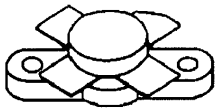
ADVANCED POWER TECHNOLOGY RF®

140 COMMERCE DRIVE
MONTGOMERYVILLE, PA
18936-1013
PHONE: (215) 631-9840
FAX: (215) 631-9855

MS1007

RF & MICROWAVE TRANSISTORS
HF SSB APPLICATIONS



.500 4LFL (M174)
epoxy sealed

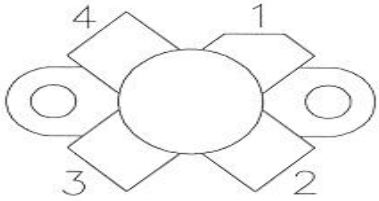
Features

- 30 MHz
- 50 VOLTS
- P_{OUT} = 150 WATTS
- G_P = 14 dB MINIMUM
- COMMON EMITTER CONFIGURATION

DESCRIPTION:

The MS1007 is a 50V epitaxial silicon NPN planar transistor designed primarily for SSB communications. This device utilizes emitter ballasting to achieve extreme ruggedness under severe operating conditions.

PIN CONNECTION



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

ABSOLUTE MAXIMUM RATINGS (Tcase = 25°C)

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage	110	V
V_{CEO}	Collector-Emitter Voltage	55	V
V_{EBO}	Emitter-Base Voltage	4.0	V
I_C	Device Current	10	A
P_{DISS}	Power Dissipation	233	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	0.75	°C/W

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ELECTRICAL SPECIFICATIONS (Tcase = 25°C)

STATIC

Symbol	Test Conditions		Value			Unit
			Min.	Typ.	Max.	
BV_{CBO}	I_C = 100mA	I_E = 0mA	110	---	---	V
BV_{CES}	I_C = 100mA	V_{BE} = 0V	110	---	---	V
BV_{CEO}	I_C = 100mA	I_B = 0mA	55	---	---	V
BV_{EBO}	I_E = 10mA	I_C = 0mA	4.0	---	---	V
I_{CEO}	V_{CE} = 30V	I_E = 0 mA	---	---	5	mA
I_{CES}	V_{CE} = 60V	I_E = 0mA	---	---	5	mA
h_{FE}	V_{CE} = 6V	I_C = 1.4A	18	---	43.5	---

DYNAMIC

Symbol	Test Conditions			Value			Unit
				Min.	Typ.	Max.	
P_{OUT}	f = 30 MHz	V_{CE} = 50V	I_{CQ} = 100mA	150	---	---	WPEP
G_P	P_{OUT} = 150WPEP	V_{CE} = 50V	I_{CQ} = 100mA	14	---	---	dB
IMD	P_{OUT} = 150WPEP	V_{CE} = 50V	I_{CQ} = 100mA	---		-30	dBc
η_C	P_{OUT} = 150WPEP	V_{CE} = 50V	I_{CQ} = 100mA	37	---	---	%
C_{OB}	f = 1 MHz	V_{CB} = 50 V		---	---	220	pf
Conditions	f1 = 30.000MHz	f2 = 30.001MHz					

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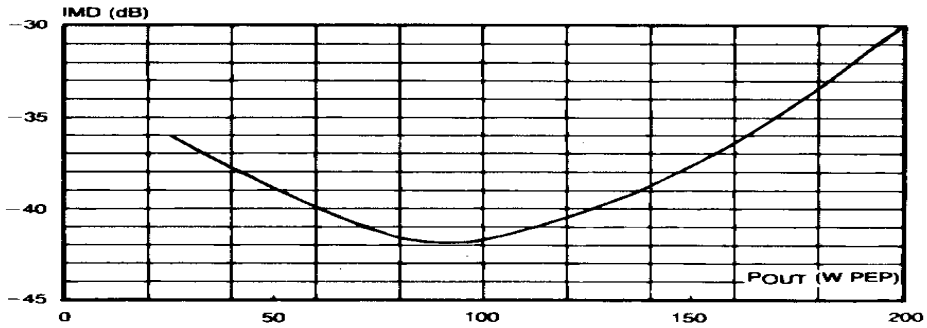
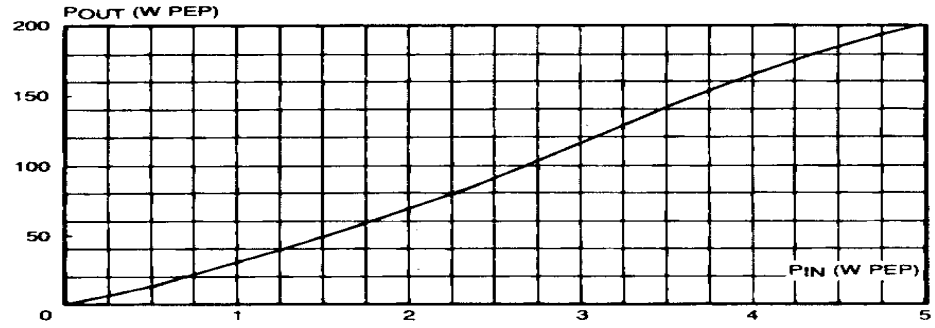
TYPICAL PERFORMANCE

