | -60  | -45  | dB  |    |
| CT4        | 1H DL SW/<br>Crosstalk 4                      | 13 16      | a               |     | a | b | b | a | b | b | a | a | a | a  |     | 5.0           | 5.0 |     |     |     |     |    |    |    |         | SG 13 : CW 3.6 MHz<br>110 mVp-p                                                                | —                                    | -55  | -40  | dB  |    |
| CT5        | CHROMA OUT SW/<br>Crosstalk 1                 | 7 20       | a               |     | a | b | b | a | b | b | a | a | a | a  |     | 5.0           | 5.0 | 2.0 | 2.0 |     |     |    |    |    |         | SG 7 : CW 3.6 MHz<br>0.8 Vpp                                                                   | —                                    | -55  | -45  | dB  |    |
| CT6        | CHROMA OUT SW/<br>Crosstalk 2                 | 7 20       | a               |     | a | b | b | a | b | b | a | a | a | a  |     | 0             | 0   | 2.0 | 2.0 |     |     |    |    |    |         | SG 7 : CW 3.6 MHz<br>0.8 Vpp                                                                   | —                                    | -60  | -40  | dB  |    |
| CT7        | CHROMA OUT SW/<br>Crosstalk 3                 | 13 20      | a               |     | a | b | b | a | b | b | a | a | a | a  |     | 5.0           | 0   |     |     |     |     |    |    |    |         | SG 13 : CW 3.6 MHz<br>110 mVp-p                                                                | —                                    | -60  | -45  | dB  |    |
| CT8        | CHROMA OUT SW/<br>Crosstalk 4                 | 13 20      | a               |     | a | b | b | a | b | b | a | a | a | a  |     | 0             | 5.0 |     |     |     |     |    |    |    |         | SG 13 : CW 3.6 MHz<br>110 mVp-p                                                                | —                                    | -45  | -35  | dB  |    |
| G2L        | GCA 2<br>Control range L                      | 7 20       | a               |     | a | b | b | a | b | b | a | a | a | a  |     | 5.0           | 0   | 2.0 | 0.7 |     |     |    |    |    |         | SG 7 : CW 3.6 MHz<br>0.8 Vpp                                                                   | —                                    | -9   | -7   | dB  |    |
| G2H        | GCA 2<br>Control range H                      | 7 20       | a               |     | a | b | b | a | b | b | a | a | a | a  |     | 5.0           | 0   | 2.0 | 4.0 |     |     |    |    |    |         | SG 7 : CW 3.6 MHz<br>0.8 Vpp                                                                   | 5                                    | 7    | —    | dB  |    |
| G1L        | GCA 1<br>Control range L                      | 18 20      | a               |     | a | b | a | a | b | a | a | b | a | a  |     | 5.0           | 0   | 1.3 | 2.0 |     |     |    |    |    |         | SG 18 : CW 3.6 MHz<br>130 mVp-p                                                                | —                                    | 8    | 10   | dB  |    |
| G1H        | GCA 1<br>Control range H                      | 18 20      | a               |     | a | b | a | a | b | a | a | b | a | a  |     | 5.0           | 0   | 4.5 | 2.0 |     |     |    |    |    |         | SG 18 : CW 3.6 MHz<br>130 mVp-p                                                                | 15                                   | 17   | —    | dB  |    |
| VTH<br>24  | ROTARY SW<br>Threshold voltage                | 1 c c      | c               |     | c | b |   |   |   |   |   |   |   |    | 5.0 | 3.0           |     |     |     |     |     |    |    |    |         |                                                                                                |                                      | 2.2  | —    | 2.8 | V  |
| I24L       | ROTARY Lo<br>Current at pin ②                 | 24         | a               |     | a | b |   |   |   |   |   |   |   |    |     |               |     |     |     |     |     |    |    |    |         | Measure the amperage<br>of the current that<br>flows to pin ② when<br>voltage at pin ② is 0 V. | -20                                  | -6   | 0    | μA  |    |
| I24H       | ROTARY Hi<br>Current at pin ②                 | 24         | a               |     | a | b |   |   |   |   |   |   |   |    |     |               |     |     |     |     |     |    |    |    |         | Measure the amperage<br>of the current that<br>flows to pin ② when<br>voltage at pin ② is 5 V. | -5                                   | 0    | 2    | μA  |    |
| VTH<br>12L | REC/TRICK<br>Threshold voltage                | 18 20      | a               |     | a | b | a | a | b | a | a | b | a | a  |     | Var-<br>iable | 5.0 | 2.5 | 2.0 | 2.0 | 5.0 |    |    |    |         |                                                                                                | SG 18 : CW 3.6 MHz<br>130 mVp-p      | 1.0  | —    | 1.4 | V  |

6249826 0022704 325



ELECTRICAL CHARACTERISTICS (cont.)

| Symbol                 | Parameter                     | Test point     | Test conditions |     |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    | Remarks | Limits |      |      | Unit |    |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |    |
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|                        |                               |                |                 |     |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |         | Min.   | Typ. | Max. |      |    |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |    |
|                        |                               |                | IN              | OUT | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 |         |        |      |      |      | 23 | 24 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |    |
| V <sub>TH</sub><br>12H | TRICK/PB<br>Threshold voltage | 18<br>20<br>13 | a               |     | a | b | a |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |         |        |      |      |      |    |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | </ |

