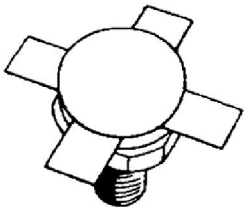
ADVANCED POWER TECHNOLOGY RF®

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

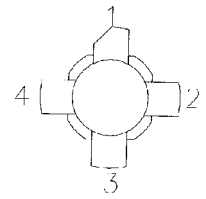
MS1008

RF & MICROWAVE TRANSISTORS
HF SSB APPLICATIONS



.550 4L STUD (M164)
epoxy sealed

PIN CONNECTION



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

Features

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

DESCRIPTION:

The MS1008 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.

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

$R_{TH(J-C)}$	Junction-Case Thermal Resistance	0.75	°C/W

Rev A 11/2005

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

MS1008

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	15	---	50	---
h_{FE}, MS1008A	V_{CE} = 6V	I_C = 1.4A	20		30	

DYNAMIC

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

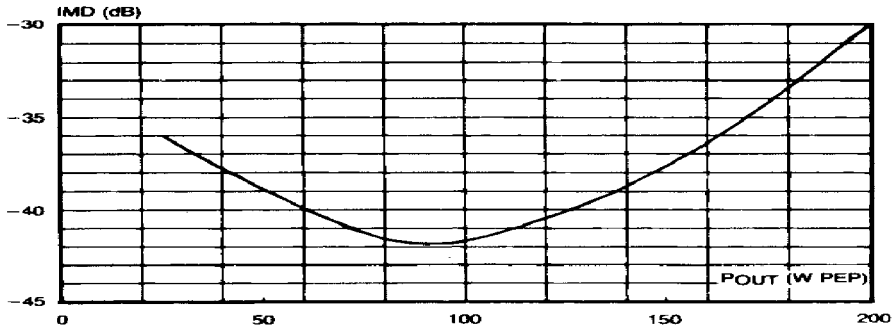
Conditions: f_1 = 30.000MHz f_2 = 30.001MHz

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

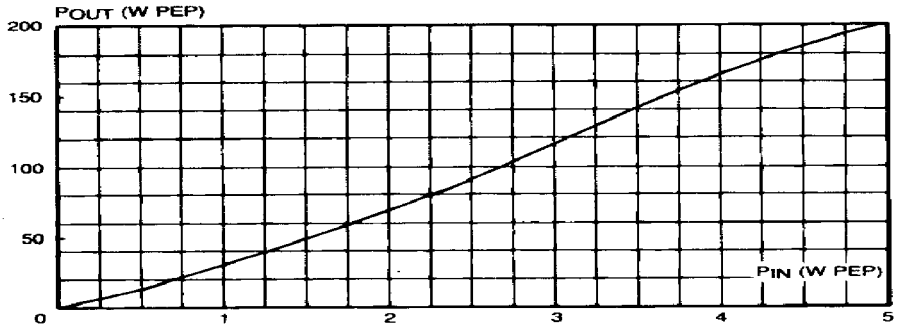
MS1008

TYPICAL PERFORMANCE

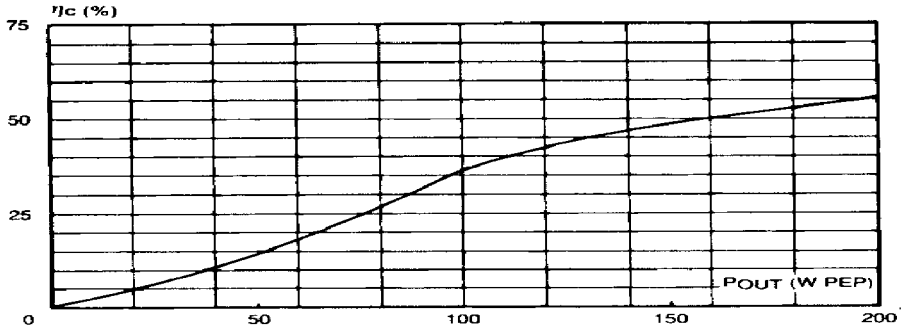
INTERMODULATION DISTORTION vs POWER OUTPUT PEP