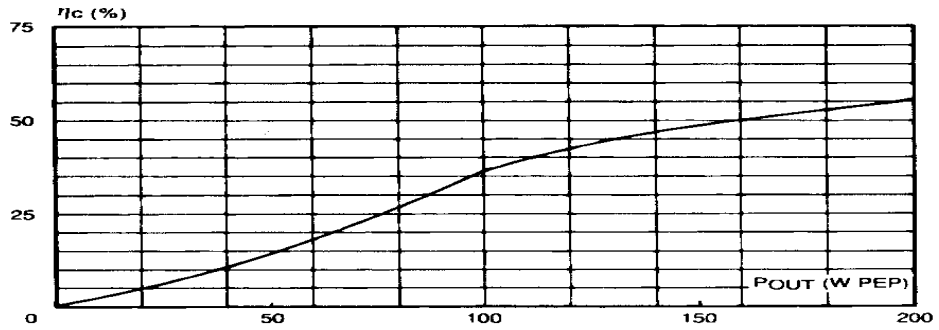
INTERMODULATION DISTORTION vs POWER OUTPUT PEP



POWER OUTPUT PEP vs POWER INPUT



COLLECTOR EFFICIENCY vs POWER OUTPUT PEP



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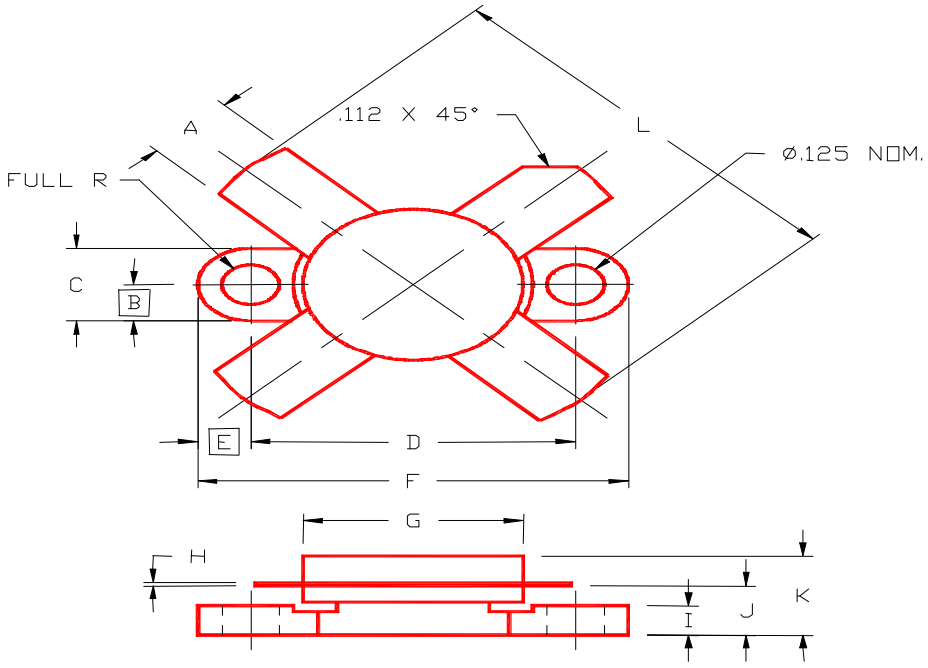
PACKAGE MECHANICAL DATA

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			