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PAL-M SYSTEM VCR CHROMA SIGNAL PROCESSOR

ELECTRICAL CHARACTERISTICS (cont.)

| Symbol                 | Parameter                                              | Test point  | Test conditions |     |   |   |   |     |     |   |   |   |     |    |    |    |    |    |               |     |    |    |    |    |    |    | Remarks | Limits                                                                                 |       |       | Unit  |    |
|------------------------|--------------------------------------------------------|-------------|-----------------|-----|---|---|---|-----|-----|---|---|---|-----|----|----|----|----|----|---------------|-----|----|----|----|----|----|----|---------|----------------------------------------------------------------------------------------|-------|-------|-------|----|
|                        |                                                        |             |                 |     |   |   |   |     |     |   |   |   |     |    |    |    |    |    |               |     |    |    |    |    |    |    |         | Min.                                                                                   | Max.  |       |       |    |
|                        |                                                        |             | IN              | OUT | 1 | 2 | 3 | 4   | 5   | 6 | 7 | 8 | 9   | 10 | 11 | 12 | 13 | 14 | 15            | 16  | 17 | 18 | 19 | 20 | 21 | 22 |         |                                                                                        | 23    | 24    |       |    |
| I <sub>15H</sub>       | SLP<br>Current at pin ⑬                                | 15          |                 | a   |   |   |   |     |     |   |   |   |     |    |    |    |    |    | 5.0           |     |    |    |    |    |    |    |         | -5                                                                                     | 0     | 2     | μA    |    |
| V <sub>TH</sub><br>14L | NTSC/AUTO<br>Threshold voltage                         | 10          | c               | a   |   |   |   | 4.0 | 3.0 |   |   |   |     |    |    |    |    |    | Var-<br>iable |     |    |    |    |    |    |    |         | 1.0                                                                                    | —     | 1.4   | V     |    |
| V <sub>TH</sub><br>14H | AUTO/PAL<br>Threshold voltage                          | 10          | c               | a   |   |   |   | 2.0 | 3.0 |   |   |   |     |    |    |    |    |    | Var-<br>iable |     |    |    |    |    |    |    |         | 3.3                                                                                    | —     | 3.7   | V     |    |
| I <sub>14L</sub>       | NTSC<br>Current at pin ⑭                               | 14          |                 | a   |   |   |   |     |     |   |   |   |     |    |    |    |    |    | 0             |     |    |    |    |    |    |    |         | -40                                                                                    | -13   | -1    | μA    |    |
| I <sub>14H</sub>       | PAL<br>Current at pin ⑭                                | 14          |                 | a   |   |   |   |     |     |   |   |   |     |    |    |    |    |    | 5.0           |     |    |    |    |    |    |    |         | -5                                                                                     | 0     | 2     | μA    |    |
| V <sub>10L</sub>       | DET OUT<br>Low level                                   | 10          |                 | a   |   |   |   |     |     |   |   |   |     |    |    |    |    |    | 5.0           | 0   |    |    |    |    |    |    |         | —                                                                                      | 0.01  | 0.3   | V     |    |
| V <sub>10H</sub>       | DET OUT<br>High level                                  | 10          |                 | a   |   |   |   |     |     |   |   |   |     |    |    |    |    |    | 5.0           | 5.0 |    |    |    |    |    |    |         | 4.0                                                                                    | 4.2   | —     | V     |    |
| T <sub>D1</sub>        | BGP-pin ⑤ output<br>fall delay time                    | 7<br>11     |                 | a   | c | a | b | b   |     |   |   |   | 2.5 |    |    |    |    |    |               |     |    |    |    |    |    |    |         | SG 7 : CW 3.6 MHz,<br>0.8 V <sub>PP</sub><br>SG 11 : f=16 kHz, Pulse<br>wave           | 0     | 100   | 300   | ns |
| T <sub>D2</sub>        | BGP-pin ⑤ output<br>rise delay time                    | 7<br>11     |                 | a   | c | a | b | b   |     |   |   |   | 2.5 |    |    |    |    |    |               |     |    |    |    |    |    |    |         | SG 7 : CW 3.6 MHz,<br>0.8 V <sub>PP</sub><br>SG 11 : f=16 kHz, Pulse<br>wave           | 0     | 500   | 700   | ns |
| V <sub>01</sub>        | Phase detector voltage<br>Phase difference 90°         | 4<br>5<br>7 |                 | a   | b | b | b | a   |     |   |   |   |     |    |    | 0  |    |    |               |     |    |    |    |    |    |    |         | SG 4 : CW 3.6 MHz,<br>0.1 V <sub>PP</sub><br>SG 7 : CW 3.6 MHz,<br>0.8 V <sub>PP</sub> | 3.7   | 4.0   | 4.3   | V  |
| V <sub>011</sub>       | Phase detector<br>sensitivity<br>Phase difference 45°  | 4<br>5<br>7 |                 | a   | b | b | b | a   |     |   |   |   |     |    |    | 0  |    |    |               |     |    |    |    |    |    |    |         | SG 4 : CW 3.6 MHz,<br>0.1 V <sub>PP</sub><br>SG 7 : CW 3.6 MHz,<br>0.8 V <sub>PP</sub> | 0.21  | 0.26  | 0.31  | V  |
| V <sub>012</sub>       | Phase detector<br>sensitivity<br>Phase difference 135° | 4<br>5<br>7 |                 | a   | b | b | b | a   |     |   |   |   |     |    |    | 0  |    |    |               |     |    |    |    |    |    |    |         | SG 4 : CW 3.6 MHz,<br>0.1 V <sub>PP</sub><br>SG 7 : CW 3.6 MHz,<br>0.8 V <sub>PP</sub> | -0.31 | -0.26 | -0.21 | V  |
| V <sub>5</sub>         | Voltage at pin ⑤                                       | 5           |                 | a   |   |   |   |     |     |   |   |   |     |    |    |    |    |    | 5.0           |     |    |    |    |    |    |    |         | 3.8                                                                                    | 4.0   | 4.2   | V     |    |
| V <sub>0S1</sub>       | COMP 1<br>Offset voltage                               | 2           |                 | a   |   | c | b | a   |     |   |   |   |     |    |    |    |    |    | Var-<br>iable | 5.0 |    |    |    |    |    |    |         | 180                                                                                    | 220   | 260   | mV    |    |

