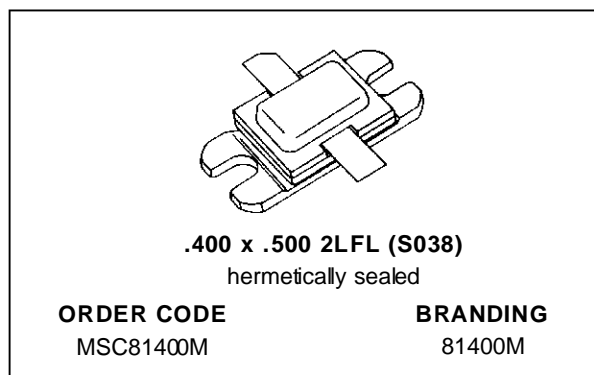


RF & MICROWAVE TRANSISTORS AVIONICS APPLICATIONS

- REFRACTORY/GOLD METALLIZATION
- RUGGEDIZED VSWR 25:1
- INTERNAL INPUT/OUTPUT MATCHING
- LOW THERMAL RESISTANCE
- METAL/CERAMIC HERMETIC PACKAGE
- P_{OUT} = 400 W MIN. WITH 6.5 dB GAIN

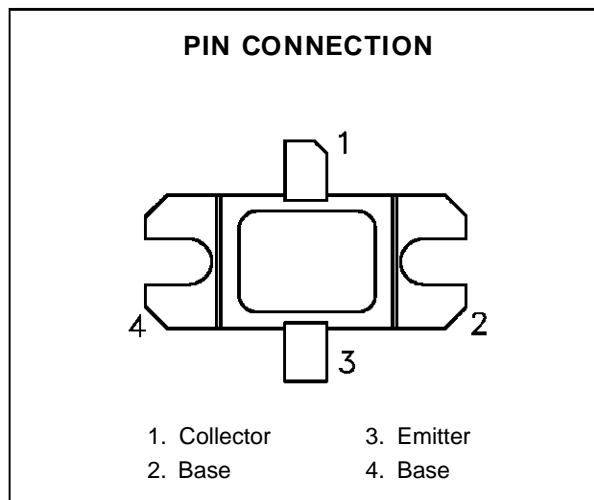


DESCRIPTION

The MSC81400M "Super Power" transistor is a high peak pulse power device specifically designed for DME/TACAN avionics applications.

This device is capable of withstanding a minimum 25:1 load mismatch condition at any phase angle under full rated conditions.

The MSC81400M is housed in the unique BIG-PAC™ hermetic metal/ceramic package with internal input/output matching structures.



ABSOLUTE MAXIMUM RATINGS (T_{case} = 25°C)

Symbol	Parameter	Value	Unit
P _{DISS}	Power Dissipation* (T _c ≤ 80°C)	1000	W
I _c	Device Current*	28	A
V _{CC}	Collector-Supply Voltage*	55	V
T _J	Junction Temperature (Pulsed RF Operation)	250	°C
T _{STG}	Storage Temperature	- 65 to +200	°C

THERMAL DATA

R _{TH(j-c)}	Junction-Case Thermal Resistance*	0.12	°C/W
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*Applies only to rated RF amplifier operation

