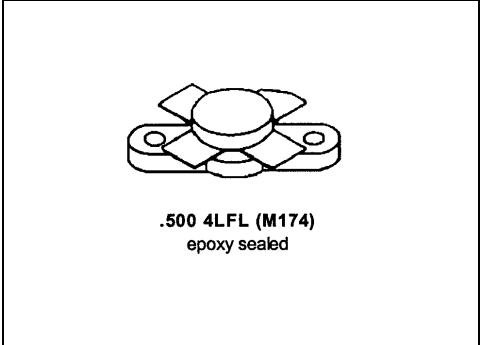


# MS1281

## RF & MICROWAVE TRANSISTORS FM BROADCAST APPLICATIONS

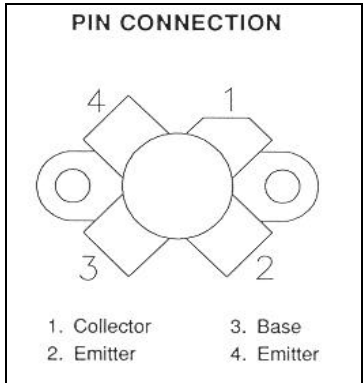
### Features

- 108 MHz
- 28 VOLTS
- GOLD METALLIZATION
- $P_{OUT} = 150$  WATTS
- $G_P = 9.2$ dB MINIMUM
- COMMON EMITTER CONFIGURATION



### DESCRIPTION:

The MS1281 is a 28V silicon NPN planar transistor designed primarily for VHF FM broadcast transmitters. Diffused emitter ballast provide infinite VSWR capability under rated operating conditions.



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

Symbol	Parameter	Value	Unit
$V_{CBO}$	Collector-Base Voltage	60	V
$V_{CEO}$	Collector-Emitter Voltage	25	V
$V_{CES}$	Collector-Emitter Voltage	60	V
$V_{EBO}$	Emitter-Base Voltage	4.0	V
$I_C$	Device Current	16	A
$P_D$	Power Dissipation	230	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	0.75	°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> = 100 mA</b>	<b>I<sub>E</sub> = 0 mA</b>	<b>60</b>	---	---	<b>V</b>
<b>BV<sub>CES</sub></b>	<b>I<sub>C</sub> = 100 mA</b>	<b>R<sub>BE</sub> = 10 Ω</b>	<b>55</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>25</b>	---	---	<b>V</b>
<b>BV<sub>EBO</sub></b>	<b>I<sub>E</sub> = 20 mA</b>	<b>I<sub>C</sub> = 0 mA</b>	<b>4.0</b>	---	---	<b>V</b>
<b>h<sub>FE</sub></b>	<b>V<sub>CE</sub> = 5 V</b>	<b>I<sub>C</sub> = 1 A</b>	<b>20</b>	---	<b>150</b>	---

**DYNAMIC**

Symbol	Test Conditions			Value			Unit
				Min.	Typ.	Max.	
<b>P<sub>OUT</sub></b>	<b>f = 108MHz</b>	<b>P<sub>IN</sub> = 18W</b>	<b>V<sub>CE</sub> = 28V</b>	<b>150</b>	---	---	<b>W</b>
<b>G<sub>p</sub></b>	<b>f = 108MHz</b>	<b>P<sub>IN</sub> = 18W</b>	<b>V<sub>CE</sub> = 28V</b>	<b>9.2</b>	---	---	<b>dB</b>
<b>η</b>	<b>f = 108MHz</b>	<b>P<sub>IN</sub> = 18W</b>	<b>V<sub>CE</sub> = 28V</b>	<b>70</b>	---	---	<b>%</b>
<b>C<sub>OB</sub></b>	<b>f = 1 MHz</b>	<b>V<sub>CB</sub> = 28V</b>		---	---	<b>150</b>	<b>pF</b>

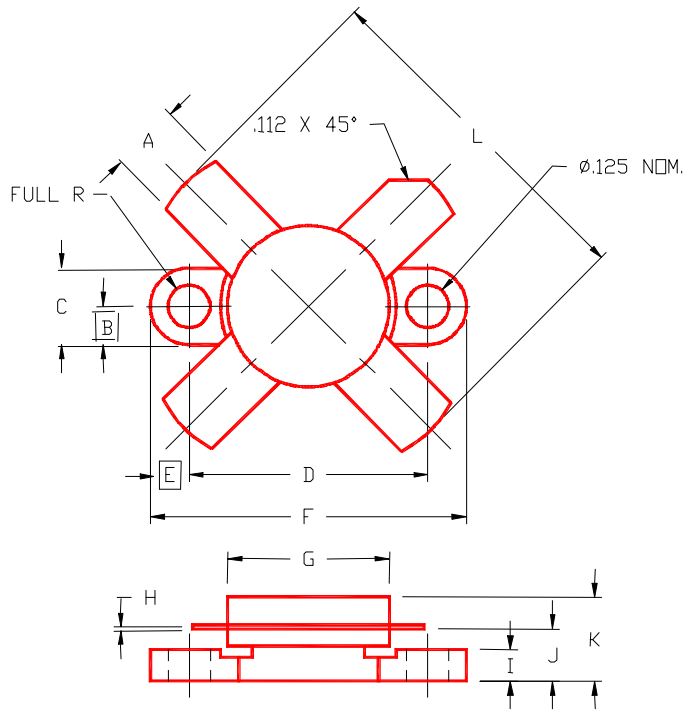
**IMPEDANCE DATA**

FREQ	Z <sub>IN</sub> (Ω)	Z <sub>CL</sub> (Ω)
<b>88 MHz</b>	<b>1.0 - j0.2</b>	<b>3.6 + j2.4</b>
<b>100 MHz</b>	<b>0.7 + j0.0</b>	<b>3.9 + j3.0</b>
<b>108 MHz</b>	<b>1.0 - j0.5</b>	<b>4.4 + j1.2</b>

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

**PACKAGE MECHANICAL DATA**

PACKAGE STYLE M174



	MINIMUM INCHES/MM	MAXIMUM INCHES/MM		MINIMUM INCHES/MM	MAXIMUM INCHES/MM
A	.220/5,59	.230/5,84	I	.090/2,29	.110/2,79
B	.125/3,18		J	.160/4,06	.175/4,45
C	.245/6,22	.255/6,48	K	.280/7,11	
D	.720/18,28	.730/18,54	L	1.050/26,67	
E	.125/3,18				
F	.970/24,64	.980/24,89			
G	.495/12,57	.505/12,83			
H	.003/0,08	.007/0,18			