6249826 0022706 1T8



PAL-M SYSTEM VCR CHROMA SIGNAL PROCESSOR

ELECTRICAL CHARACTERISTICS (cont.)

| Symbol         | Parameter        | Test point | Test conditions |     |   |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |     |     |     | Remarks | Limits |      |      | Unit |     |     |     |     |     |     |     |     |     |     |     |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |    |
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|                |                  |            | IN              | OUT | 1 | 2 | 3 | 4 | 5 | 6 | 7 | a | b | c | V1 | V2 | V3 | V4 | V5 | V6 | V7 | V8 | V9 | V10 | V11 | V12 |         |        |      |      |      | V13 | V14 | V15 | V16 | V17 | V18 | V19 | V20 | V21 | V22 | V23 | V24 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |    |
| V <sub>6</sub> | Voltage at pin ⑥ | 6          | a               | a   | a | a | b | a | a | a | a |   |   |   |    |    |    |    |    |    |    |    |    |     |     |     |         |        |      |      |      |     |     |     |     |     |     |     |     |     |     |     |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | </ |

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ELECTRICAL CHARACTERISTICS (cont.)

| Symbol           | Parameter                           | Test point | Test conditions |     |     |     |   |   |   |   |   |   |   |    |    |     |     |    | Remarks | Limits |      | Unit |
|------------------|-------------------------------------|------------|-----------------|-----|-----|-----|---|---|---|---|---|---|---|----|----|-----|-----|----|---------|--------|------|------|
|                  |                                     |            | IN              | OUT | 1   | 2   | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12  | 13  | 14 |         | Min.   | Typ. | Max. |
| I <sub>PH</sub>  | Judgement period<br>PAL-ROT:Hi      | 1 c c      |                 |     | 5.0 | 3.0 |   |   |   |   |   |   |   |    |    | 5.0 | 5.0 |    | 100     | 130    | 160  | μA   |
| I <sub>TNH</sub> | Judgement period<br>TRICK-NT-ROT:Hi | 1 c c      |                 |     | 5.0 | 3.0 |   |   |   |   |   |   |   |    |    | 2.5 | 0   |    | 100     | 130    | 160  | μA   |

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PAL-M SYSTEM VCR CHROMINANCE SIGNAL PROCESSOR

ELECTRICAL CHARACTERISTICS TEST METHOD

**G7-9, G7-23, G13-23, G7-16, G13-16, G13-20, G7-20, GN18-20, GP18-20, G18-23**

$$\text{Voltage gain } G_{IN-OUT} = 20 \log \frac{V_{OUT}}{V_{IN}} \text{ (dB)}$$

$V_{IN}$  Amplitude at input pin  
 $V_{OUT}$  Amplitude at output pin

**D7-9, D7-23, D13-23, D7-16, D13-16, D13-20, D7-20, DN18-20, DP18-20, D18-23**

$$\text{Secondary distortion } D_{IN-OUT} = 20 \log \frac{V_{2nd}}{V_{1st}} \text{ (dB)}$$

$V_{1st}$  Output element at 3.6MHz  
 $V_{2nd}$  Output element at 7.2MHz

**F7-9, F7-23, F13-23, F7-16, F13-16, F13-20, F7-20, FN18-20, FP18-20, F18-23**

$$\text{Frequency characteristics } F_{IN-OUT} = 20 \log \frac{V_{5M}}{V_{1M}} \text{ (dB)}$$

$V_{1M}$  Output amplitude with input of 1MHz  
 $V_{5M}$  Output amplitude with input of 5MHz

**CT1, CT2, CT3, CT4, CT5, CT6, CT7, CT8**

$$\text{Crosstalk } CT_n = 20 \log \frac{V_{OUT}}{V_{IN}} \text{ (dB)} \quad (n = 1 \text{ to } 8)$$

