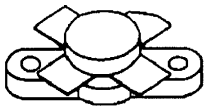
ADVANCED POWER TECHNOLOGY RF®
140 COMMERCE DRIVE
MONTGOMERYVILLE, PA
18936-1013
PHONE: (215) 631-9840
FAX: (215) 631-9855

MS1078

RF & MICROWAVE TRANSISTORS
HF SSB APPLICATIONS

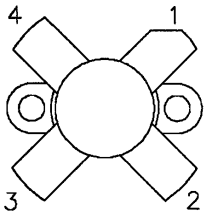


.500 4LFL (M174)
epoxy sealed

Features

- Optimized for SSB
- 30 MHz
- 28 Volts
- IMD –30dB
- Common Emitter
- Gold Metallization
- P_{OUT} = 130 W PEP
- G_P = 12 dB Gain

PIN CONNECTION



1. Collector
2. Emitter
3. Base
4. Emitter

DESCRIPTION:

The MS1078 is a Class AB 28V epitaxial silicon NPN planar transistor designed primarily for SSB communications. The MS1078 utilizes emitter ballasting for superior ruggedness and reliability under extreme operating conditions.

ABSOLUTE MAXIMUM RATINGS (Tcase = 25°C)

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage	70	V
V_{CEO}	Collector-Emitter Voltage	35	V
V_{EBO}	Emitter-Base Voltage	4.0	V
I_C	Device Current	12	A
P_{DISS}	Power Dissipation	175	W
T_J	Junction Temperature	+200	°C
T_{STG}	Storage Temperature	-65 to +150	°C

Thermal Data

$R_{TH(J-C)}$	Thermal Resistance Junction-case	1.0	°C/W

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ELECTRICAL SPECIFICATIONS (Tcase = 25° C)

STATIC

Symbol	Test Conditions	Value			Unit
		Min.	Typ.	Max.	
BV_{CES}	I_C = 50 mA V_{BE} = 0 V	110			V
BV_{CEO}	I_C = 100 mA I_B = 0 mA	55			V
BV_{EBO}	I_E = 20 mA I_C = 0 mA	4.0			V
I_{CES}	V_{CE} =35 V I_E = 0 mA			20	mA
h_{FE}	V_{CE} = 5 V I_C = 7 A	18		50	

DYNAMIC

Symbol	Test Conditions	Value			Unit
		Min.	Typ.	Max.	
P_{OUT}	f = 30 MHz V_{CE} = 28 V I_{CQ} = 150 mA	130			W
G_P	P_{OUT} = 130 W PEP V_{CE} = 28 V I_{CQ} = 150 mA	12			dB
IMD *	P_{OUT} = 130 W PEP V_{CE} = 28 V I_{CQ} = 150 mA			-30	dBc
η_C	P_{OUT} = 130 W PEP V_{CE} = 28 V I_{CQ} = 150 mA	37			%
C_{OB}	f = 1 MHz V_{CB} = 28 V			250	pF

