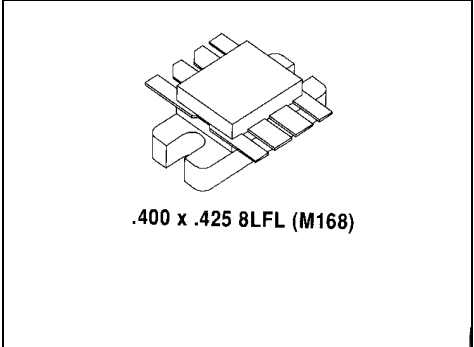


# MS1509

## RF & MICROWAVE TRANSISTORS TV/LINEAR APPLICATIONS

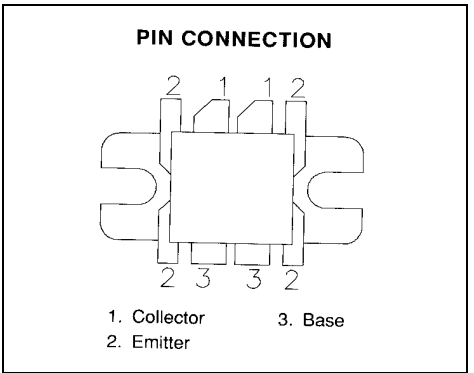
### Features

- 500 MHz
- 28 VOLTS
- P<sub>OUT</sub> = 100 WATTS
- G<sub>P</sub> = 5.5 dB GAIN MINIMUM
- EFFICIENCY 55%
- GOLD METALLIZATION
- COMMON EMITTER CONFIGURATION



### DESCRIPTION:

The MS1509 is a 28 V gold metallized, Class C epitaxial silicon NPN planar transistor designed for UHF military and commercial equipment. The MS1508 is an internally matched, broadband device optimized for operation within the 100 – 500 MHz frequency range. This device utilizes diffused emitter resistors to achieve 5:1 VSWR load mismatch capability at rated operating conditions.



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

Symbol	Parameter	Value	Unit
V <sub>CBO</sub>	Collector-Base Voltage	60	V
V <sub>CEO</sub>	Collector-Emitter Voltage	33	V
V <sub>CES</sub>	Collector-Emitter Voltage	60	V
V <sub>EBO</sub>	Emitter-Base Voltage	4.0	V
I <sub>C</sub>	Device Current	15	A
P <sub>DISS</sub>	Power Dissipation	260	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	0.67	°C/W
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**ELECTRICAL SPECIFICATIONS (T<sub>case</sub> = 25°C)  
STATIC**

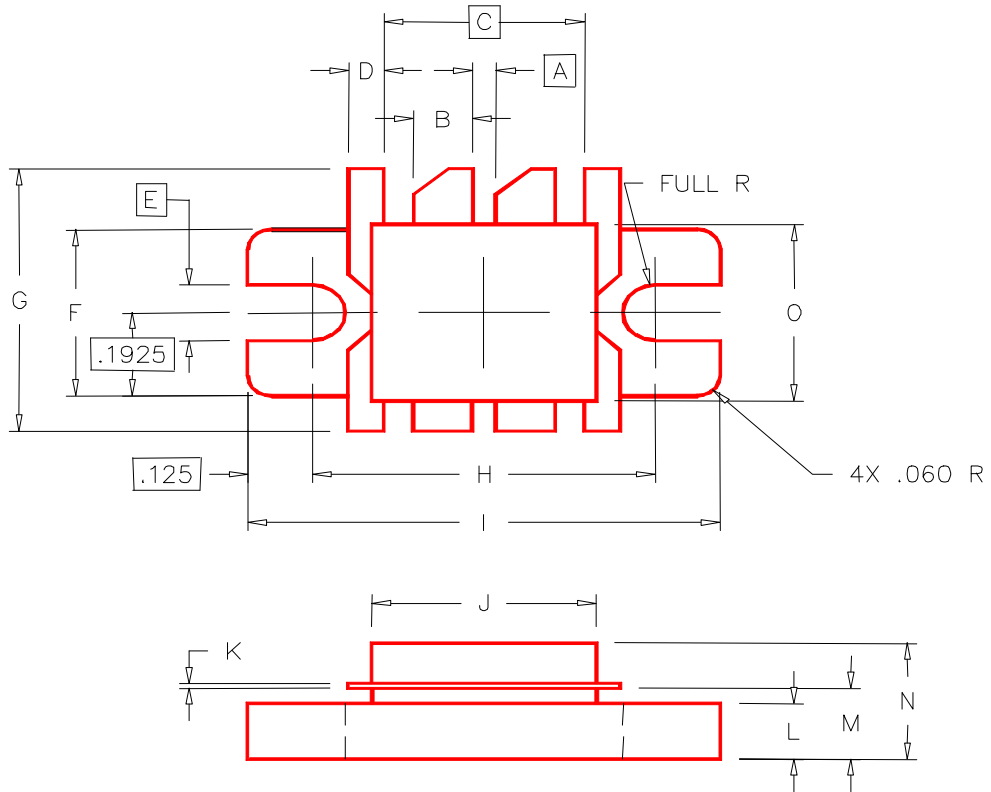
Symbol	Test Conditions		Value			Unit
			Min.	Typ.	Max.	
<b>BV<sub>CBO</sub></b>	<b>I<sub>C</sub> = 100 mA</b>	<b>I<sub>E</sub> = 0 mA</b>	<b>60</b>	---	---	<b>V</b>
<b>BV<sub>CES</sub></b>	<b>I<sub>C</sub> = 80 mA</b>	<b>V<sub>BE</sub> = 0 V</b>	<b>60</b>	---	---	<b>V</b>
<b>BV<sub>CEO</sub></b>	<b>I<sub>C</sub> = 50 mA</b>	<b>I<sub>B</sub> = 0 mA</b>	<b>33</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>I<sub>CBO</sub></b>	<b>V<sub>CB</sub> = 30 V</b>	<b>I<sub>E</sub> = 0 mA</b>	---	---	<b>10</b>	<b>mA</b>
<b>HFE</b>	<b>V<sub>CE</sub> = 5 V</b>	<b>I<sub>C</sub> = 1 mA</b>	<b>20</b>	---	---	---

**DYNAMIC**

Symbol	Test Conditions			Value			Unit
				Min.	Typ.	Max.	
<b>P<sub>OUT</sub></b>	<b>f = 500 MHz</b>	<b>P<sub>IN</sub> = 28.2 W</b>	<b>V<sub>CC</sub> = 28 V</b>	<b>100</b>	---	---	<b>W</b>
<b>G<sub>P</sub></b>	<b>f = 500 MHz</b>	<b>P<sub>IN</sub> = 28.2 W</b>	<b>V<sub>CC</sub> = 28 V</b>	<b>5.5</b>	---	---	<b>dB</b>
<b>η<sub>C</sub></b>	<b>f = 500 MHz</b>	<b>P<sub>IN</sub> = 28.2 W</b>	<b>V<sub>CC</sub> = 28 V</b>	<b>55</b>	---	---	<b>%</b>

**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			