$V_{IN}$  Amplitude at input pin  
 $V_{OUT}$  Amplitude at output pin

**G2L**

Adjust voltage at pin ⑰ to 2.0V and voltage at pin ⑲ to 0.7V (gain minimum), and measure gain GCA2 with an amplitude of -6dB:

$$G_{CA2L} = 20 \log \frac{\text{pin } \textcircled{21} \text{ amplitude}}{\text{pin } \textcircled{7} \text{ amplitude}} \text{ (dB)}$$

**G2H**

Adjust voltage at pin ⑰ to 2.0V and voltage at pin ⑲ to 4.5V (gain maximum), and measure gain GCA2 with an amplitude of -6dB:

$$G_{CA2H} = 20 \log \frac{\text{pin } \textcircled{21} \text{ amplitude}}{\text{pin } \textcircled{7} \text{ amplitude}} \text{ (dB)}$$

**G1L**

Adjust voltage at pin ⑰ to 1.3V (gain minimum) and voltage at pin ⑲ to 2.0V (GCA2 = -6dB), and measure gains GCA1 and GCA2:

$$G_{CA1L} = 20 \log \frac{\text{pin } \textcircled{21} \text{ amplitude}}{\text{pin } \textcircled{18} \text{ amplitude}} \text{ (dB)}$$

**G1H**

Adjust voltage at pin ⑰ to 4.5V (gain maximum) and voltage at pin ⑲ to 2.0V (GCA2 = -6dB), and measure gains GCA1 and GCA2:

$$G_{CA1H} = 20 \log \frac{\text{pin } \textcircled{21} \text{ amplitude}}{\text{pin } \textcircled{18} \text{ amplitude}} \text{ (dB)}$$

**VTH24**

To find the minimum voltage, increase voltage at pin ⑳ from 0V, and measure it when the amperage of the current that flows to pin ① drops below 100μA. To find the maximum voltage, decrease voltage at pin ⑳ from 5V, and measure it when the amperage of the current that flows to pin ① exceeds 10μA.

**VTH12L**

To find the maximum voltage, decrease voltage at pin ⑫ from 2.5V, and measure it when pin ㉔ output becomes lower than GP18-20 by 0.5dB. To find the minimum voltage, measure the voltage at pin ⑫ when the pin ㉔ output becomes lower than GP18-20 by 40dB.

**VTH12H**

To find the minimum voltage, increase voltage at pin ⑫ from 2.5V in a state where there is input to pin ⑰, and measure the voltage when pin ㉔ output becomes lower than GP18-20 by 0.5dB. To find the maximum voltage, decrease voltage at pin ⑫ from 5V in a state where there is input to pin ⑰, and measure the voltage when pin ㉔ output becomes lower than G13-20 by 0.5dB.

**VTH22**

To find the minimum voltage, increase voltage at pin ㉔ from 0V in a state where there is input to pin ⑬, and measure the voltage when pin ㉔ output becomes lower than G13-20 by 0.5dB. To find the maximum voltage, decrease voltage at pin ㉔ from 5V in a state where there is input to pin ⑬, and measure the voltage when pin ㉔ output becomes lower than GP18-20 by 0.5dB.

**VTH11**

$$G_{7-5} = 20 \log \frac{\text{pin } \textcircled{5} \text{ output voltage}}{\text{pin } \textcircled{7} \text{ input voltage}} \text{ (dB)}$$

(G7-5: Voltage gain at pin ⑤ in comparison to input to pin ⑦ with voltage at pin ⑪ being 0V)

To find the minimum voltage, increase voltage at pin ⑪ from 0V, and measure it when pin ⑤ output becomes lower than G7-5 by 0.5dB. To find the maximum voltage, increase the voltage at pin ⑪ further, and measure it when pin ⑤ output becomes lower than G7-5 by 40dB.

**VTH15L**

To find the minimum voltage, increase voltage at pin ⑮ from 0V in a state where there is input to pin ⑬, and measure the voltage when pin ㉔ output becomes lower than G13-20 by 0.5dB. To find the maximum voltage, decrease the voltage at pin ⑮ from 2.5V in a state where there is input to pin ⑬, and measure the voltage when pin ㉔ output becomes lower than GP18-20 by 0.5dB.

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PAL-M SYSTEM VCR CHROMA SIGNAL PROCESSOR

**V<sub>TH15H</sub>**

To find the maximum voltage, decrease voltage at pin ⑮ from 5V, and measure it when pin ② output becomes lower than G<sub>18-23</sub> by 0.5dB. To find the minimum voltage, decrease the voltage at pin ⑮ further, and measure it when pin ② output becomes lower than G<sub>18-23</sub> by 40dB.

**V<sub>TH14L</sub>**

To find the minimum voltage, increase voltage at pin ⑭ from 0V, and measure it when voltage at pin ⑩ exceeds 0.3V. To find the maximum value, decrease the voltage at pin ⑭ from 2.5V, and measure it when the voltage at pin ⑩ drops below 4V.

