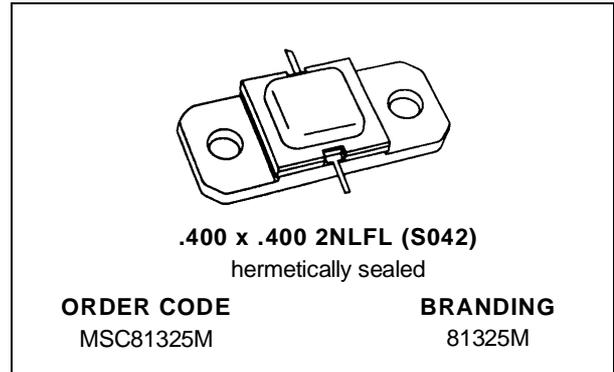


**RF & MICROWAVE TRANSISTORS  
AVIONICS APPLICATIONS**

PRELIMINARY DATA

- REFRACTORY/GOLD METALLIZATION
- EMITTER BALLASTED
- RUGGEDIZED VSWR  $\infty$ :1
- INPUT/OUTPUT MATCHING
- OVERLAY GEOMETRY
- METAL/CERAMIC HERMETIC PACKAGE
- $P_{OUT} = 325$  W MIN. WITH 6.7 dB GAIN

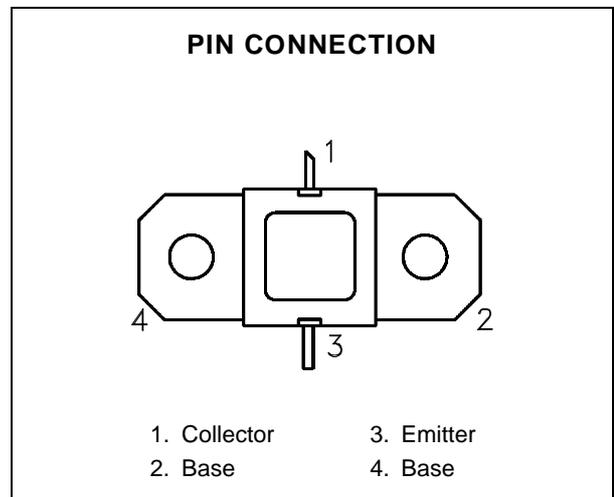


**DESCRIPTION**

The MSC81325M device is a high power pulsed transistor specifically designed for DME/TACAN avionics applications.

This device is capable of withstanding an infinite load VSWR at any phase angle under full rated conditions. Low RF thermal resistance and semi-automatic bonding techniques ensure high reliability and product consistency.

The MSC81325M is housed in the industry-standard AMPAC™ metal/ceramic hermetic package with internal input/output matching structures.



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

Symbol	Parameter	Value	Unit
$P_{DISS}$	Power Dissipation* ( $T_C \leq 100^{\circ}C$ )	880	W
$I_C$	Device Current*	24	A
$V_{CC}$	Collector-Supply Voltage*	55	V
$T_J$	Junction Temperature (Pulsed RF Operation)	250	$^{\circ}C$
$T_{STG}$	Storage Temperature	- 65 to +200	$^{\circ}C$

**THERMAL DATA**

$R_{TH(j-c)}$	Junction-Case Thermal Resistance*	0.17	$^{\circ}C/W$
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\*Applies only to rated RF amplifier operation

