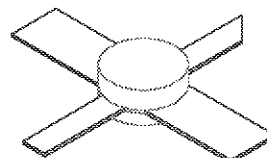


RF & MICROWAVE TRANSISTORS AVIONICS APPLICATIONS

- REFRACTORY/GOLD METALLIZATION
- EMITTER SITE BALLASTED
- ∞ :1 VSWR CAPABILITY
- LOW THERMAL RESISTANCE
- INPUT MATCHING
- OVERLAY GEOMETRY
- METAL/CERAMIC HERMETIC PACKAGE
- $P_{OUT} = 35$ W MIN. WITH 10.7 dB GAIN



.280 4LSL (S051)
epoxy sealed

ORDER CODE
MSC81035MP

BRANDING
81035MP

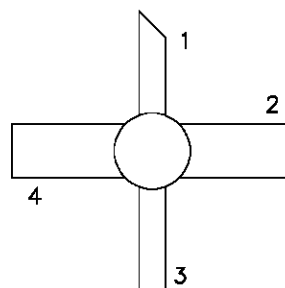
DESCRIPTION

The MSC81035MP is a medium power Class C transistor designed specifically for pulsed L-Band avionics applications. This device is a direct replacement for the MSC1035MP. MSC81035MP offers improved saturated output power and collector efficiency based on the test circuit described herein.

Low RF thermal resistance and computerized automatic wire bonding techniques ensure high reliability and product consistency.

The MSC81035MP is housed in the IMPAC™ package with internal input matching.

PIN CONNECTION



1. Collector 3. Emitter
2. Base 4. Base

ABSOLUTE MAXIMUM RATINGS ($T_{case} = 25^{\circ}C$)

| Symbol | Parameter | Value | Unit |
|------------|--|--------------|-------------|
| P_{DISS} | Power Dissipation* ($T_C \leq 100^{\circ}C$) | 150 | W |
| I_C | Device Current* | 3.0 | A |
| V_{CC} | Collector-Supply Voltage* | 55 | V |
| T_J | Junction Temperature (Pulsed RF Operation) | 250 | $^{\circ}C$ |
| T_{STG} | Storage Temperature | - 65 to +150 | $^{\circ}C$ |

THERMAL DATA

| | | | |
|---------------|-----------------------------------|-----|---------------|
| $R_{TH(j-c)}$ | Junction-Case Thermal Resistance* | 1.0 | $^{\circ}C/W$ |
|---------------|-----------------------------------|-----|---------------|

*Applies only to rated RF amplifier operation

Note: Thermal Resistance determined by Infra-Red Scanning of Hot-Spot Junction Temperature at rated RF operating conditions.

MSC81035MP

ELECTRICAL SPECIFICATIONS ($T_{\text{case}} = 25^{\circ}\text{C}$)

STATIC

| Symbol | Test Conditions | | Value | | | Unit |
|-------------------|------------------------------|-------------------------------|-------|------|------|------|
| | | | Min. | Typ. | Max. | |
| BV_{CBO} | $I_{\text{C}} = 10\text{mA}$ | $I_{\text{E}} = 0\text{mA}$ | 65 | — | — | V |
| BV_{EBO} | $I_{\text{E}} = 1\text{mA}$ | $I_{\text{C}} = 0\text{mA}$ | 3.5 | — | — | V |
| BV_{CER} | $I_{\text{C}} = 10\text{mA}$ | $R_{\text{BE}} = 10\Omega$ | 65 | — | — | V |
| I_{CES} | $V_{\text{BE}} = 0\text{V}$ | $V_{\text{CE}} = 50\text{V}$ | — | — | 5 | mA |
| h_{FE} | $V_{\text{CE}} = 5\text{V}$ | $I_{\text{C}} = 500\text{mA}$ | 15 | — | 120 | — |

