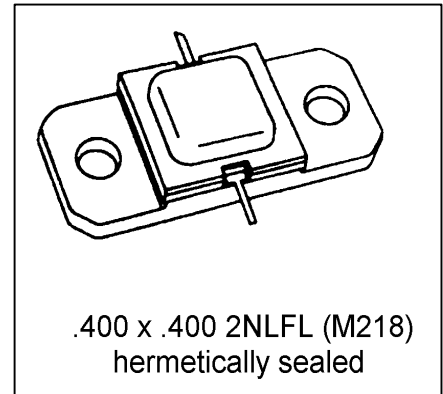


MSC1300M

**RF & MICROWAVE TRANSISTORS
AVIONICS APPLICATIONS**

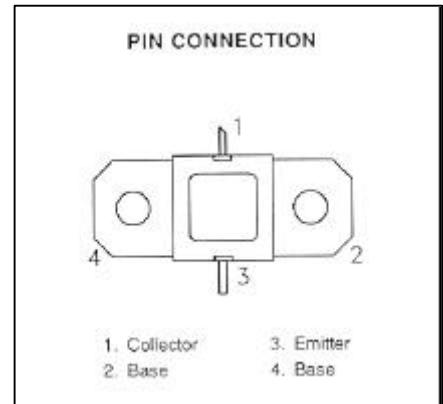
Features

- 1090 MHz
- COMMON BASE
- INTERNAL INPUT / OUTPUT MATCHING
- GOLD METALLIZATION
- CLASS C OPERATION
- POUT = 300 W MIN. WITH 6.3 dB GAIN
- RUGGEDIZED VSWR 20:1
- LOW THERMAL RESISTANCE
- METAL / CERAMIC HERMETIC PACKAGE



DESCRIPTION:

THE MS1300M IS A SILICON NPN BIPOLAR DEVICE SPECIFICALLY DESIGNED FOR IFF AVOICIS APPLICATIONS AT 1090 MHz. THE MS1300M IS DESIGNED TO WITHSTAND A 20:1 VSWR AT ALL PHASE ANGLES UNDER FULL LOAD CONDITIONS. GOLD METALLIZATION AND EMITTER BALLASTING ASSURE HIGH RELIABILITY UNDER CLASS C AMPLIFIER OPERATION.



ABSOLUTE MAXIMUM RATINGS (Tcase = 25°C)

Symbol	Parameter	Value	Unit
V _{CC}	Collector-Supply Voltage ⁸	55	V
I _C	Device Current [*]	18.8	A
P _{DISS}	Power Dissipation [*]	625	W
T _J	Junction Temperature (Pulsed RF Operation)	+250	°C
T _{STG}	Storage Temperature	-65 to +150	°C

Thermal Data

R _{TH(J-C)}	Junction-case Thermal Resistance [*]	0.20	°C/W
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^{*}Applies only to rated RF Amplifier Operation

ELECTRICAL SPECIFICATIONS (T_{case} = 25°C)
STATIC

Symbol	Test Conditions		Value			Unit
			Min.	Typ.	Max.	
BV_{CBO}	I_C = 10mA	I_E = 0mA	65	---	---	V
BV_{EBO}	I_E = 20mA	I_C = 0mA	3.5	---	---	V
BV_{CER}	I_E = 20mA	R_{BE} = 10Ω	553.5	---	---	V
I_{CES}	V_{CE} = 50 V		-----	---	25	mA
h_{FE}	V_{CE} = 5 V	I_C = 100mA	15	---	120	---

DYNAMIC

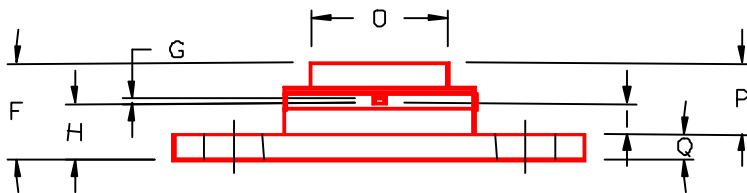
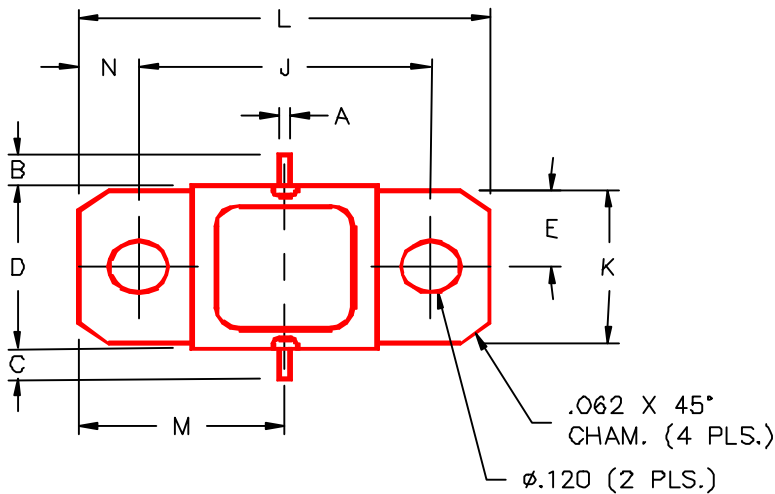
Symbol	Test Conditions			Value			Unit
				Min.	Typ.	Max.	
P_{OUT}	f = 1090 MHz	P_{IN} = 70W	V_{CC} = 50V	300	350	---	W
η_C	f = 1090 MHz	P_{IN} = 70W	V_{CC} = 50V	35	42	---	%
G_P	f = 1090 MHz	V_{CE} = 20V	I_C = 220 mA	6.3	6.7	---	dB

Pulse width = 10 μs

Duty cycle = 1 %

PACKAGE MECHANICAL DATA

PACKAGE STYLE M218



	MINIMUM INCHES/MM	MAXIMUM INCHES/MM		MINIMUM INCHES/MM	MAXIMUM INCHES/MM
A	.025/0,64		J	.650/16,51	
B	.100/2,54		K	.386/9,80	
C	.100/2,54		L	.900/22,86	
D	.395/10,03	.407/10,34	M	.450/11,43	
E	.193/4,90		N	.125/3,18	
F		.230/5,84	O	.405/10,29	
G	.004/0,10	.007/0,18	P		.170/4,32
H	.118/3,00	.131/3,33	Q	.062/1,58	
I	.063/1,60				