POWER OUTPUT PEP vs POWER INPUT



COLLECTOR EFFICIENCY vs POWER OUTPUT PEP



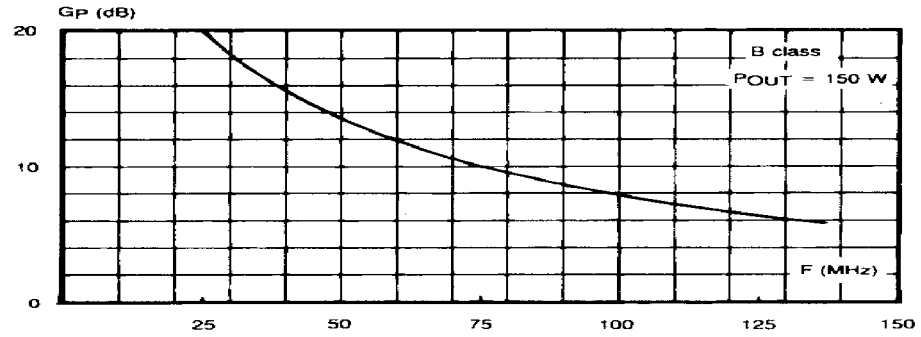
ADVANCED POWER TECHNOLOGY RF®

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

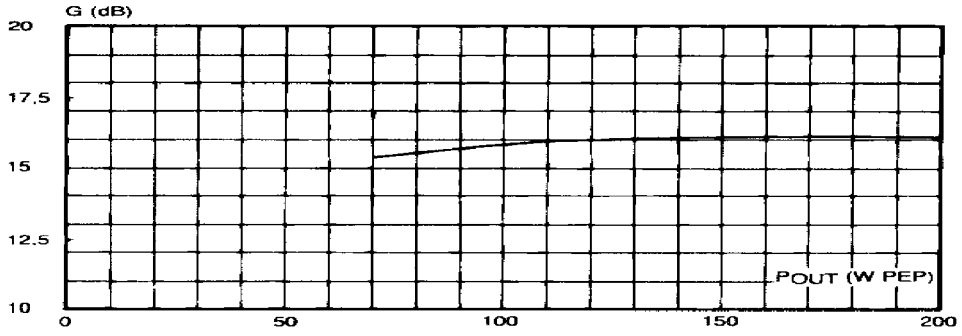
MS1008

TYPICAL PERFORMANCE

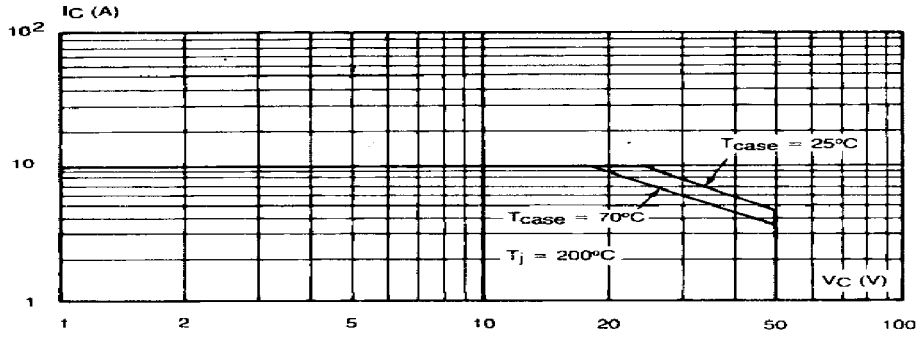
POWER GAIN vs FREQUENCY



POWER GAIN vs POWER OUTPUT PEP



SAFE OPERATING AREA

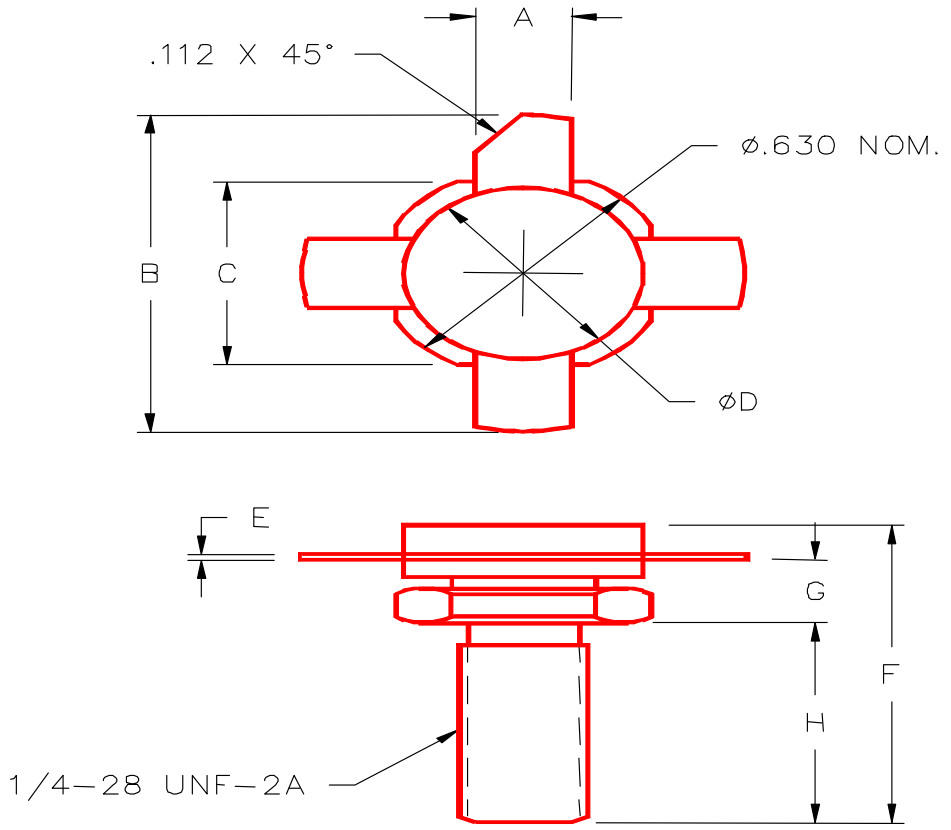


ADVANCED POWER TECHNOLOGY RF®
140 COMMERCE DRIVE
MONTGOMERYVILLE, PA
18936-1013
PHONE: (215) 631-9840
FAX: (215) 631-9855

MS1008

PACKAGE MECHANICAL DATA

PACKAGE STYLE M164



	MINIMUM INCHES/MM	MAXIMUM INCHES/MM			MINIMUM INCHES/MM	MAXIMUM INCHES/MM
A	.220/5,59	.230/5,84				
B		1.050/26,67				
C	.545/13,84	.555/14,10				
D	.495/12,57	.505/12,83				
E	.003/0,08	.007/0,18				
F		.810/20,57				
G	.185/4,70	.198/5,03				
H	.497/12,62	.530/13,46				