



MS1078

RF & MICROWAVE TRANSISTORS

PRODUCT PREVIEW

DESCRIPTION

The MS1078 is a Class AB epitaxial silicon NPN planar transistor designed primarily for SSB and communications. This device utilizes emitter ballasting to achieve extreme ruggedness under severe operating conditions.

IMPORTANT: For the most current data, consult MICROSEMI's website: <http://www.microsemi.com>

KEY FEATURES

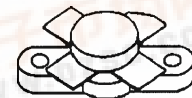
- Optimized for SSB
- 30 MHz
- 28 Volts
- IMD -30dB
- Common Emitter
- Gold Metallization
- $P_{OUT} = 130 \text{ W PEP}$
- $G_P = 12 \text{ dB Gain}$

APPLICATIONS/BENEFITS

- HF SSB Applications

ABSOLUTE MAXIMUM RATINGS ($T_{CASE} = 25^{\circ}\text{C}$)

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	$^{\circ}\text{C}$
T_{STG}	Storage Temperature	-65 to +150	$^{\circ}\text{C}$

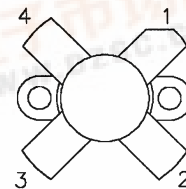


.500 4LFL (M174)
epoxy sealed

THERMAL DATA

$R_{TH(j-c)}$	Junction-Case Thermal Resistance	1.0	$^{\circ}\text{C/W}$
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PIN CONNECTION



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



STATIC ELECTRICAL SPECIFICATIONS (TCASE = 25°C)

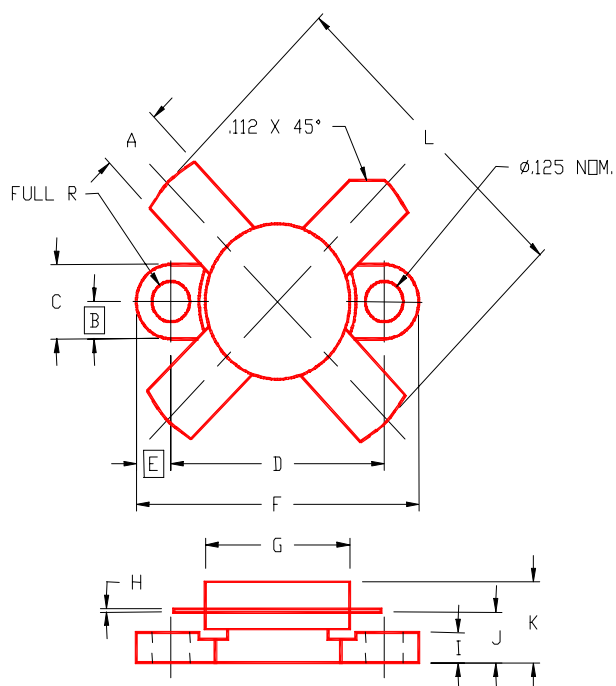
Symbol	Test Conditions	MS1078			Units
		Min.	Typ.	Max.	
BV_{CES}	I_C = 50 mA V_{BE} = 0 V	110	—	—	V
BV_{CEO}	I_C = 100 mA I_B = 0 mA	55	—	—	V
BV_{EBO}	I_E = 20 mA I_C = 0 mA	4.0	—	—	V
I_{CES}	V_{CE} = 35 V I_E = 0 mA	—	—	20	mA
h_{FE}	V_{CE} = 5 V I_C = 7 A	18	—	50	—

DYNAMIC ELECTRICAL SPECIFICATIONS (TCASE = 25°C)

Symbol	Test Conditions	MS1078			Units
		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

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			



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www.Microsemi.com

NOTES