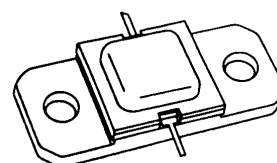


RF & MICROWAVE TRANSISTORS AVIONICS APPLICATIONS

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



.400 x .400 2NLFL (S042)
hermetically sealed

ORDER CODE
MSC81325M

BRANDING
81325M

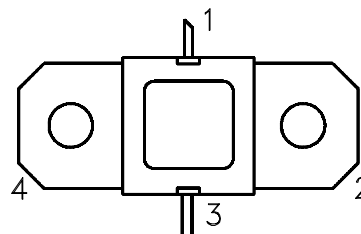
DESCRIPTION

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.

PIN CONNECTION



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

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

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

THERMAL DATA

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

MSC81325M

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}	$I_{\text{C}} = 25\text{mA}$	$R_{\text{BE}} = 10\Omega$	65	—	—	V
I_{CES}	$V_{\text{BE}} = 0\text{V}$	$V_{\text{CE}} = 50\text{V}$	—	—	25	mA
h_{FE}	$V_{\text{CE}} = 5\text{V}$	$I_{\text{C}} = 1\text{A}$	15	—	120	—

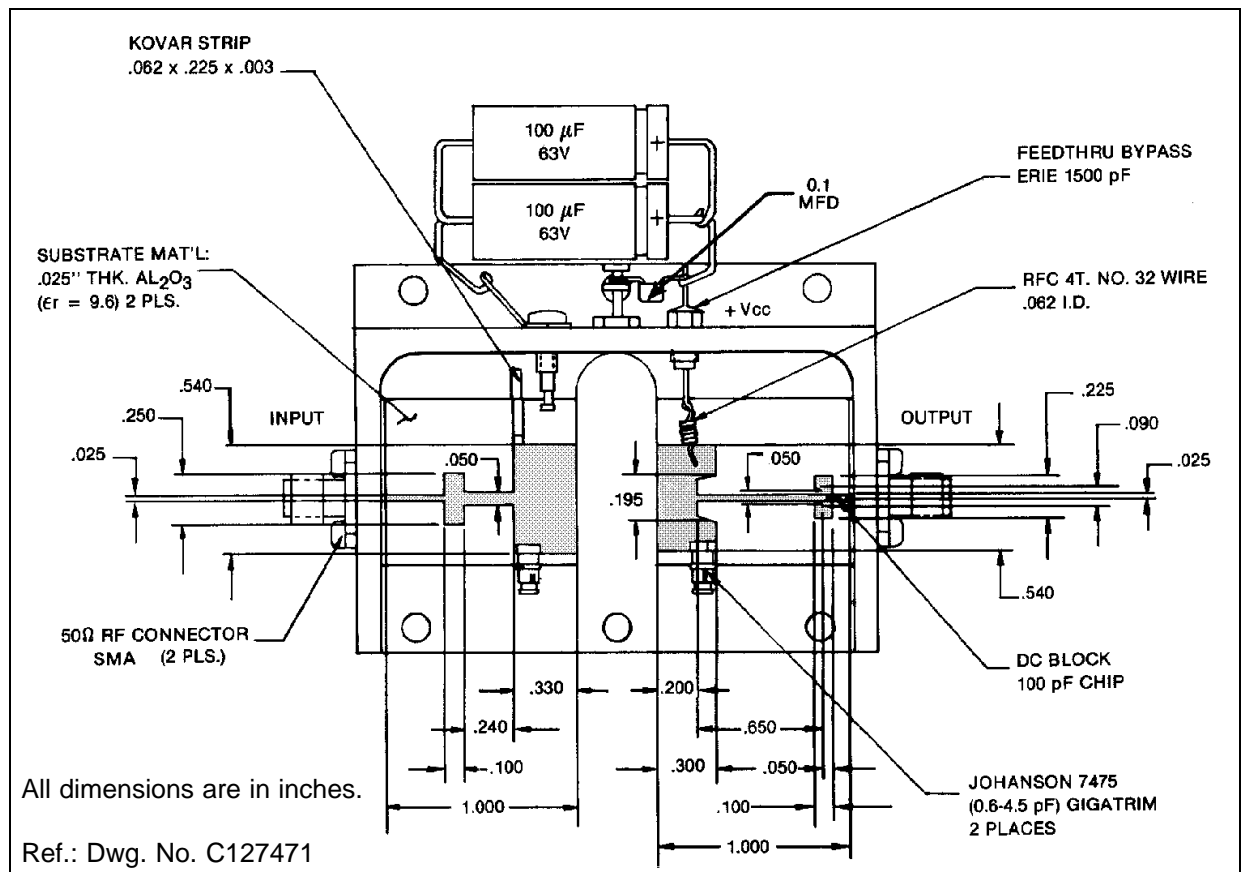
DYNAMIC

Symbol	Test Conditions			Value			Unit
				Min.	Typ.	Max.	
P_{OUT}	$f = 1025 - 1150\text{ MHz}$	$P_{\text{IN}} = 70\text{ W}$	$V_{\text{CC}} = 50\text{ V}$	325	360	—	W
η_{C}	$f = 1025 - 1150\text{ MHz}$	$P_{\text{IN}} = 70\text{ W}$	$V_{\text{CC}} = 50\text{ V}$	40	41	—	%
G_{P}	$f = 1025 - 1150\text{ MHz}$	$P_{\text{IN}} = 70\text{ W}$	$V_{\text{CC}} = 50\text{ V}$	6.7	7.1	—	dB

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

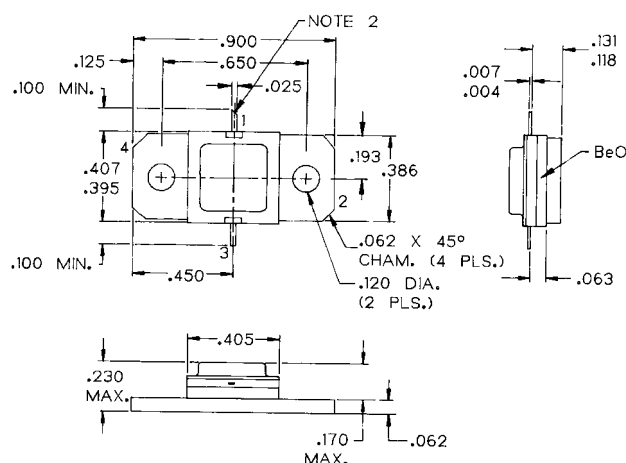
Duty Cycle = 1%

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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