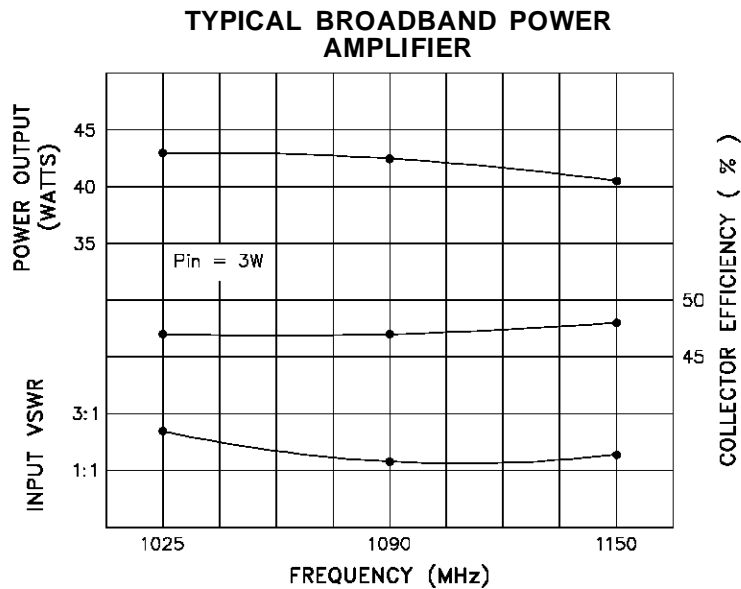
DYNAMIC

| Symbol | Test Conditions | | | Value | | | Unit |
|-------------------|--|-------------------------------|------------------------------|-------|------|------|------|
| | | | | Min. | Typ. | Max. | |
| P_{OUT} | $f = 1025 \text{ — } 1150 \text{ MHz}$ | $P_{\text{IN}} = 3.0\text{W}$ | $V_{\text{CC}} = 50\text{V}$ | 35 | 40 | — | W |
| η_{C} | $f = 1025 \text{ — } 1150 \text{ MHz}$ | $P_{\text{IN}} = 3.0\text{W}$ | $V_{\text{CC}} = 50\text{V}$ | 10.7 | 11.2 | — | % |
| G_{P} | $f = 1025 \text{ — } 1150 \text{ MHz}$ | $P_{\text{IN}} = 3.0\text{W}$ | $V_{\text{CC}} = 50\text{V}$ | 43 | 48 | — | dB |