# MSC81325M

## ELECTRICAL SPECIFICATIONS (T<sub>case</sub> = 25°C)

### STATIC

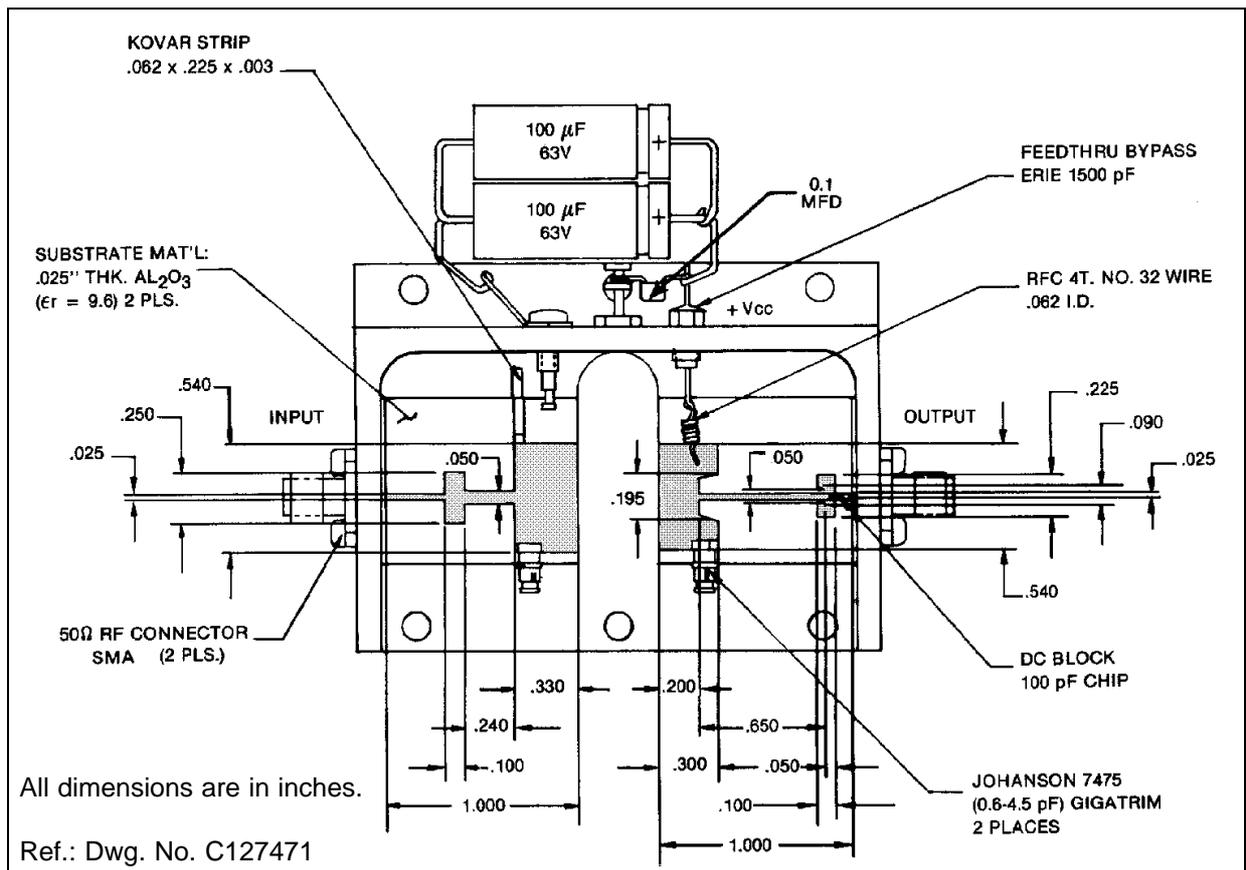
Symbol	Test Conditions		Value			Unit
			Min.	Typ.	Max.	
BV <sub>CBO</sub>	I <sub>C</sub> = 10mA	I <sub>E</sub> = 0mA	65	—	—	V
BV <sub>EBO</sub>	I <sub>E</sub> = 1mA	I <sub>C</sub> = 0mA	3.5	—	—	V
BV <sub>CER</sub>	I <sub>C</sub> = 25mA	R <sub>BE</sub> = 10Ω	65	—	—	V
I <sub>CES</sub>	V <sub>BE</sub> = 0V	V <sub>CE</sub> = 50V	—	—	25	mA
h <sub>FE</sub>	V <sub>CE</sub> = 5V	I <sub>C</sub> = 1A	15	—	120	—

### DYNAMIC

Symbol	Test Conditions			Value			Unit
				Min.	Typ.	Max.	
P <sub>OUT</sub>	f = 1025 — 1150 MHz	P <sub>IN</sub> = 70 W	V <sub>CC</sub> = 50 V	325	360	—	W
η <sub>C</sub>	f = 1025 — 1150 MHz	P <sub>IN</sub> = 70 W	V <sub>CC</sub> = 50 V	40	41	—	%
G <sub>P</sub>	f = 1025 — 1150 MHz	P <sub>IN</sub> = 70 W	V <sub>CC</sub> = 50 V	6.7	7.1	—	dB

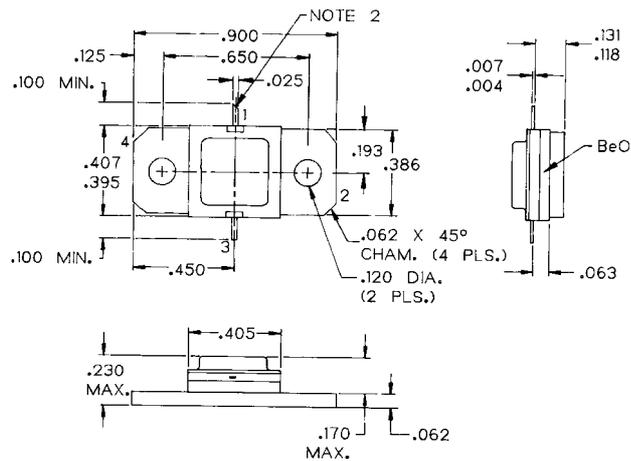
Note: Pulse Width = 10μSec  
Duty Cycle = 1%

### TEST CIRCUIT



PACKAGE MECHANICAL DATA

Ref.: Dwg. No.: J113214F



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

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