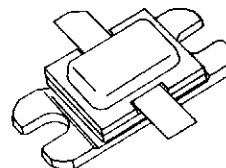


RF & MICROWAVE TRANSISTORS AVIONICS APPLICATIONS

- REFRACTORY\GOLD METALLIZATION
- RUGGEDIZED VSWR 25:1
- INTERNAL INPUT/OUTPUT MATCHING
- LOW THERMAL RESISTANCE
- METAL/CERAMIC HERMETIC PACKAGE
- $P_{OUT} = 450 \text{ W MIN. WITH } 7.0 \text{ dB GAIN}$



.400 x .500 2LFL (S038)
hermetically sealed

ORDER CODE
MSC81450M

BRANDING
81450M

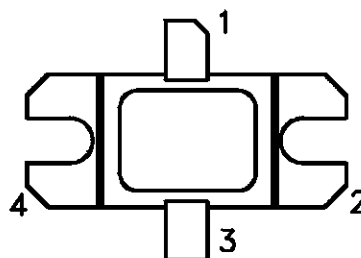
DESCRIPTION

The MSC81450M device is a high power pulsed transistor specifically designed for IFF avionics applications.

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

The MSC81450M is housed in the unique BIG-PAC™ 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*	910	W
I_C	Device Current*	28	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*	0.15	$^{\circ}\text{C/W}$
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*Applies only to rated RF amplifier operation

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

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

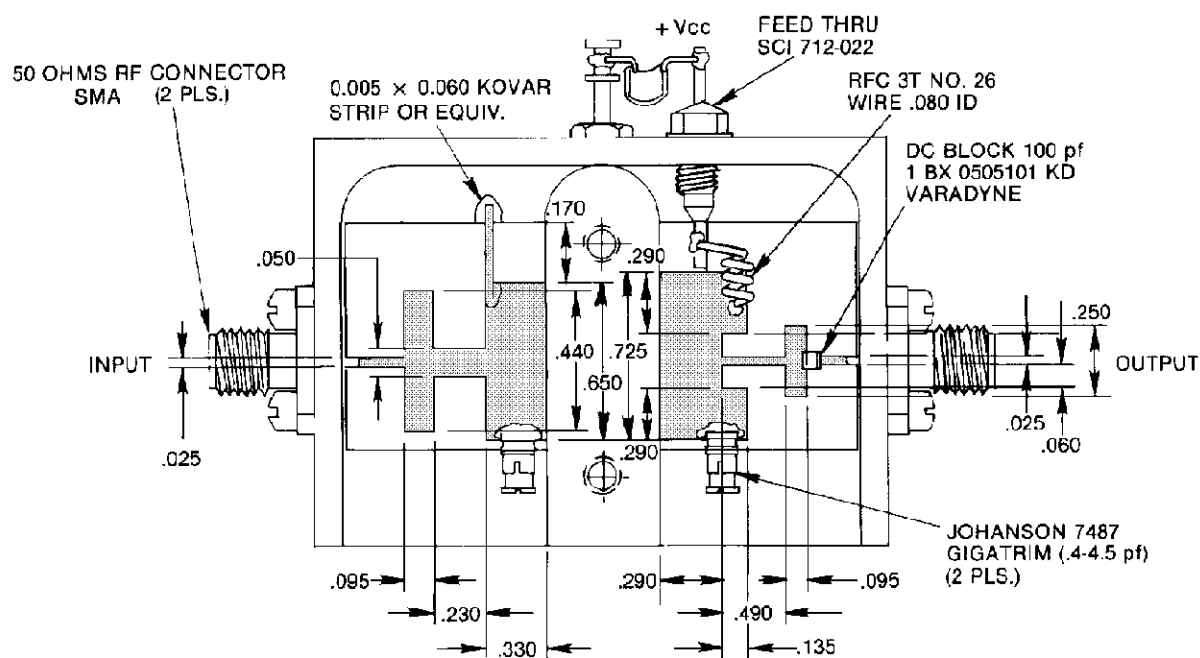
DYNAMIC

Symbol	Test Conditions	Value			Unit
		Min.	Typ.	Max.	
P_{OUT}	$f = 1090\text{ MHz}$ $P_{IN} = 90\text{ W}$ $V_{CC} = 50\text{ V}$	450	500	—	W
η_c	$f = 1090\text{ MHz}$ $P_{IN} = 90\text{ W}$ $V_{CC} = 50\text{ V}$	40	—	—	%
G_P	$f = 1090\text{ MHz}$ $P_{IN} = 90\text{ W}$ $V_{CC} = 50\text{ V}$	7.0	—	—	dB

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

TEST CIRCUIT

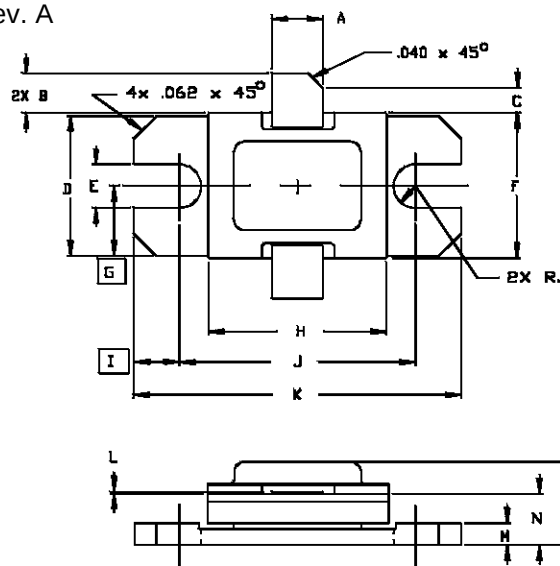
Ref.: Dwg. No. C125363



All dimensions are in inches.

PACKAGE MECHANICAL DATA

Ref.: Dwg. No. 12-0212 rev. A



SGS-THOMSON MICROELECTRONICS			CONT'D		
	MINIMUM Inches/mm	MAXIMUM Inches/mm		MINIMUM Inches/mm	MAXIMUM Inches/mm
A	.135/3,43	.145/3,68	K	.890/22,61	.910/23,11
B	.100/2,54	.120/3,05	L	.003/0,08	.006/0,15
C	.050/1,27		M	.052/1,32	.072/1,83
D	.376/9,55	.396/10,06	N	.118/3,00	.131/3,33
E	.110/2,79	.130/3,30	P		.230/5,84
F	.395/10,03	.407/10,34			
G	.193/4,90				
H	.490/12,45	.510/12,95			
I	.100/2,54				
J	.690/17,53	.710/18,03			

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