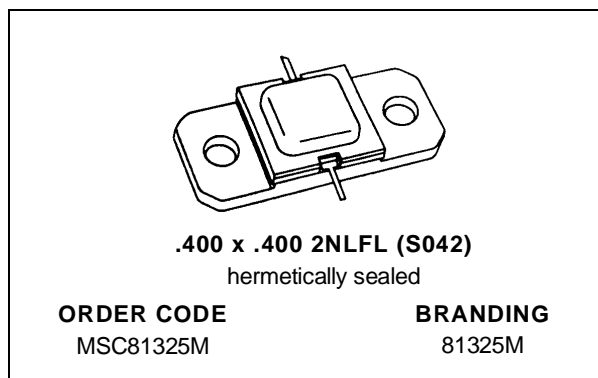


RF & MICROWAVE TRANSISTORS AVIONICS APPLICATIONS

PRELIMINARY DATA

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

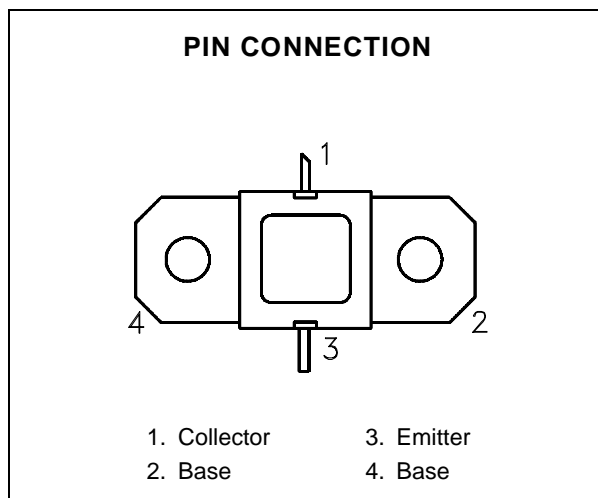


DESCRIPTION

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_{case} = 25°C)

STATIC

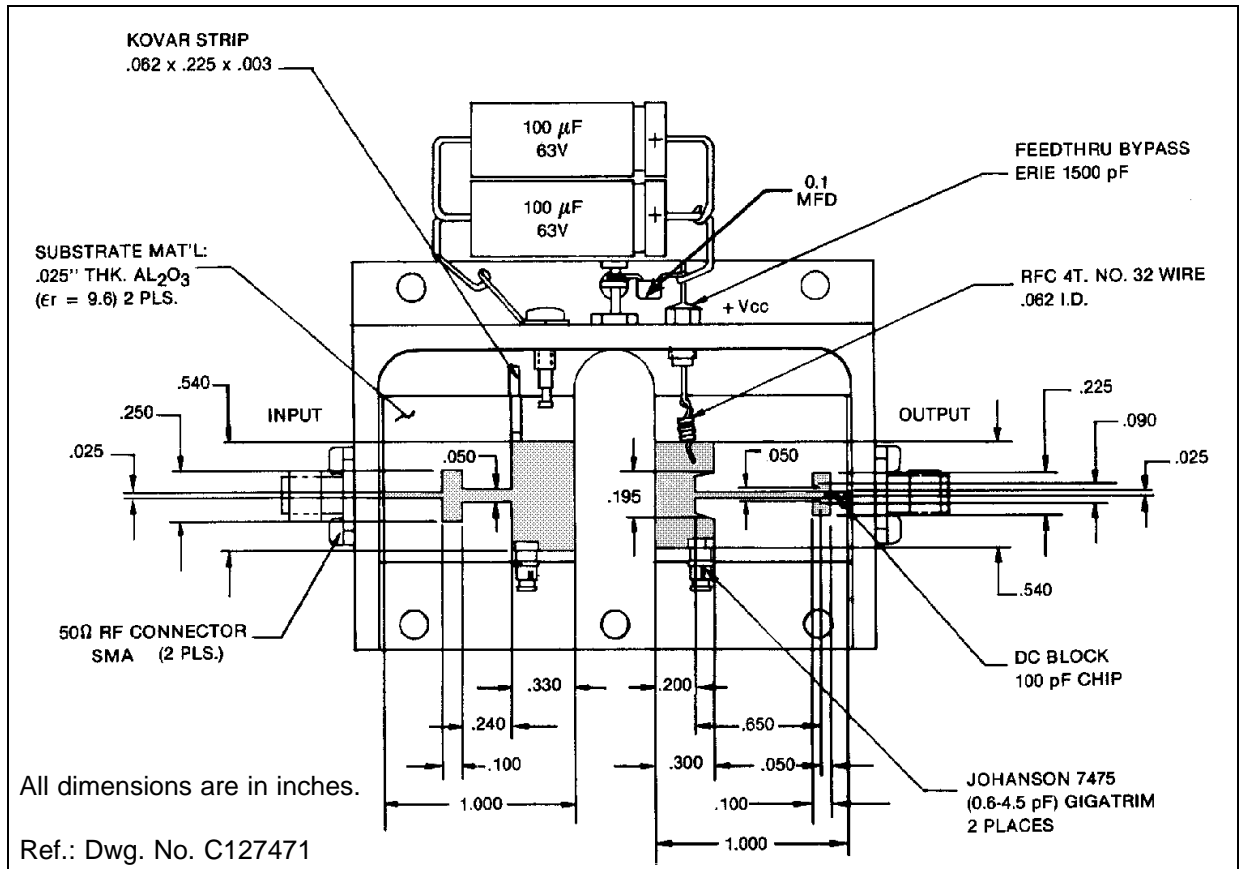
Symbol	Test Conditions		Value			Unit
			Min.	Typ.	Max.	
BV _{CBO}	I _C = 10mA	I _E = 0mA	65	—	—	V
BV _{EBO}	I _E = 1mA	I _C = 0mA	3.5	—	—	V
BV _{CER}	I _C = 25mA	R _{BE} = 10Ω	65	—	—	V
I _{CES}	V _{BE} = 0V	V _{CE} = 50V	—	—	25	mA
h _{FE}	V _{CE} = 5V	I _C = 1A	15	—	120	—

DYNAMIC

Symbol	Test Conditions			Value			Unit
				Min.	Typ.	Max.	
P _{OUT}	f = 1025 — 1150 MHz	P _{IN} = 70 W	V _{CC} = 50 V	325	360	—	W
η _C	f = 1025 — 1150 MHz	P _{IN} = 70 W	V _{CC} = 50 V	40	41	—	%
G _P	f = 1025 — 1150 MHz	P _{IN} = 70 W	V _{CC} = 50 V	6.7	7.1	—	dB

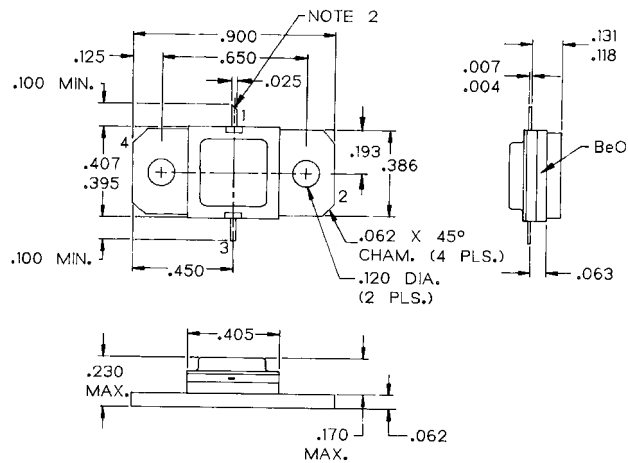
Note: Pulse Width = 10μSec
Duty Cycle = 1%

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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