RF Products
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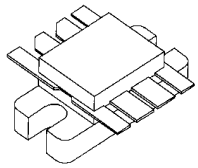
MS1278

RF & MICROWAVE TRANSISTORS
TV/LINEAR APPLICATIONS



.400 x .425 8LFL (M168)

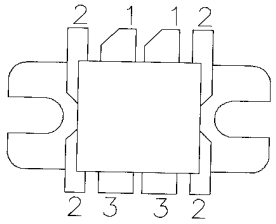
Features

- 170 - 230 MHz
- 28 VOLTS
- P_{OUT} = 100 WATTS
- G_P = 11.0 dB GAIN MINIMUM
- GOLD METALLIZATION
- COMMON EMITTER CONFIGURATION

DESCRIPTION:

The MS1278 is a gold metallized epitaxial silicon NPN planar transistor using diffused emitter ballast resistors for high linearity Class AB operation in VHF and Band III television transmitters and transposers.

PIN CONNECTION



1. Collector
2. Emitter
3. Base

ABSOLUTE MAXIMUM RATINGS (Tcase = 25°C)

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage	65	V
V_{CEO}	Collector-Emitter Voltage	33	V
V_{EBO}	Emitter-Base Voltage	3.5	V
I_C	Device Current	16	A
P_{DISS}	Power Dissipation	150	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	1.2	°C/W

ELECTRICAL SPECIFICATIONS (Tcase = 25°C)

STATIC

Symbol	Test Conditions		Value			
			Min.	Typ.	Max.	Unit
BV_{CBO}	I_C = 50mA	I_E = 0mA	65	---	---	V
BV_{CER}	I_C = 50mA	R_{BE} = 15Ω	60	---	---	V
BV_{CEO}	I_C = 50mA	I_B = 0mA	33	---	---	V
BV_{EBO}	I_E = 5mA	I_C = 0mA	3.5	---	---	V
HFE	V_{CE} = 5V	I_C = 500mA	20	---	150	---

DYNAMIC

Symbol	Test Conditions			Value			
				Min.	Typ.	Max.	Unit
P_{OUT}	f = 225 MHz	V_{CE} = 28 W	I_C = 2 x 100 mA	100	---	---	W
G_P	f = 225 MHz	V_{CE} = 28 W	I_C = 2 x 100 mA	11	---	---	dB
η_C	f = 225 MHz	V_{CE} = 28 W	I_C = 2 x 100 mA	70	---	---	%
C_{OB}	f = 1 MHz	V_{CB} = 28 V		---	---	75	pf

Note: * dB compression

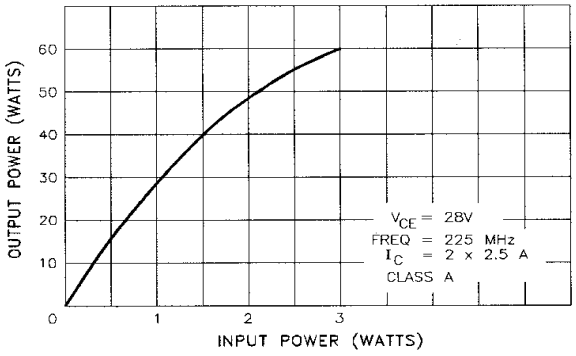
IMPEDANCE DATA

FREQ	$Z_{IN}(\Omega)$	$Z_{CL}(\Omega)$
170 MHz	1.3 + j0.6	9.5 - j10.0
200 MHz	1.0 + j1.0	9.0 - j8.0
230 MHz	0.9 + j1.8	6.3 - j6.5

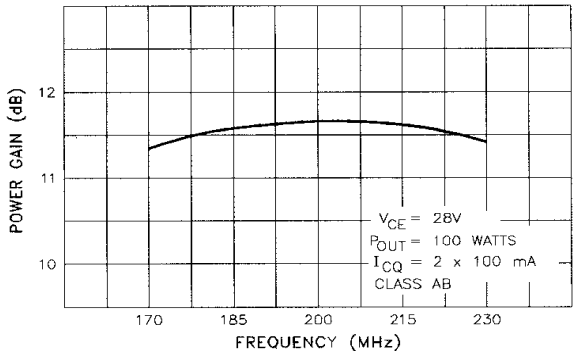
P_{OUT} = 100W
V_{CE} = 28V
I_{CQ} = 2 x 100mA