Note: * f_1 = 30.00 MHz, f_2 = 30.01 MHz

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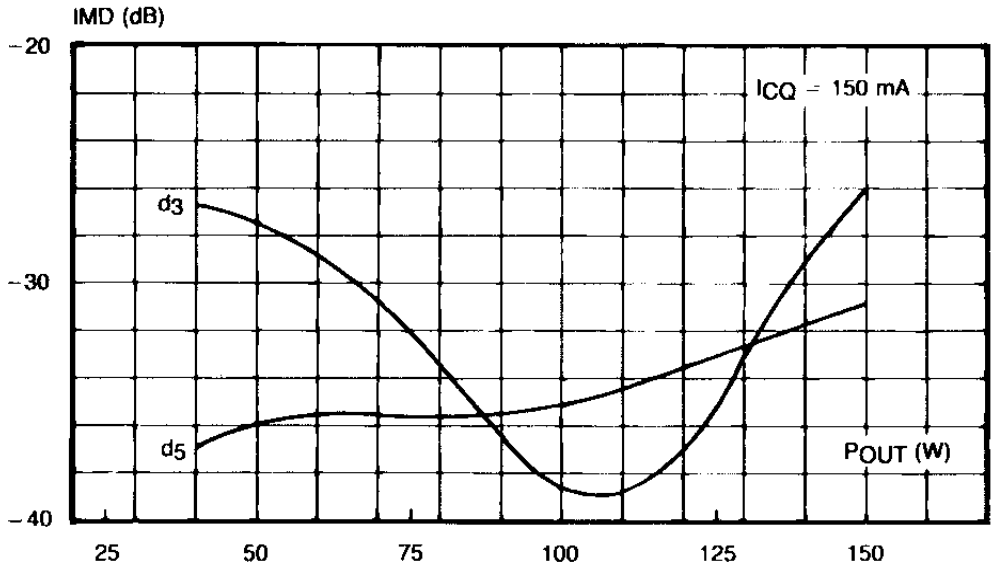
TYPICAL PERFORMANCE



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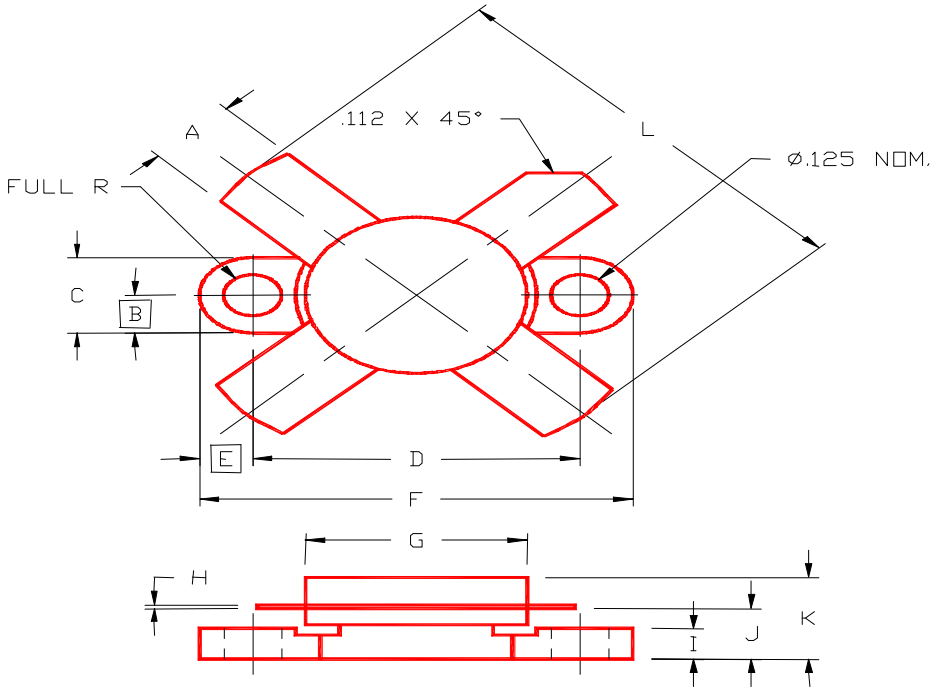
PACKAGE MECHANICAL DATA

PACKAGE STYLE M174



	MINIMUM INCHES/MM	MAXIMUM INCHES/MM		MINIMUM INCHES/MM	MAXIMUM INCHES/MM
A	.220/5,59	.230/5,84	I	.090/2,29	.110/2,79
B	.125/3,18		J	.160/4,06	.175/4,45
C	.245/6,22	.255/6,48	K		.280/7,11
D	.720/18,28	.730/18,54	L		1.050/26,67
E	.125/3,18				
F	.970/24,64	.980/24,89			
G	.495/12,57	.505/12,83			
H	.003/0,08	.007/0,18			