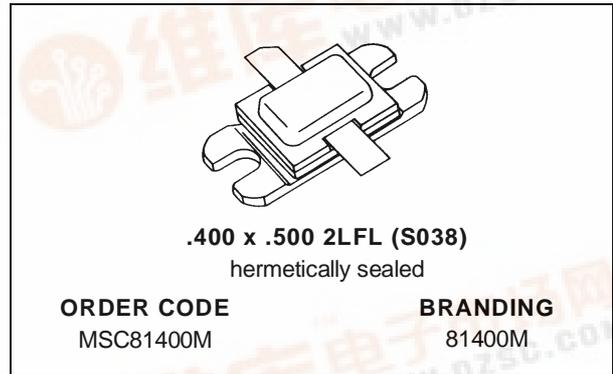




MSC81400M

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

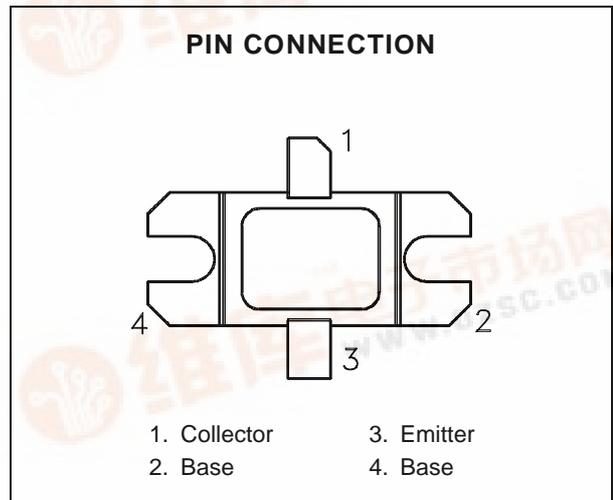


DESCRIPTION

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-PACT™ 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°C)

STATIC

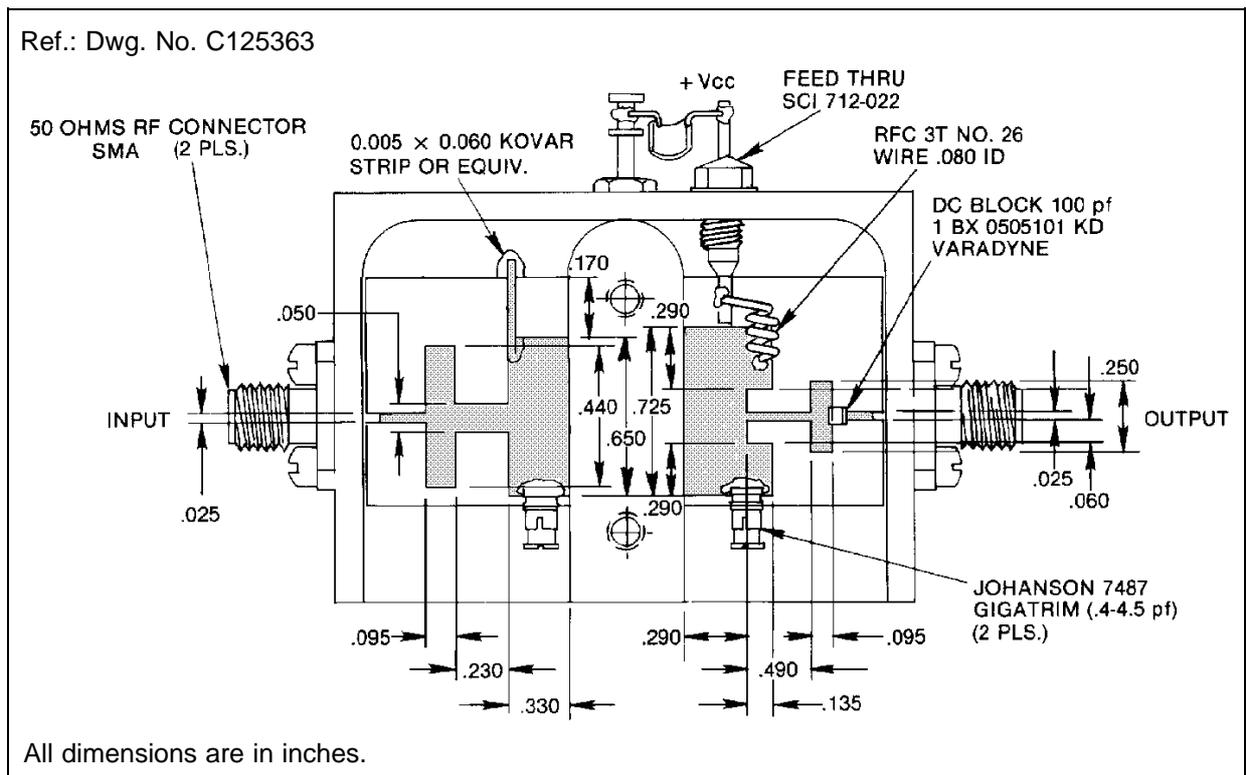
Symbol	Test Conditions		Value			Unit
			Min.	Typ.	Max.	
BV _{CBO}	I _C = 15mA	I _E = 0mA	65	—	—	V
BV _{EBO}	I _E = 1mA	I _C = 0mA	3.5	—	—	V
BV _{CER}	I _C = 50mA	R _{BE} = 10Ω	65	—	—	V
I _{CES}	V _{CE} = 50V		—	—	35	mA
h _{FE}	V _{CE} = 5V	I _C = 1A	15	—	120	—

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

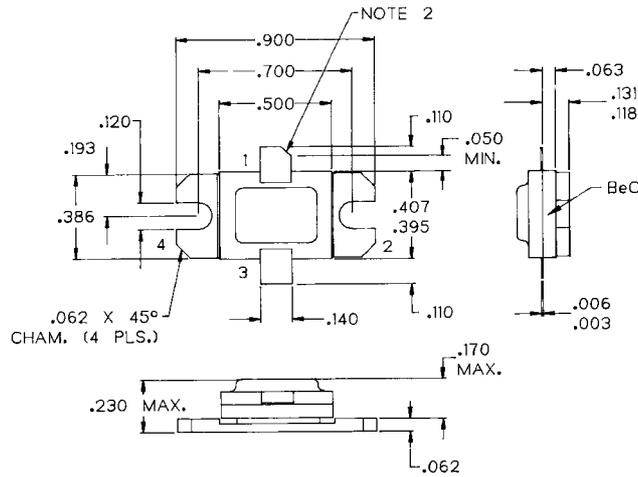
Note: Pulse Width = 10μSec
Duty Cycle = 1%

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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