MSC81400M

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

STATIC

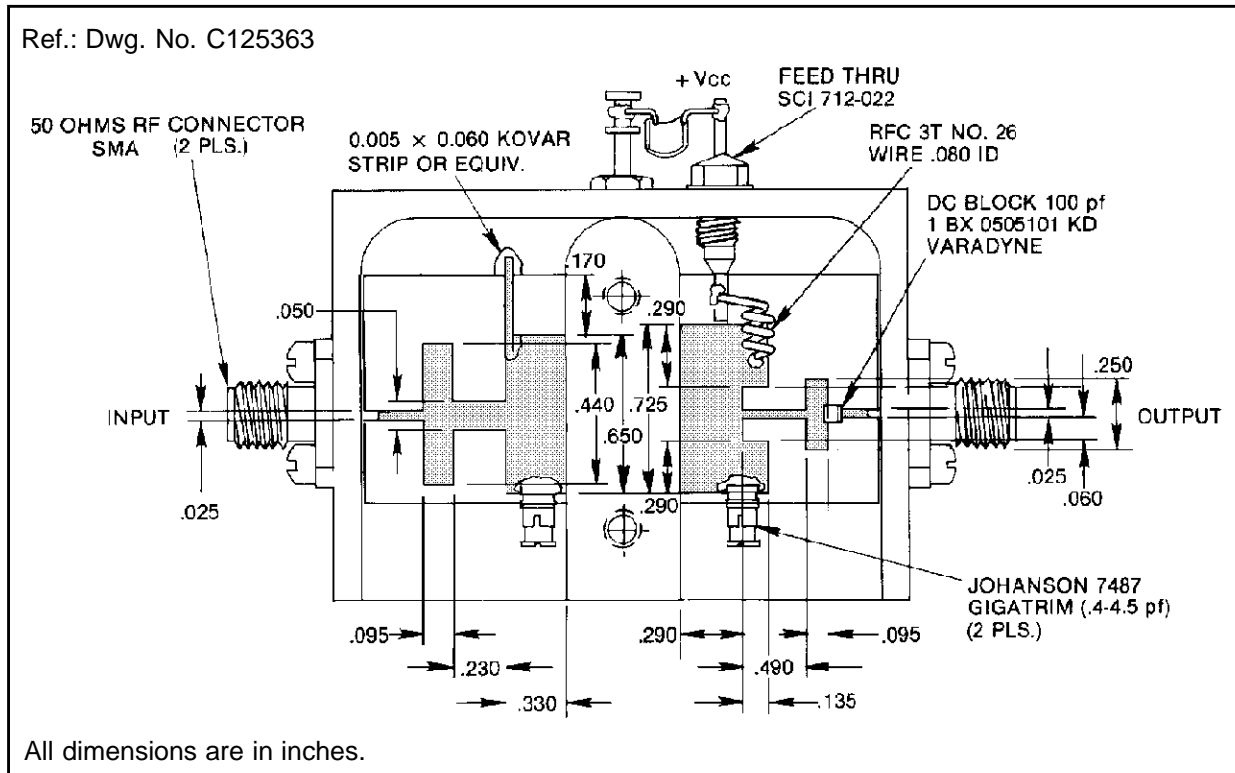
Symbol	Test Conditions	Value			Unit
		Min.	Typ.	Max.	
BV_{CBO}	$I_C = 15mA$ $I_E = 0mA$	65	—	—	V
BV_{EBO}	$I_E = 1mA$ $I_C = 0mA$	3.5	—	—	V
BV_{CER}	$I_C = 50mA$ $R_{BE} = 10\Omega$	65	—	—	V
I_{CES}	$V_{CE} = 50V$	—	—	35	mA
h_{FE}	$V_{CE} = 5V$ $I_C = 1A$	15	—	120	—

DYNAMIC

Symbol	Test Conditions	Value			Unit
		Min.	Typ.	Max.	
P_{OUT}	$f = 1025 - 1150$ MHz $P_{IN} = 90$ W $V_{CC} = 50$ V	400	450	—	W
η_c	$f = 1025 - 1150$ MHz $P_{IN} = 90$ W $V_{CC} = 50$ V	40	—	—	%
G_P	$f = 1025 - 1150$ MHz $P_{IN} = 90$ W $V_{CC} = 50$ V	6.5	—	—	dB

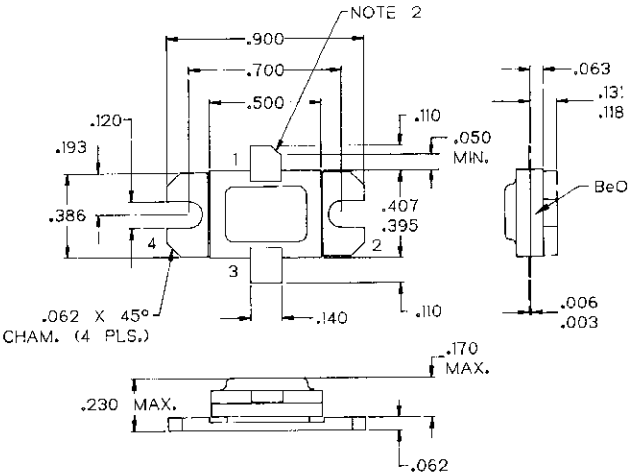
Note: Pulse Width = $10\mu Sec$
 Duty Cycle = 1%

TEST CIRCUIT



PACKAGE MECHANICAL DATA

Ref.: Dwg. No.: J135066F



- NOTES:
1. ALL TOLERANCE $\pm .010$ EXCEPT WHERE NOTED; DIMENSIONS IN INCHES.
 2. COLLECTOR LEAD CHAMFER 45° NOM. X .040 NOM.

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