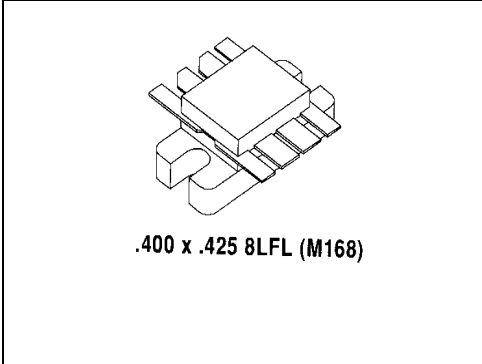


**MS1278**

**RF & MICROWAVE TRANSISTORS  
TV/LINEAR APPLICATIONS**

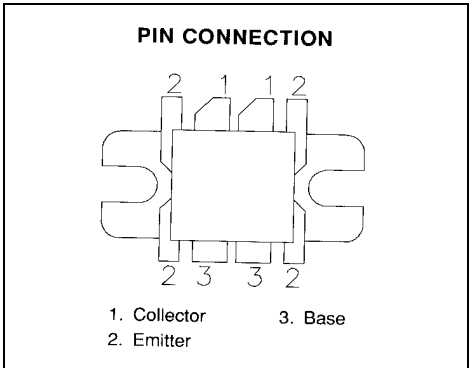
**Features**

- 170 - 230 MHz
- 28 VOLTS
- P<sub>OUT</sub> = 100 WATTS
- G<sub>P</sub> = 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.



**ABSOLUTE MAXIMUM RATINGS (T<sub>case</sub> = 25°C)**

Symbol	Parameter	Value	Unit
V <sub>CBO</sub>	Collector-Base Voltage	65	V
V <sub>CEO</sub>	Collector-Emitter Voltage	33	V
V <sub>EBO</sub>	Emitter-Base Voltage	3.5	V
I <sub>C</sub>	Device Current	16	A
P <sub>DISS</sub>	Power Dissipation	150	W
T <sub>J</sub>	Junction Temperature	+200	°C
T <sub>STG</sub>	Storage Temperature	-65 to +150	°C

**Thermal Data**

R <sub>TH(J-C)</sub>	Thermal Resistance Junction-case	1.2	°C/W
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## ELECTRICAL SPECIFICATIONS (T<sub>case</sub> = 25°C)

### STATIC

Symbol	Test Conditions		Value			Unit
			Min.	Typ.	Max.	
<b>BV<sub>CBO</sub></b>	<b>I<sub>C</sub> = 50mA</b>	<b>I<sub>E</sub> = 0mA</b>	<b>65</b>	---	---	<b>V</b>
<b>BV<sub>CER</sub></b>	<b>I<sub>C</sub> = 50mA</b>	<b>R<sub>BE</sub> = 15Ω</b>	<b>60</b>	---	---	<b>V</b>
<b>BV<sub>CEO</sub></b>	<b>I<sub>C</sub> = 50mA</b>	<b>I<sub>B</sub> = 0mA</b>	<b>33</b>	---	---	<b>V</b>
<b>BV<sub>EBO</sub></b>	<b>I<sub>E</sub> = 5mA</b>	<b>I<sub>C</sub> = 0mA</b>	<b>3.5</b>	---	---	<b>V</b>
<b>HFE</b>	<b>V<sub>CE</sub> = 5V</b>	<b>I<sub>C</sub> = 500mA</b>	<b>20</b>	---	<b>150</b>	---

### DYNAMIC

Symbol	Test Conditions			Value			Unit
				Min.	Typ.	Max.	
<b>P<sub>OUT</sub></b>	<b>f = 225 MHz</b>	<b>V<sub>CE</sub> = 28 W</b>	<b>I<sub>C</sub> = 2 x 100 mA</b>	<b>100</b>	---	---	<b>W</b>
<b>G<sub>P</sub></b>	<b>f = 225 MHz</b>	<b>V<sub>CE</sub> = 28 W</b>	<b>I<sub>C</sub> = 2 x 100 mA</b>	<b>11</b>	---	---	<b>dB</b>
<b>η<sub>C</sub></b>	<b>f = 225 MHz</b>	<b>V<sub>CE</sub> = 28 W</b>	<b>I<sub>C</sub> = 2 x 100 mA</b>	<b>70</b>	---	---	<b>%</b>
<b>C<sub>OB</sub></b>	<b>f = 1 MHz</b>	<b>V<sub>CB</sub> = 28 V</b>		---	---	<b>75</b>	<b>pf</b>

