### TOSHIBA TRANSISTOR SILICON NPN TRIPLE DIFFUSED MESA TYPE

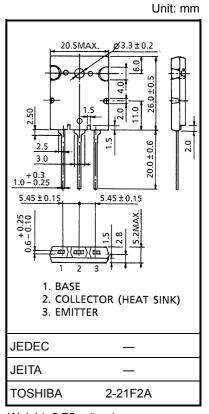
# 2SC5422

HORIZONTAL DEFLECTION OUTPUT FOR HIGH RESOLUTION DISPLAY, COLOR TV HIGH SPEED SWITCHING APPLICATIONS

 $\begin{array}{ll} \bullet & \mbox{High Voltage} & : \mbox{V}_{CBO} = 1700 \ \mbox{V} \\ \bullet & \mbox{Low Saturation Voltage} & : \mbox{V}_{CE} \ \mbox{(sat)} = 3 \ \mbox{V} \ \mbox{(Max.)} \\ \bullet & \mbox{High Speed} & : \mbox{t}_{f} = 0.15 \ \mbox{$\mu$s} \ \mbox{(Typ.)} \\ \end{array}$ 

## **MAXIMUM RATINGS (Tc = 25°C)**

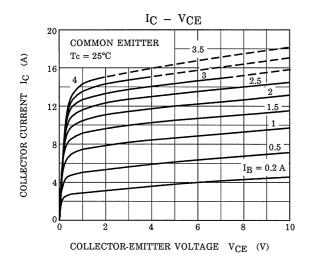
| CHARACTERISTIC              |       | SYMBOL           | RATING  | UNIT |  |
|-----------------------------|-------|------------------|---------|------|--|
| Collector-Base Voltage      |       | V <sub>CBO</sub> | 1700    | V    |  |
| Collector-Emitter Voltage   |       | V <sub>CEO</sub> | 600     | V    |  |
| Emitter-Base Voltage        |       | V <sub>EBO</sub> | 5       | V    |  |
| Collector Current           | DC    | Ic               | 15      | А    |  |
|                             | Pulse | I <sub>CP</sub>  | 30      |      |  |
| Base Current                |       | Ι <sub>Β</sub>   | 7.5     | Α    |  |
| Collector Power Dissipation |       | PC               | 200     | W    |  |
| Junction Temperature        |       | Tj               | 150     | °C   |  |
| Storage Temperature Range   |       | T <sub>stg</sub> | -55~150 | °C   |  |

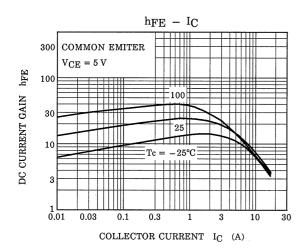


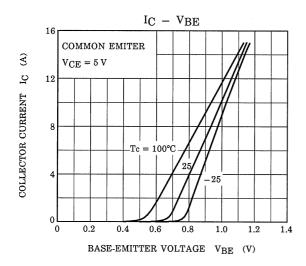
Weight: 9.75 g (typ.)