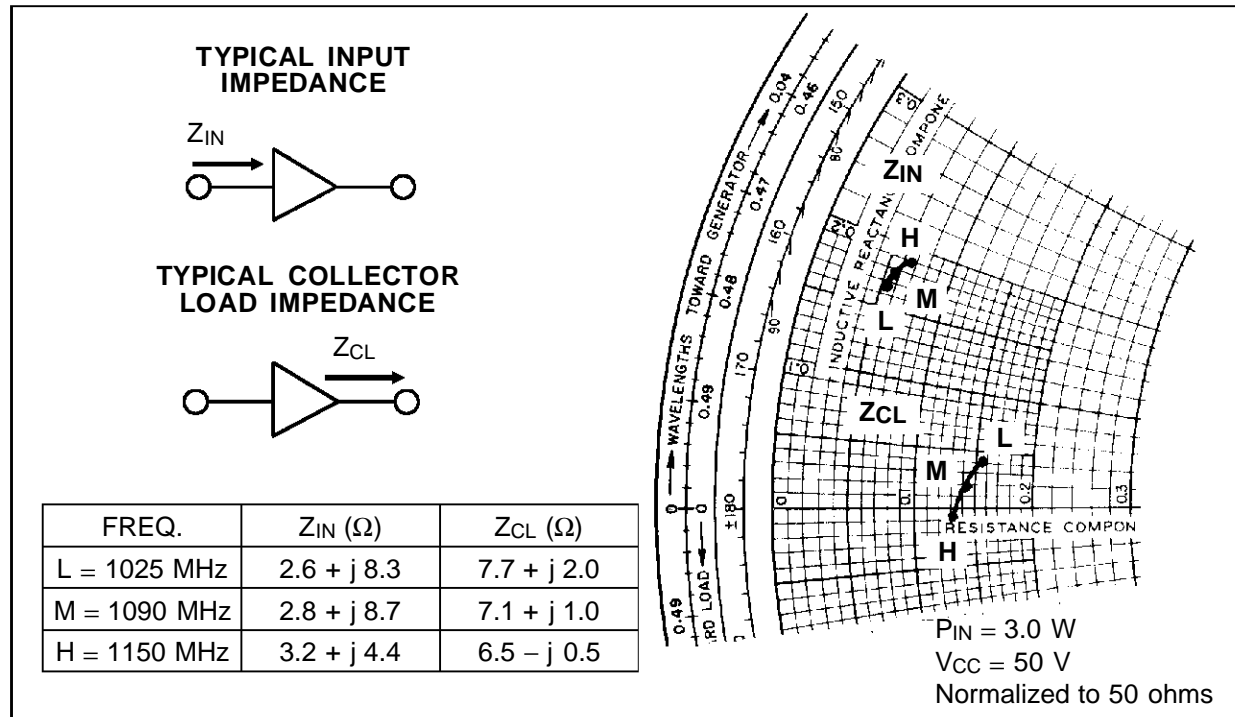
Note: Pulse Width = $10\mu\text{Sec}$

Duty Cycle = 1%

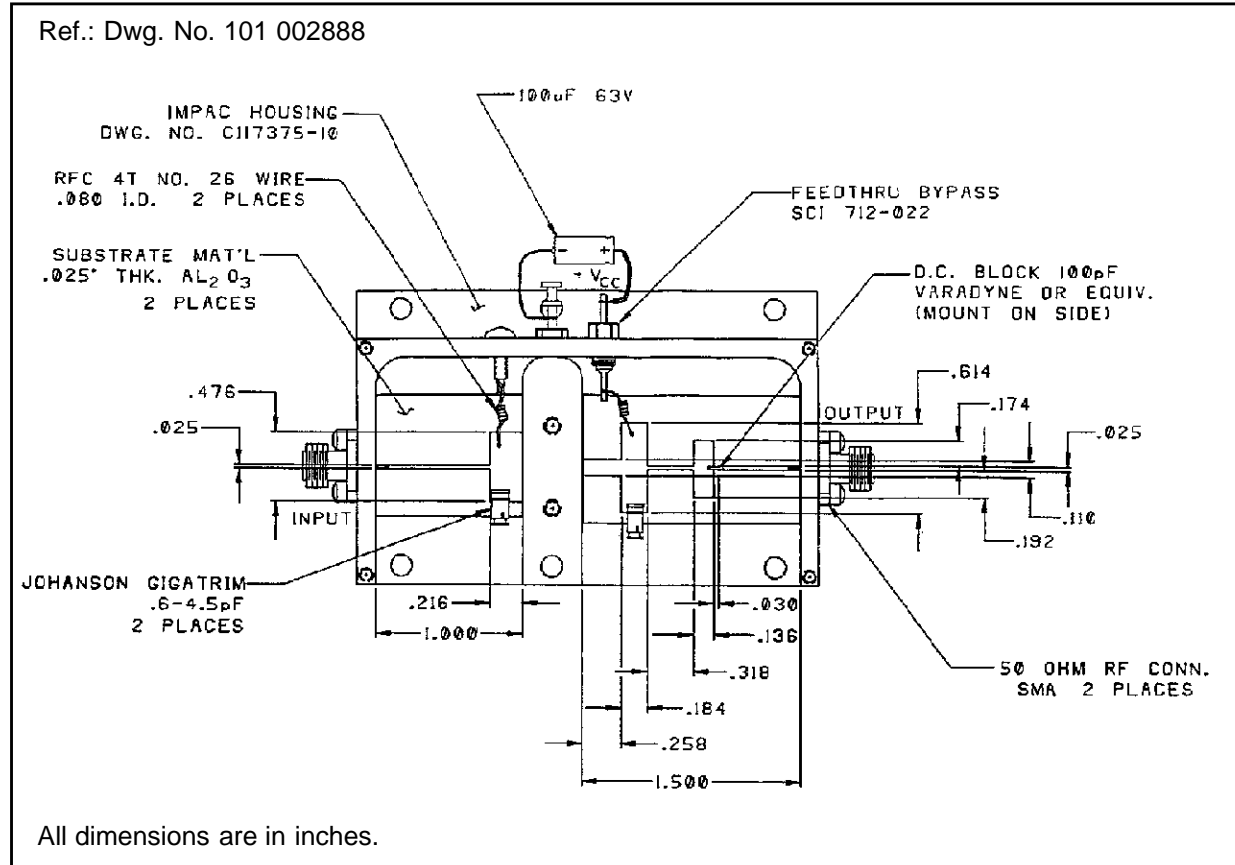
TYPICAL PERFORMANCE



IMPEDANCE DATA

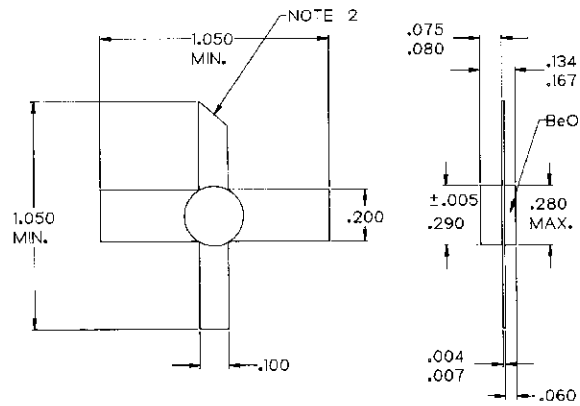


TEST CIRCUIT



PACKAGE MECHANICAL DATA

Ref.: Dwg. No.: J135032E

**NOTES:**

1. ALL TOLERANCE $\pm .010$ EXCEPT WHERE NOTED;
DIMENSIONS IN INCHES.
2. COLLECTOR LEAD SLANT CUT.

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