Note: \* dB compression

### IMPEDANCE DATA

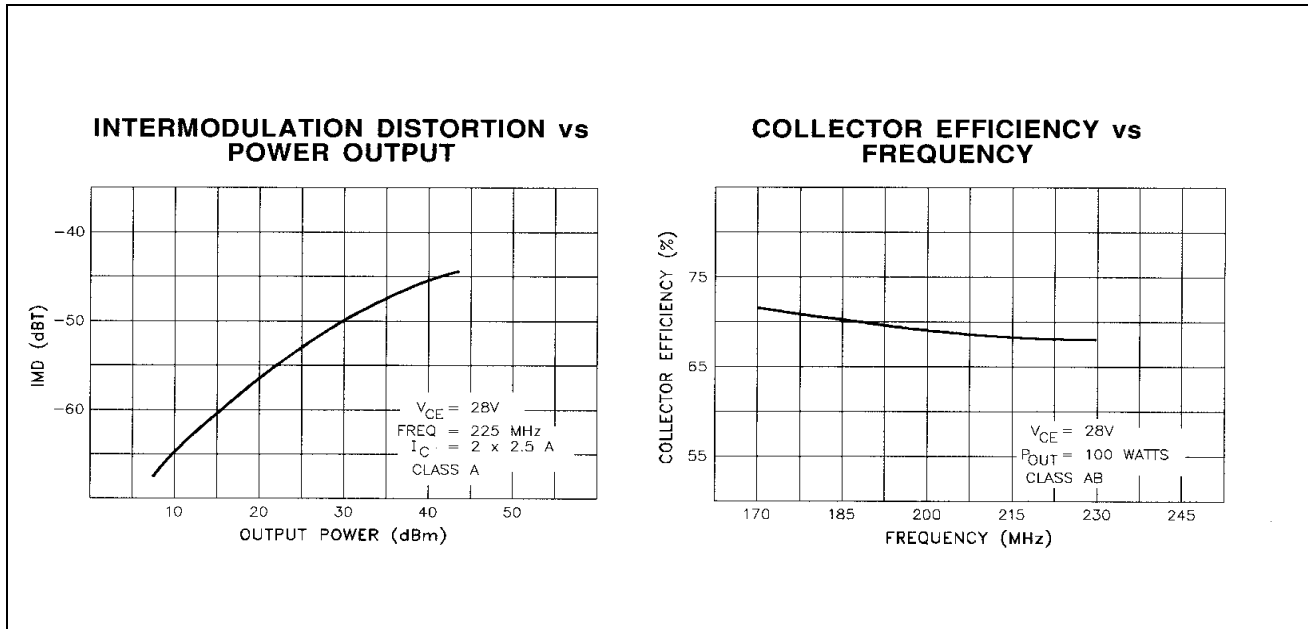
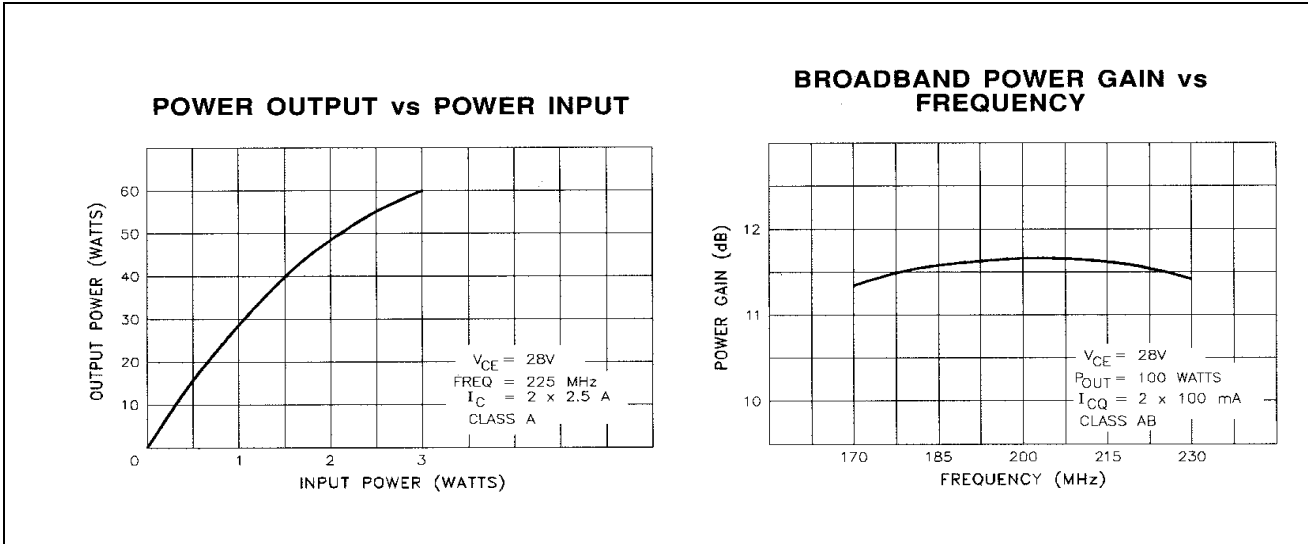
FREQ	Z <sub>IN</sub> (Ω)	Z <sub>CL</sub> (Ω)
<b>170 MHz</b>	<b>1.3 + j0.6</b>	<b>9.5 - j10.0</b>
<b>200 MHz</b>	<b>1.0 + j1.0</b>	<b>9.0 - j8.0</b>
<b>230 MHz</b>	<b>0.9 + j1.8</b>	<b>6.3 - j6.5</b>