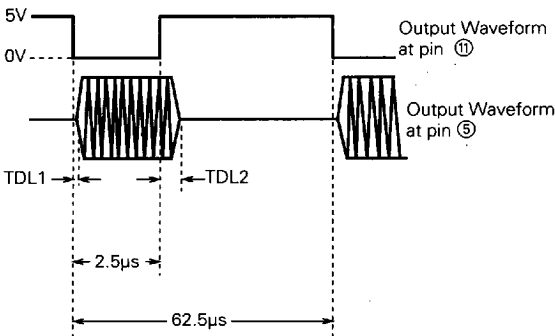
**V<sub>TH14H</sub>**

To find the minimum voltage, increase voltage at pin ⑭ from 2.5V, and measure it when voltage at pin ⑩ exceeds 0.3V. To find the maximum voltage, decrease voltage at pin ⑭ from 5V, and measure it when the voltage at pin ⑩ drops below 4V.

**T<sub>DL1</sub>, T<sub>DL2</sub>**

Measure pin ⑤ output delay time upon the rise and fall of pin ⑪ input pulses.

- 1) Output waveform at pin ⑪
- 2) Output waveform at pin ⑤



**V<sub>μ</sub>**

Measure voltage at pin ⑤ when the phase of SG4 is 90° ahead of SG7.

**V<sub>μ1</sub>**

When the phase of SG4 is 45° ahead of SG7,

$$V_{\mu 1} = V_{(71)} - V_{\mu} \text{ (V)}$$

V<sub>(71)</sub> Voltage at pin ⑤

**V<sub>μ2</sub>**

When the phase of SG4 is 135° ahead of SG7,

$$V_{\mu 2} = V_{(72)} - V_{\mu} \text{ (V)}$$

V<sub>(72)</sub> Voltage at pin ⑤

**V<sub>OS1</sub>**

Decrease voltage at pin ⑤ from 5V. When voltage at pin ② drops below 3V, voltage at pin ⑤ (V<sub>TH1</sub>) is expressed as follows:

$$V_{OS1} = V_{TH1} - V_5 \text{ (V)}$$

**V<sub>OS2</sub>**

Decrease voltage at pin ② from 5V. When voltage at pin ① drops below 4.3V, voltage at pin ② (V<sub>TH2</sub>) is expressed as follows:

$$V_{OS2} = V_{TH2} - V_6 \text{ (V)}$$

**V<sub>TH33</sub>, V<sub>TH34</sub>**

Increase pin ① voltage from 0V, and measure voltage at pin ① when pin ⑩ voltage exceeds 4V.

**V<sub>HYS</sub>**

Decrease voltage at pin ① from 5V. When pin ⑩ voltage drops below 0.3V, pin ① voltage (V<sub>H33</sub>) is expressed as follows:

$$V_{HYS} = V_{TH33} - V_{H33} \text{ (mV)}$$

**V<sub>NN</sub>**

Set voltage at pin ① to 0V, and decrease voltage at pin ⑫ from 5V to 2.5V. Check that pin ⑩ output is not dependent on the voltage at pin ①.

**V<sub>PP</sub>**

Set pin ① voltage to 5V, and decrease pin ⑫ voltage from 5V to 2.5V. Ensure that pin ⑩ output is not dependent on pin ① voltage.

**V<sub>NP</sub>**

Set voltage at pin ① to 0V, and voltage at pin ⑭ to 2.5V. Decrease voltage at pin ⑫ from 5V to 2.5V. Increase the voltage at pin ⑭ from 2.5V to 5V. Check that voltage at pin ⑩ voltage increases from below 0.3V to over 4V.

