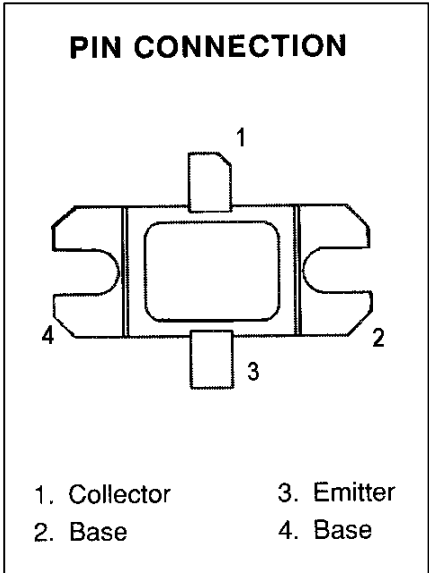


# MSC1400M

## RF & MICROWAVE TRANSISTORS AVIONICS APPLICATIONS

### Features

- 1025-1150 MHz
- 25:1 VSWR CAPABILITY
- P<sub>OUT</sub> = 400 WATTS
- G<sub>p</sub> = 6.5 dB MINIMUM
- GOLD METALLIZATION
- INPUT/OUTPUT MATCHING
- COMMON BASE CONFIGURATION



### DESCRIPTION:

The MSC1400M is a high power pulsed transistor specifically designed for IFF avionics applications. It is designed for operation under short pulse width and low duty cycle pulse conditions and is capable of withstanding a minimum 25:1 load mismatch at rated RF conditions. Internal impedance matching and gold metallization ensure high product reliability and consistency.

### ABSOLUTE MAXIMUM RATINGS (T<sub>case</sub> = 25°C)

Symbol	Parameter	Value	Unit
P <sub>DISS</sub>	Power Dissipation	1000	W
I <sub>C</sub>	Device Current	28	A
V <sub>CC</sub>	Collector - Base Voltage	55	V
T <sub>J</sub>	Junction Temperature	+250	°C
T <sub>STG</sub>	Storage Temperature	-65 to +150	°C

### Thermal Data

R <sub>TH(J-C)</sub>	Thermal Resistance Junction-case	0.12	°C/W
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**MSC1400M**
**ELECTRICAL SPECIFICATIONS (T<sub>case</sub> = 25°C)**
**STATIC**

Symbol	Test Conditions	Value			Unit
		Min.	Typ.	Max.	
<b>BV<sub>CBO</sub></b>	<b>I<sub>C</sub> = 15mA      I<sub>E</sub> = 0mA</b>	<b>65</b>	<b>---</b>	<b>---</b>	<b>V</b>
<b>BV<sub>EBO</sub></b>	<b>I<sub>E</sub> = 1mA      I<sub>C</sub> = 0mA</b>	<b>3.5</b>	<b>---</b>	<b>---</b>	<b>V</b>
<b>BV<sub>CER</sub></b>	<b>I<sub>C</sub> = 50mA      R<sub>BE</sub> = 10Ω</b>	<b>65</b>	<b>---</b>	<b>---</b>	<b>V</b>
<b>I<sub>CES</sub></b>	<b>V<sub>CB</sub> = 50V</b>	<b>---</b>	<b>---</b>	<b>35</b>	<b>mA</b>
<b>HFE</b>	<b>V<sub>CE</sub> = 5V      I<sub>C</sub> = 1A</b>	<b>15</b>	<b>---</b>	<b>120</b>	<b>---</b>