## **ELECTRICAL CHARACTERISTICS (Tc = 25°C)**

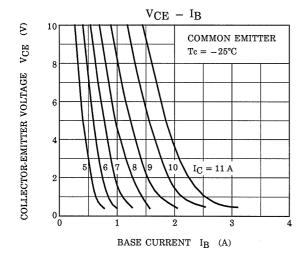
| CHARACTERISTIC               |                    | SYMBOL                | TEST CONDITION  | MIN | TYP. | MAX | UNIT |
|------------------------------|--------------------|-----------------------|---|-----|------|-----|------|
| Collector Cut-off Current    |                    | I <sub>CBO</sub>      | V <sub>CB</sub> = 1700 V, I <sub>E</sub> = 0                                    | _   | _    | 1   | mA   |
| Emitter Cut-off C            | urrent             | I <sub>EBO</sub>      | V <sub>EB</sub> = 5 V, I <sub>C</sub> = 0                                       | _   | _    | 100 | μΑ   |
| Emitter-Base Bre             | akdown Voltage     | V (BR) CEO            | I <sub>C</sub> = 10 mA, I <sub>B</sub> = 0                                      | 600 | _    | _   | V    |
| DC Current Gain              |                    | h <sub>FE (1)</sub>   | V <sub>CE</sub> = 5 V, I <sub>C</sub> = 2 A                                     | 10  | _    | 40  | _    |
|                              |                    | h <sub>FE (2)</sub>   | V <sub>CE</sub> = 5 V, I <sub>C</sub> = 11 A                                    | 4.5 | _    | 8.5 |      |
| Collector-Emitter            | Saturation Voltage | V <sub>CE</sub> (sat) | I <sub>C</sub> = 11 A, I <sub>B</sub> = 2.75 A                                  | _   | _    | 3   | V    |
| Base-Emitter Sat             | turation Voltage   | V <sub>BE</sub> (sat) | I <sub>C</sub> = 11 A, I <sub>B</sub> = 2.75 A                                  | _   | 1.0  | 1.5 | V    |
| Transition Frequency         |                    | f <sub>T</sub>        | V <sub>CE</sub> = 10 V, I <sub>C</sub> = 0.1 A                                  | _   | 2    | _   | MHz  |
| Collector Output Capacitance |                    | C <sub>ob</sub>       | V <sub>CB</sub> = 10 V, I <sub>E</sub> = 0, f = 1 MHz                           | _   | 220  | _   | pF   |
| Switching Time               | Storage Time       | t <sub>stg</sub>      | I <sub>CP</sub> = 8 A, I <sub>B1</sub> (end) = 1.4 A<br>f <sub>H</sub> = 64 kHz | _   | 2.5  | 3.5 | - µs |
|                              | Fall Time          | t <sub>f</sub>        |   | _   | 0.15 | 0.3 |      |

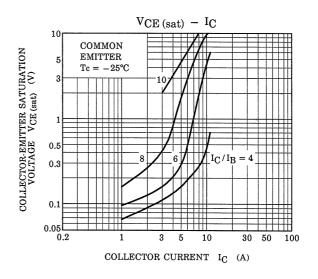


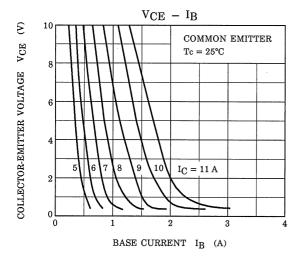


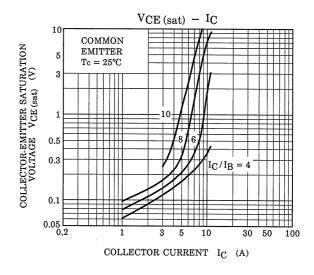


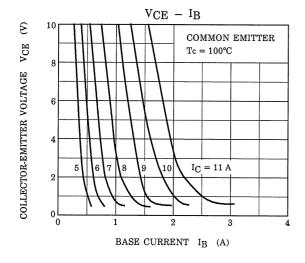
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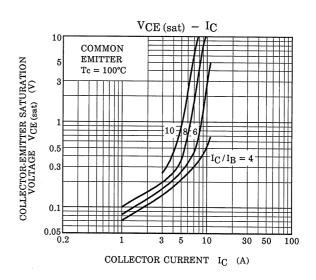




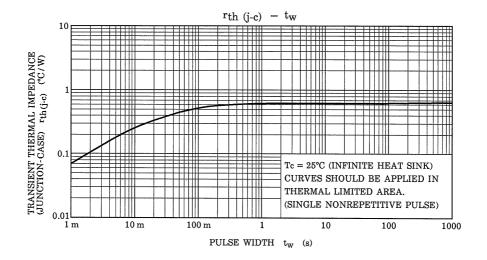


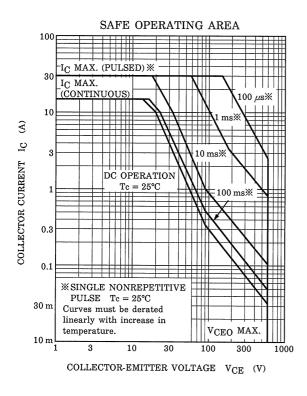


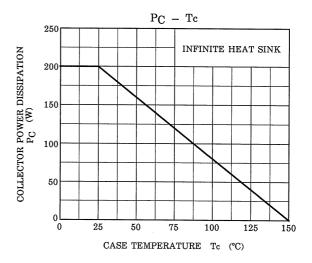




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