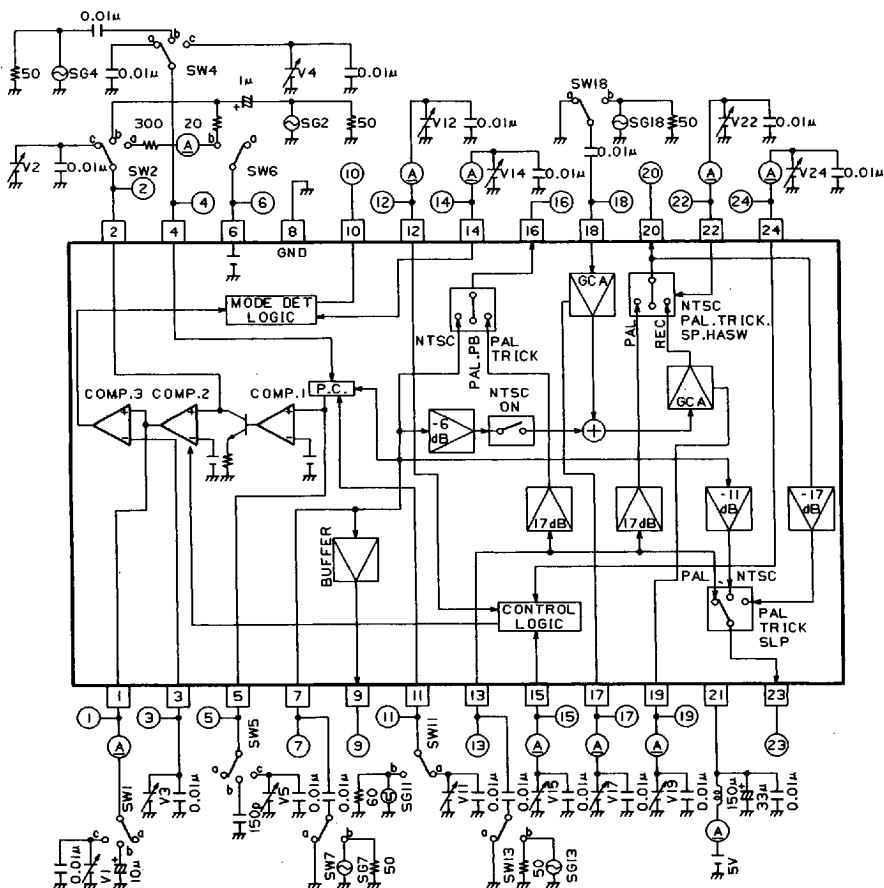
**V<sub>PN</sub>**

Set voltage at pin ① to 5V, and voltage at pin ⑭ to 2.5V. Decrease voltage at pin ⑫ from 5V to 2.5V. Decrease voltage at pin ⑭ from 2.5V to 0V. Check that voltage at pin ⑩ decreases from above 4V to below 0.3V.

**INL, INH, IPL, IPH, JTNH**

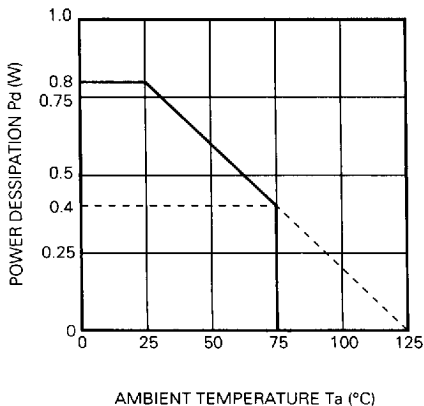
Check operation in the judgment period, during which a current flows to pin ①.

## TEST CIRCUIT



Units Resistance :  $\Omega$   
Capacitance : F

## TYPICAL CHARACTERISTICS

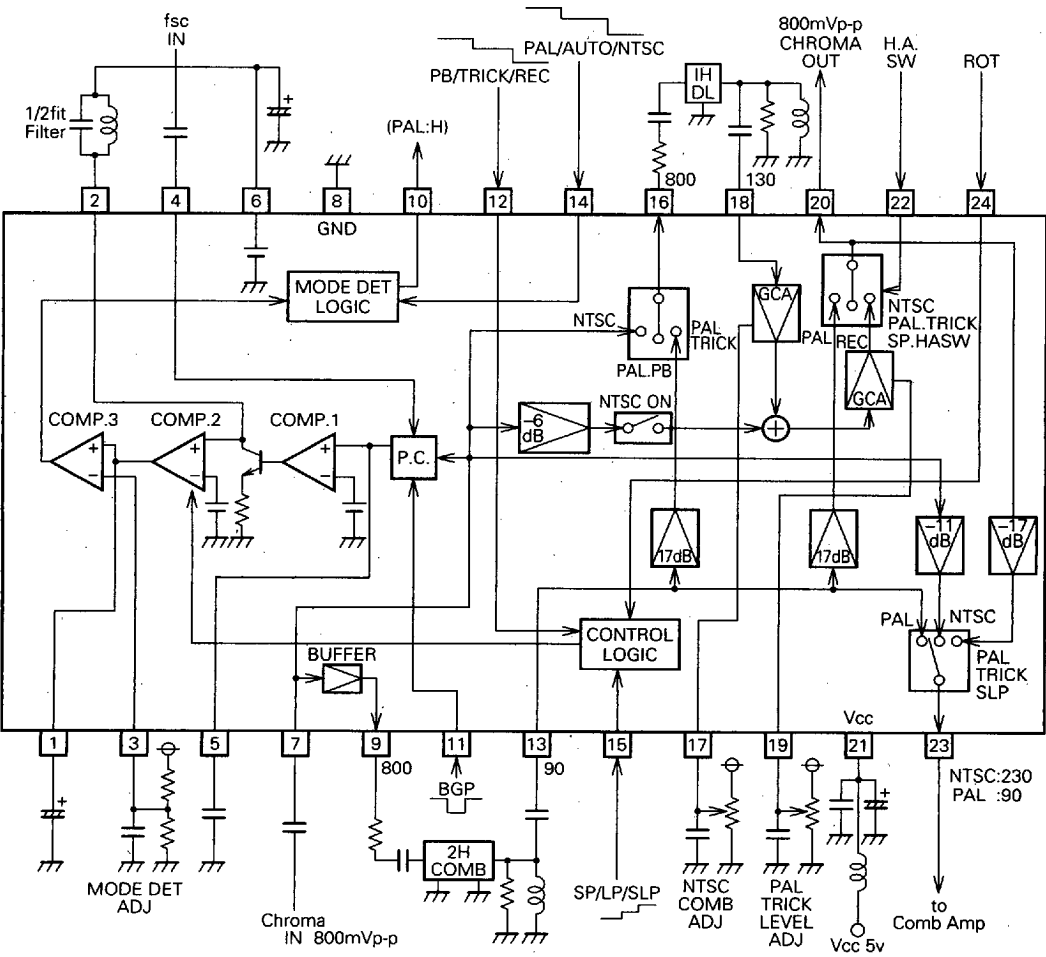
**THERMAL DERATING (MAXIMUM RATING)**

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PAL-M SYSTEM VCR CHROMA SIGNAL PROCESSOR