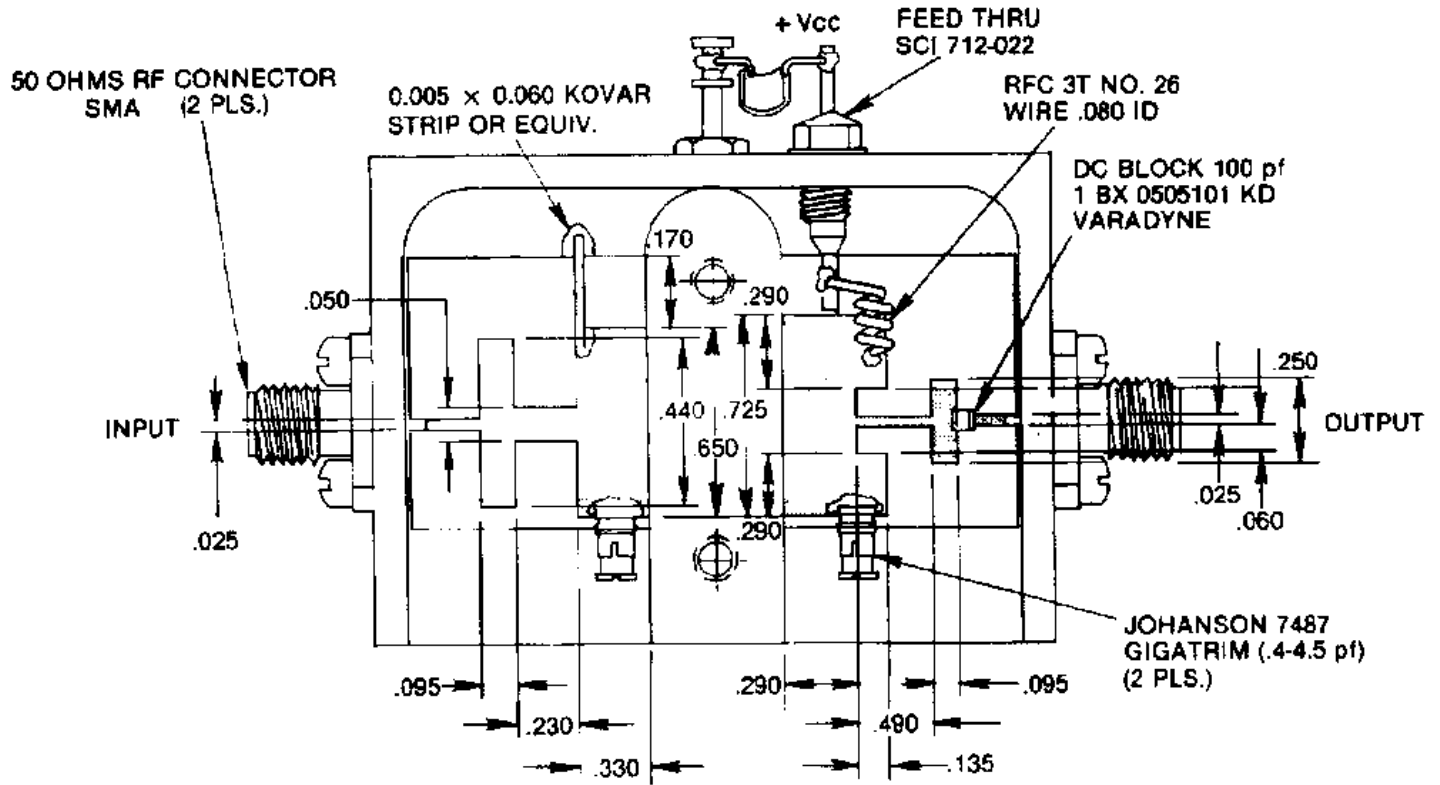
**DYNAMIC**

Symbol	Test Conditions	Value			Unit
		Min.	Typ.	Max.	
<b>P<sub>OUT</sub></b>	<b>f = 1025-1150 MHz    P<sub>IN</sub> = 90 W    V<sub>CC</sub> = 50 V</b>	<b>400</b>	<b>450</b>	<b>---</b>	<b>W</b>
<b>η<sub>C</sub></b>	<b>f = 1025-1150 MHz    P<sub>IN</sub> = 90 W    V<sub>CC</sub> = 50 V</b>	<b>40</b>	<b>---</b>	<b>---</b>	<b>%</b>
<b>G<sub>P</sub></b>	<b>f = 1025-1150 MHz    P<sub>IN</sub> = 90 W    V<sub>CC</sub> = 50 V</b>	<b>6.5</b>	<b>---</b>	<b>---</b>	<b>dB</b>
<b>Conditions</b>	<b>Pulse Width = 10μS    Duty Cycle = 1%</b>				

**MSC1400M**

**TEST CIRCUIT**

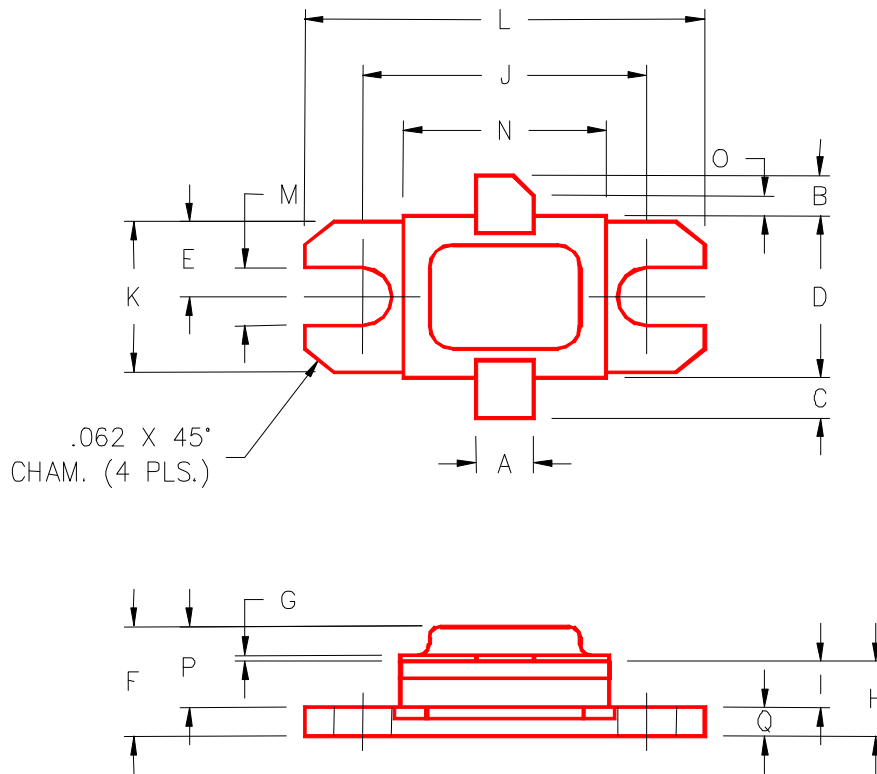
Ref.: Dwg. No. C125363



All dimensions are in inches.

**PACKAGE MECHANICAL DATA**

PACKAGE STYLE M216



	MINIMUM INCHES/MM	MAXIMUM INCHES/MM		MINIMUM INCHES/MM	MAXIMUM INCHES/MM
A	.140/3,56		J	.700/17,78	
B	.110/2,80		K	.386/9,80	
C	.110/2,80		L	.900/22,86	
D	.395/10,03	.407/10,34	M	.120/3,05	
E	.193/4,90		N	.500/12,70	
F		.230/5,84	O	.050/1,27	
G	.003/0,08	.006/0,15	P		.170/4,32
H	.118/3,00	.131/3,33	Q	.062/1,58	
I	.063/1,60				