**P<sub>OUT</sub> = 100W**

**V<sub>CE</sub> = 28V**

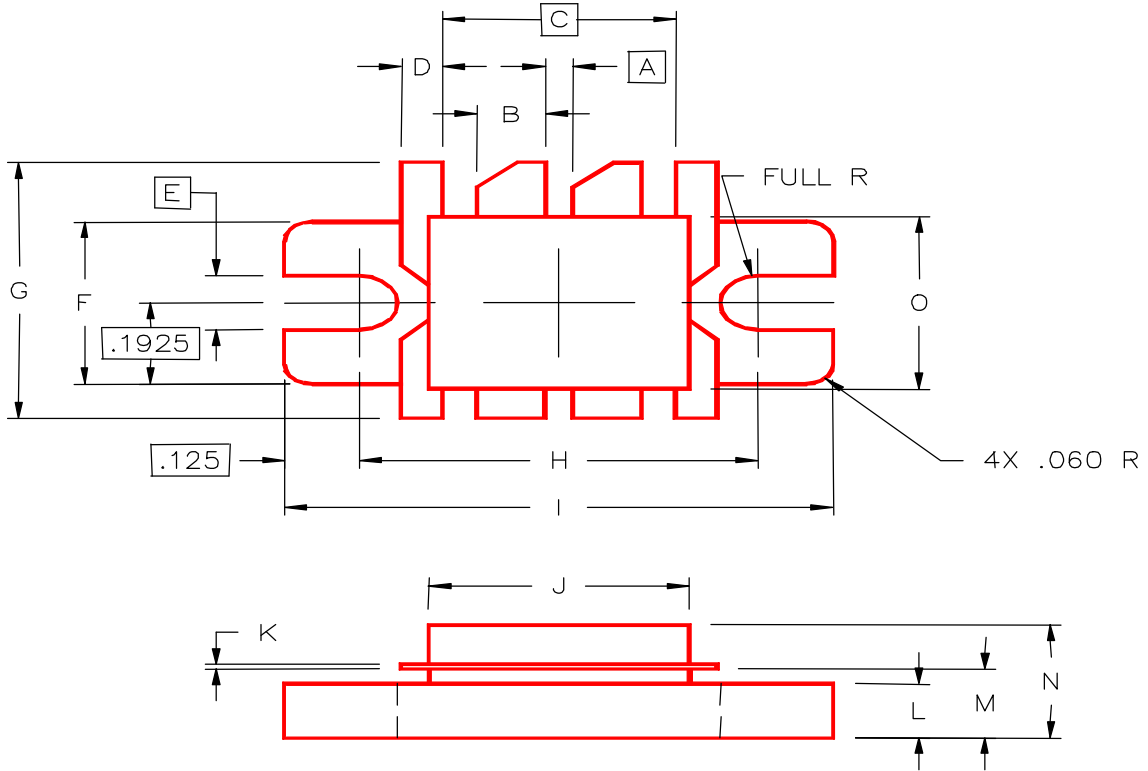
**I<sub>CQ</sub> = 2 x 100mA**

**TYPICAL PERFORMANCE**



**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			