APPLICATION EXAMPLE

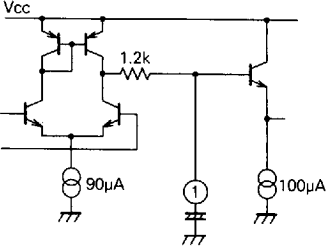
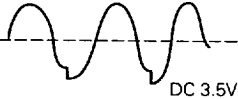
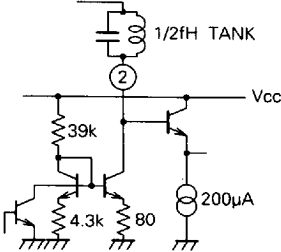
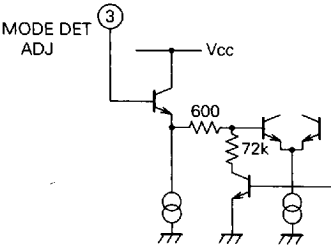
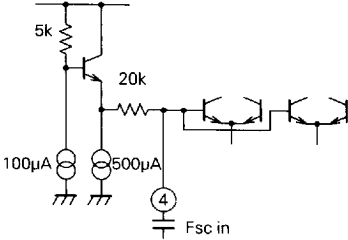


Units Resistance : Ω  
Capacitance : F

M52064L

PAL-M SYSTEM VCR CHROMA SIGNAL PROCESSOR

DESCRIPTION OF PIN

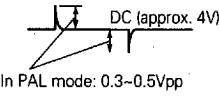
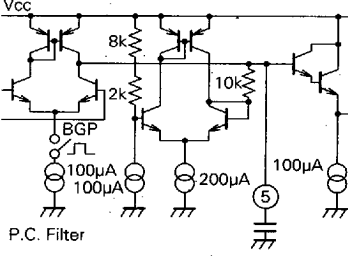
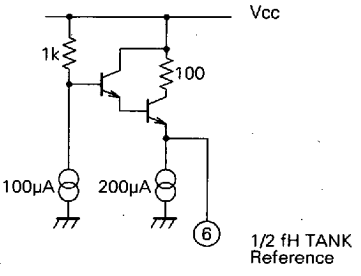
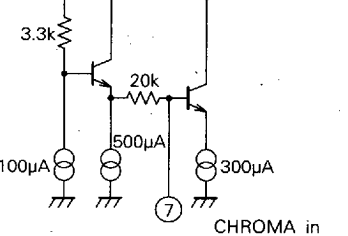
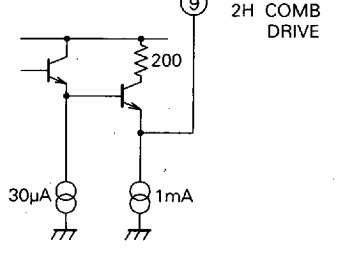
| Pin No. | Name                      | Voltage and wave information                                                                 | Peripheral circuit of pins                                                          |
|---------|---------------------------|----------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| ①       | MODE DET FILTER           | DC 1~4V                                                                                      |    |
| ②       | 1/2 F <sub>H</sub> Filter | <br>DC 3.5V |    |
| ③       | MOD DET ADJ               | DC (approx. 3V)                                                                              |  |
| ④       | fsc in                    | DC 3.7V<br>Z <sub>in</sub> ≈ 20kΩ<br>fsc input: 200mV <sub>pp</sub> ~500mV <sub>pp</sub>     |  |

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PAL-M SYSTEM VCR CHROMA SIGNAL PROCESSOR

DESCRIPTION OF PIN (cont.)

