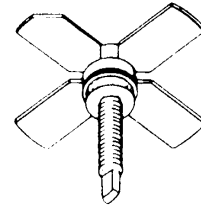


# MS1581

## RF & MICROWAVE TRANSISTORS UHF TV/LINEAR APPLICATIONS

### Features

- 860 MHz
- 25 VOLTS
- $P_{OUT} = 4.0$  WATTS
- $G_P = 7.0$  dB MINIMUM
- GOLD METALLIZATION
- COMMON EMITTER CONFIGURATION

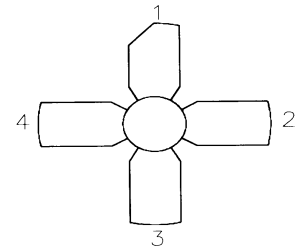


**.280 4L STUD (M122)**  
epoxy sealed

### DESCRIPTION:

The MS1581 is a silicon NPN bipolar transistor specifically designed for high linearity UHF TV driver applications. Gold metallization and emitter ballasting assure high reliability under Class A linear operation.

#### PIN CONNECTION



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

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

Symbol	Parameter	Value	Unit
V <sub>CBO</sub>	Collector-Base Voltage	45	V
V <sub>CEO</sub>	Collector-Emitter Voltage	25	V
V <sub>EBO</sub>	Emitter-Base Voltage	4	V
P <sub>DISS</sub>	Power Dissipation	31.8	W
I <sub>C</sub>	Device Current	1.6	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	5.5	°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> = 10 mA</b>	<b>I<sub>E</sub> = 0 mA</b>	<b>45</b>	---	---	<b>V</b>
<b>BV<sub>CEO</sub></b>	<b>I<sub>C</sub> = 20 mA</b>	<b>I<sub>E</sub> = 0 mA</b>	<b>25</b>	---	---	<b>V</b>
<b>BV<sub>EBO</sub></b>	<b>I<sub>E</sub> = 2.5 mA</b>	<b>I<sub>E</sub> = 0 mA</b>	<b>3.0</b>	---	---	<b>V</b>
<b>I<sub>CBO</sub></b>	<b>V<sub>CB</sub> = 28 V</b>	<b>I<sub>E</sub> = 0 mA</b>	---	---	<b>0.9</b>	<b>mA</b>
<b>HFE</b>	<b>V<sub>CE</sub> = 20 V</b>	<b>I<sub>C</sub> = 500 mA</b>	<b>10</b>	---	<b>200</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> = 8 W</b>	<b>V<sub>CE</sub> = 25 V</b>	<b>4.0</b>	---	---	<b>W</b>
<b>G<sub>P</sub></b>	<b>f = 860 MHz</b>	<b>P<sub>IN</sub> = 8 W</b>	<b>V<sub>CE</sub> = 25 V</b>	<b>7.0</b>	---	---	<b>dB</b>
<b>IMD<sub>3</sub></b>	<b>P<sub>SYNC</sub> = 4 W</b>	<b>P<sub>IN</sub> = 8 W</b>	<b>V<sub>CE</sub> = 25 V</b>	---		<b>-60</b>	<b>dBc</b>
<b>C<sub>OB</sub></b>	<b>f = 1 MHz</b>	<b>V<sub>CB</sub> = 25 V</b>		---	---	<b>20</b>	<b>pf</b>

Conditions:      **V<sub>CE</sub> = 25 V**      **I<sub>C</sub> = 850 mA**

**PACKAGE MECHANICAL DATA**

