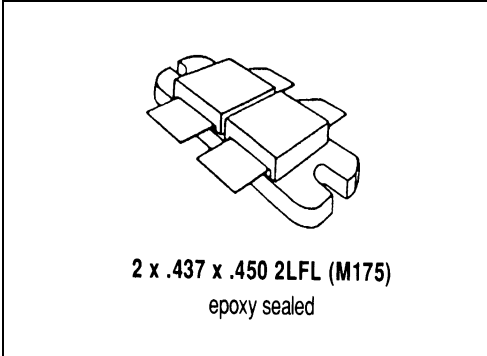


**MS1533**

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

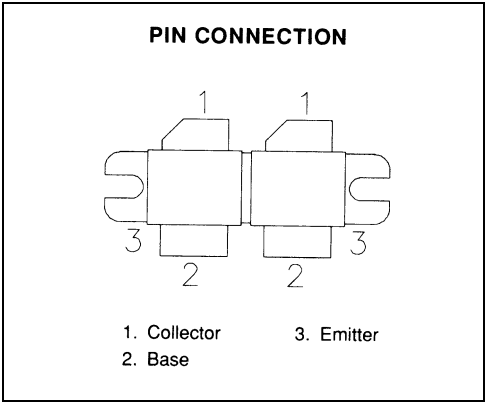
**Features**

- 470 - 860 MHz
- 28 VOLTS
- INTERNAL INPUT MATCHING
- CLASS AB LINEAR
- $P_{OUT} = 150$  WATTS
- $G_P = 6.5$  dB MINIMUM
- COMMON EMITTER CONFIGURATION



**DESCRIPTION:**

The MS1533 is a gold metallized epitaxial silicon NPN planar transistor designed for high linearity Class AB operation in UHF and Band IV, V television transmitters and transposers.



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

Symbol	Parameter	Value	Unit
V <sub>CBO</sub>	Collector-Base Voltage	60	V
V <sub>EBO</sub>	Emitter-Base Voltage	3.0	V
V <sub>CEO</sub>	Collector-Emitter Voltage	30	V
P <sub>DISS</sub>	Power Dissipation	310	W
I <sub>C</sub>	Device Current	25	A
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	.55	°C/W
----------------------	----------------------------------	-----	------

**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> = 100 mA</b>	<b>I<sub>E</sub> = 0mA</b>	<b>60</b>	<b>---</b>	<b>---</b>	<b>V</b>
<b>BV<sub>CEO</sub></b>	<b>I<sub>C</sub> = 100 mA</b>	<b>I<sub>B</sub> = 0 mA</b>	<b>30</b>	<b>---</b>	<b>---</b>	<b>V</b>
<b>BV<sub>EBO</sub></b>	<b>I<sub>E</sub> = 50 mA</b>	<b>I<sub>C</sub> = 0 mA</b>	<b>3.0</b>	<b>---</b>	<b>---</b>	<b>V</b>
<b>I<sub>CES</sub></b>	<b>V<sub>CE</sub> = 28 V</b>	<b>I<sub>E</sub> = 0 mA</b>	<b>---</b>	<b>---</b>	<b>10</b>	<b>mA</b>
<b>HFE</b>	<b>V<sub>CE</sub> = 5 V</b>	<b>I<sub>C</sub> = 4 A</b>	<b>15</b>	<b>---</b>	<b>70</b>	<b>---</b>

**DYNAMIC**

Symbol	Test Conditions			Value			Unit
				Min.	Typ.	Max.	
<b>P<sub>OUT</sub></b>	<b>f = 860 MHz</b>	<b>P<sub>IN</sub> = 33 W</b>	<b>V<sub>CE</sub> = 28 V</b>	<b>150</b>	<b>---</b>	<b>---</b>	<b>W</b>
<b>G<sub>p</sub></b>	<b>P<sub>OUT</sub> = 150 W</b>	<b>P<sub>IN</sub> = 33 W</b>	<b>V<sub>CE</sub> = 28 V</b>	<b>6.5</b>	<b>---</b>	<b>---</b>	<b>dB</b>
<b>η<sub>c</sub></b>	<b>P<sub>OUT</sub> = 150 W</b>	<b>P<sub>IN</sub> = 33 W</b>	<b>V<sub>CE</sub> = 28 V</b>	<b>45</b>	<b>---</b>	<b>---</b>	<b>%</b>
<b>Cob</b>	<b>f = 1 MHz</b>	<b>P<sub>IN</sub> = 33 W</b>	<b>V<sub>CB</sub> = 28 V</b>	<b>---</b>	<b>---</b>	<b>100</b>	<b>pf</b>

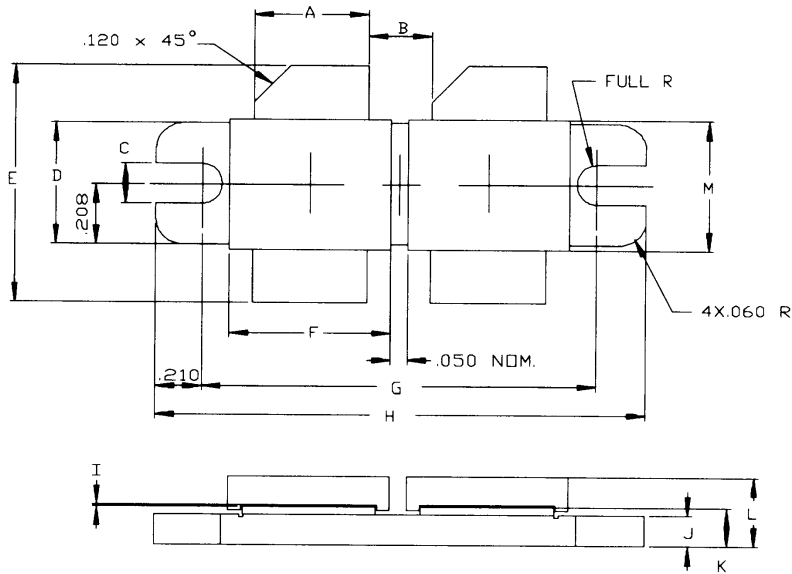
Conditions: **V<sub>CE</sub> = 28 V** **I<sub>CQ</sub> = 2 x 500 mA**

**IMPEDANCE DATA**

FREQ	Z <sub>IN</sub> (Ω)	Z <sub>CL</sub> (Ω)
<b>900 MHz</b>	<b>2.65 + j 0.8</b>	<b>2.4 - j 1.6</b>
<b>860 MHz</b>	<b>3.2 + j 1.6</b>	<b>2.3 - j 0.9</b>
<b>470 MHz</b>	<b>0.3 - j 1.2</b>	<b>1.2 - j 1.3</b>

**P<sub>OUT</sub> = 150 W**  
**V<sub>CE</sub> = 28 V**

**PACKAGE MECHANICAL DATA**



	MINIMUM Inches/mm	MAXIMUM Inches/mm		MINIMUM Inches/mm	MAXIMUM Inches/mm
A	.373/9,47	.385/9,78	K	.115/2,92	.135/3,43
B	.190/4,83		L		.250/6,35
C	.125/3,18		M	.445/11,30	.455/11,56
D	.411/10,44	.421/10,69			
E	.825/20,96	.865/21,97			
F	.525/13,34	.535/13,59			
G	1.255/31,88	1.265/32,13			
H	1.675/42,55	1.685/42,80			
I	.002/0,05	.006/0,15			
J	.095/2,41	.105/2,67			