ADVANCED POWER TECHNOLOGY RF®

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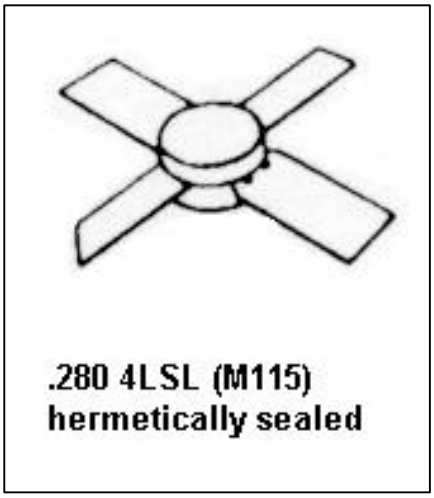
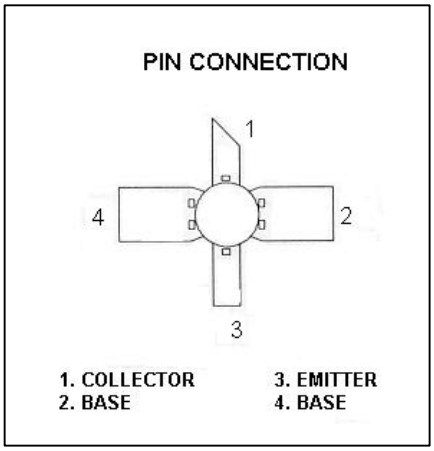
MSC1015MP

RF AND MICROWAVE TRANSISTORS AVIONICS APPLICATIONS



Features

- **DESIGNED FOR HIGH POWER PULSED IFF, DME, TACAN APPLICATIONS**
- **20 W (typ.) IFF 1030 – 1090 MHz**
- **15 W (min.) DME 1025 – 1150 MHz**
- **15 W (typ.) TACAN 960 –1215 MHz**
- **REFRACTORY GOLD METALLIZATION**
- **EMITTER BALLASTING AND LOW THERMAL RESISTANCE FOR RELIABILITY AND RUGGEDNESS**
- **20:1 LOAD VSWR CAPABILITY AT SPECIFIED OPERATING CONDITIONS**
- **INPUT MATCHED, COMMON BASE CONFIGURATION**



DESCRIPTION:

The MSC1015MP is a gold-metallized, epitaxial, silicon NPN power transistor designed for applications requiring high peak power and low duty cycles, such as IFF, DME, and TACAN. It is packaged in the .280" input-matched stripline package, resulting in improved broadband performance and low thermal resistance.

ABSOLUTE MAXIMUM RATINGS (Tcase = 25°C)

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage	65	V
V_{CES}	Collector-Emitter Voltage	65	V
V_{EBO}	Emitter-Base Voltage	3.5	V
I_C	Device Current	1.5	A
P_{DISS}	Power Dissipation	87.5	W
T_J	Junction Temperature	+ 200	°C
T_{STG}	Storage Temperature	–65 to +150	°C

THERMAL DATA

$R_{TH(j-c)}$	Junction-Case Thermal Resistance	2	°C/W

ELECTRICAL SPECIFICATIONS (Tcase = 25°C)

STATIC

Symbol	Test Conditions		Value			Units
			Min.	Typ.	Max.	
BV_{CBO}	I_C = 10 mA	I_E = 0 mA	65			V
BV_{CES}	I_C = 25 mA	V_{BE} = 0 V	65			V
BV_{EBO}	I_E = 1 mA	I_C = 0 mA	3.5			V
I_{CES}	V_{CE} = 50 V	I_E = 0 mA			2	
h_{FE}	V_{CE} = 5 V	I_C = .1 A	10		200	

DYNAMIC

Symbol	Test Conditions			Value			Units
				Min.	Typ.	Max.	
P_{OUT}	f = 1025 – 1150 MHz	P_{IN} = 1.5 W	V_{CE} = 50 V	15			W
G_P	f = 1025 – 1150 MHz	P_{IN} = 1.5 W	V_{CE} = 50 V	10			dB
çC	f = 1025 – 1150 MHz	P_{IN} = 1.5 W	V_{CE} = 50 V	30			%

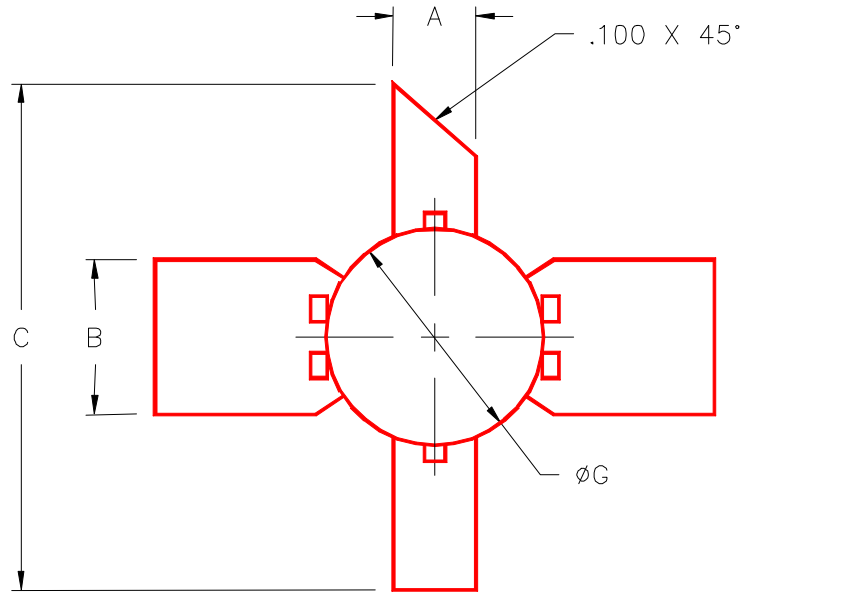
Note: Pulse width = 10µSec
Duty Cycle = 1%

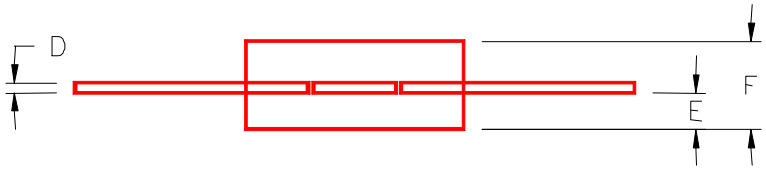
IMPEDANCE DATA

Freq. (MHz)	Z_{IN} (Ω)	Z_{CL} (Ω)
960	2.5 + j 12.5	17.0 + j 15.5
1030	3.5 + j 12.5	17.0 + j 14.5
1090	3.0 + j 13.5	19.5 + j 12.5
1150	3.5 + j 14.0	18.0 + j 12.0
1215	5.0 + j 17.0	16.0 + j 12.0

PACKAGE MECHANICAL DATA

PACKAGE STYLE M115





	MINIMUM INCHES/MM	MAXIMUM INCHES/MM		MINIMUM INCHES/MM	MAXIMUM INCHES/MM
A	.095/2,41	.105/2,67			
B	.195/4,95	.205/5,21			
C	1.000/25,40				
D	.004/0,10	.007/0,18			
E	.050/1,27	.065/1,65			
F	.120/3,05	.135/3,43			
G	.275/6,99	.285/7,21			