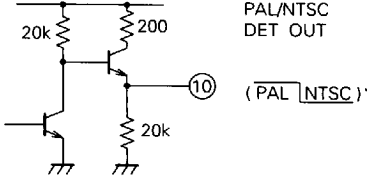
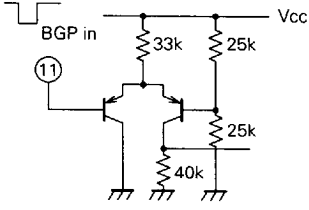
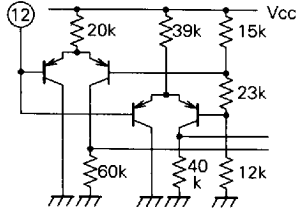
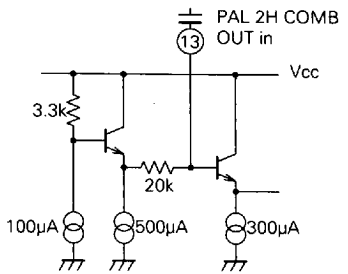
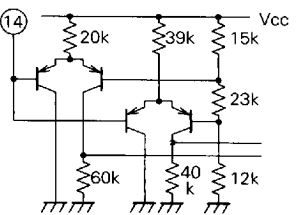
| Pin No. | Name                          | Voltage and wave information                                                                                                         | Peripheral circuit of pins                                                                                                                                                         |
|---------|-------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ⑤       | P.C. (phase detection) Filter |  <p>DC (approx. 4V)<br/>In PAL mode: 0.3~0.5Vpp</p> |  <p>Vcc<br/>8k<br/>2k<br/>10k<br/>BGP<br/>100µA<br/>100µA<br/>200µA<br/>100µA<br/>P.C. Filter</p> |
| ⑥       | 1/2 fH Filter Bias            | DC (approx. 3.5V)                                                                                                                    |  <p>Vcc<br/>1k<br/>100<br/>100µA<br/>200µA<br/>⑥<br/>1/2 fH TANK Reference</p>                    |
| ⑦       | CHROMA IN                     | DC 3.9V<br>Chroma signal 800mVpp (input)                                                                                             |  <p>3.3k<br/>20k<br/>100µA<br/>500µA<br/>300µA<br/>⑦<br/>CHROMA in</p>                          |
| ⑧       | GND                           | —                                                                                                                                    | —                                                                                                                                                                                  |
| ⑨       | 2H COMB DRIVE                 | DC 2.4V<br>Chroma signal 800mVpp (output)                                                                                            |  <p>⑨<br/>200<br/>30µA<br/>1mA<br/>2H COMB DRIVE</p>                                            |

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PAL-M SYSTEM VCR CHROMA SIGNAL PROCESSOR

DESCRIPTION OF PIN (cont.)

| Pin No. | Name                     | Voltage and wave information                                                                                      | Peripheral circuit of pins                                                          |
|---------|--------------------------|-------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| ⑩       | MODE DET OUTPUT          | PAL: 4V<br>NTSC: 0V                                                                                               |    |
| ⑪       | BGP IN                   |  H: 3V or over<br>L: 2V or under |    |
| ⑫       | MODE SW1 (control input) | PB 3.7V or over<br>TRICK mode (PB) 1.5~3V<br>REC 1V or under                                                      |   |
| ⑬       | 2H COMB IN               | DC (approx. 3.9V)<br>Zin = 20KΩ<br>Chroma input                                                                   |  |
| ⑭       | MODE SW2 (control input) | Enforced NTSC 0~1V<br>Automatic judgment 2~3V<br>Enforced PAL 4~5V                                                |  |

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PAL-M SYSTEM VCR CHROMA SIGNAL PROCESSOR

DESCRIPTION OF PIN (cont.)

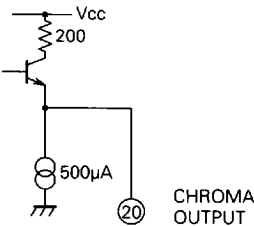
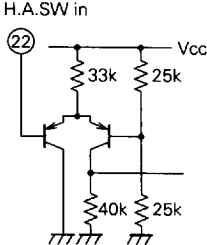
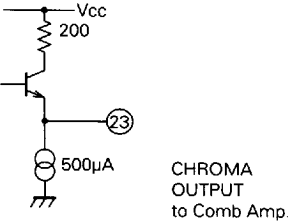
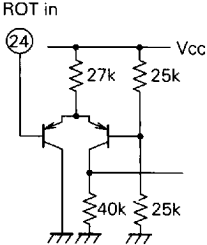
| Pin No. | Name                        | Voltage and wave information                 | Peripheral circuit of pins |
|---------|-----------------------------|----------------------------------------------|----------------------------|
| ⑮       | MODE SW3<br>(control input) | SP 0~1V<br>LP 2~3V<br>SLP 4~5V               | <p>SP/LP/SLP</p>           |
| ⑯       | 1H DL<br>DRIVE              | DC 2.4V<br>Chroma signal 800mVpp<br>(output) | <p>1HDL DRIVE</p>          |
| ⑰       | NTSC<br>COMB ADJ            | DC (1V~4V)                                   | <p>NTSC COMB ADJ</p>       |
| ⑱       | 1H DL IN                    | DC 3.9V<br>Chroma signal 150mVpp<br>(input)  | <p>1H DLOUT in</p>         |
| ⑲       | PAL TRICK<br>LEVEL<br>ADJV  | DC (1V~4V)                                   | <p>PAL TRICK ADJ</p>       |

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PAL-M SYSTEM VCR CHROMA SIGNAL PROCESSOR

DESCRIPTION OF PIN (cont.)

| Pin No. | Name           | Voltage and wave information                                     | Peripheral circuit of pins                                                          |
|---------|----------------|------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| ⑳       | CHROM OUT      | DC 3V<br>Chroma signal 800mVpp (output)                          |    |
| ㉑       | Vcc            | 5V                                                               | —                                                                                   |
| ㉒       | HEAD AMP SW    | Pulse input<br>L: 2V or under<br>H: 3V or over                   |    |
| ㉓       | COMB AMP DRIVE | DC 2.4V<br>Chroma signal<br>PAL 110mVpp<br>NTSC 230mVpp (output) |  |
| ㉔       | ROTARY SW      | Pulse input<br>L: 2V or under<br>H: 3V or over                   |  |

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