TYPICAL PERFORMANCE

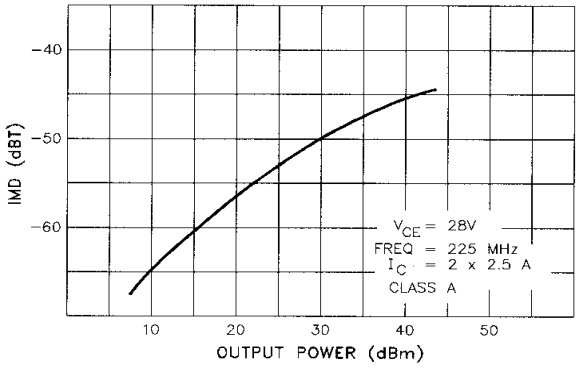
POWER OUTPUT vs POWER INPUT



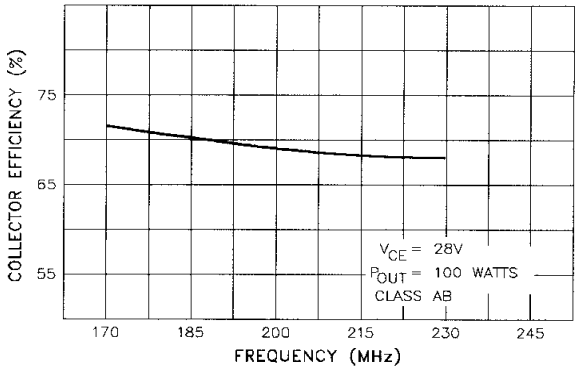
BROADBAND POWER GAIN vs FREQUENCY



INTERMODULATION DISTORTION vs POWER OUTPUT

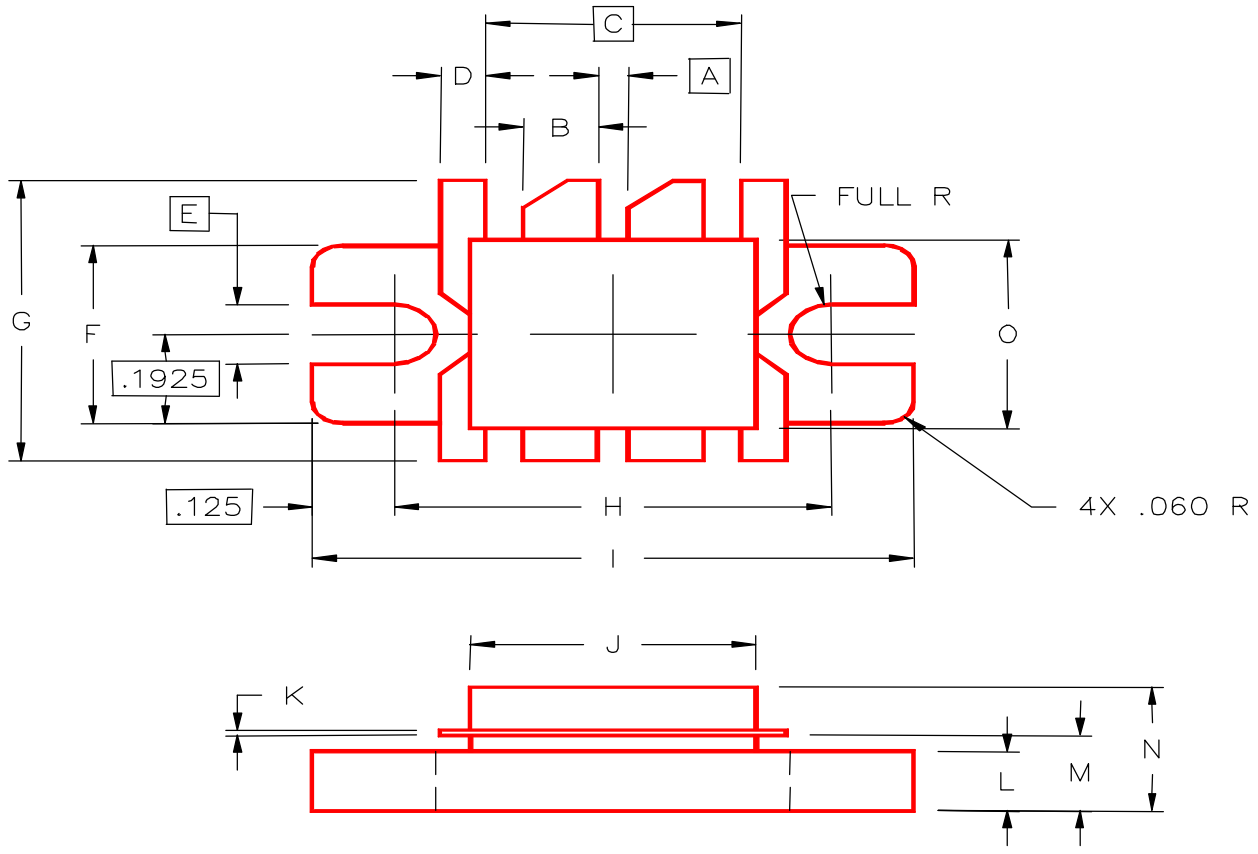


COLLECTOR EFFICIENCY vs FREQUENCY



PACKAGE MECHANICAL DATA

PACKAGE STYLE M168



	MINIMUM INCHES/MM	MAXIMUM INCHES/MM		MINIMUM INCHES/MM	MAXIMUM INCHES/MM
A	.030/0,76		I	.895/22,73	.905/22,99
B	.115/2,92	.125/3,18	J	.420/10,67	.430/10,92
C	.360/9,14		K	.003/0,08	.007/0,18
D	.065/1,65	.075/1,91	L	.120/3,05	.130/3,30
E	.130/3,30		M	.159/4,04	.175/4,45
F	.380/9,65	.390/9,91	N		.280/7,11
G	.735/18,67	.765/19,43	O	.395/10,03	.405/10,29
H	.645/16,38	.655/16,64			