

**MS1409**

**RF & MICROWAVE TRANSISTOR  
 VHF COMMUNICATIONS**

**Features**

- 175 MHz
- 28 VOLTS
- P<sub>OUT</sub> = 2.5 W
- G<sub>P</sub> = 10 dB MINIMUM
- COMMON EMITTER CONFIGURATION

**DESCRIPTION:**

The MS1409 is a NPN silicon transistor designed for high power gain VHF and UHF communication applications. Gold metalization and diffused emitter ballast resistors provide superior long term reliability.



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

Symbol	Parameter	Value	Unit
V <sub>CB0</sub>	Collector-base Voltage	65	V
V <sub>CEO</sub>	Collector-emitter Voltage	40	V
V <sub>EBO</sub>	Emitter-base Voltage	4.0	V
P <sub>DISS</sub>	Total Power Dissipation	7.0	W
I <sub>C</sub>	Collector Peak Current	1.0	A
T <sub>J</sub>	Junction Temperature	200	°C
T <sub>STG</sub>	Storage Temperature	-65 to 200	°C

**Thermal Data**

R <sub>TH(J-CASE)</sub>	Thermal Resistance Junction-case	25	°C/W
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**MS1409**
**ELECTRICAL SPECIFICATIONS (T<sub>case</sub> = 25°C)  
STATIC**

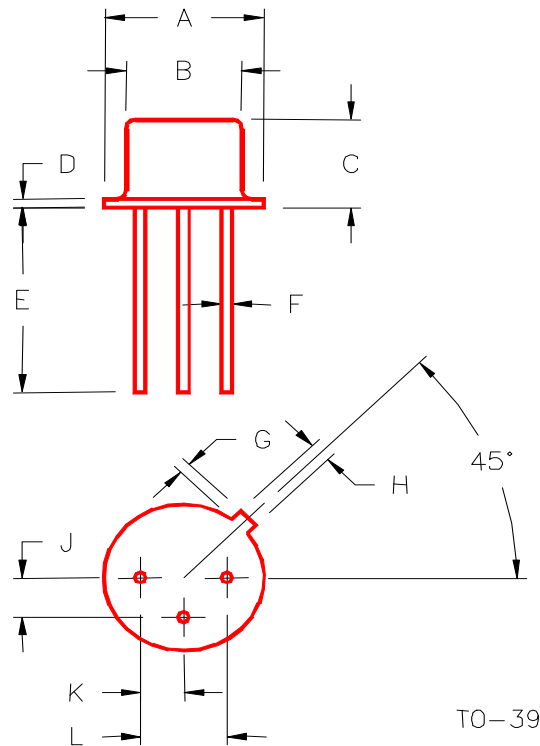
Symbol	Test Conditions	Value			Unit
		Min.	Typ.	Max.	
BVebo	I <sub>E</sub> = 0.10 mA      I <sub>C</sub> = 0 mA	4.0	---	---	V
BVcbo	I <sub>C</sub> = 0.3 mA      I <sub>E</sub> = 0 mA	65	---	---	V
BVceo	I <sub>C</sub> = 3 mA      I <sub>S</sub> = 0 mA	40	---	---	V
I <sub>ceo</sub>	V <sub>CE</sub> = 30 V	---	---	0.1	mA
H <sub>FE</sub>	V <sub>CE</sub> = 5 V      I <sub>C</sub> = 100 mA	20	---	200	B

**DYNAMIC**

Symbol	Test Conditions	Value			Unit
		Min.	Typ.	Max.	
P <sub>OUT</sub>	f = 175 MHz      P <sub>IN</sub> = 0.25W      V <sub>CC</sub> = 28V	2.5	---	---	W
η <sub>C</sub>	f = 175 MHz      P <sub>IN</sub> = 0.25W      V <sub>CC</sub> = 28V	50	---	---	%
G <sub>P</sub>	f = 175 MHz      P <sub>IN</sub> = 0.25W      V <sub>CC</sub> = 28V	10	---	---	dB
C <sub>OB</sub>	f = 1.0MHz      V <sub>CB</sub> = 30V	---	---	10	pf

**PACKAGE MECHANICAL DATA**

PACKAGE STYLE M246



	MINIMUM INCHES/MM	MAXIMUM INCHES/MM		MINIMUM INCHES/MM	MAXIMUM INCHES/MM
A	.350/8,89	.370/9,40	J	.095/2,41	.105/2,67
B	.315/8,00	.335/8,51	K	.095/2,41	.105/2,67
C		.260/6,60	L	.190/4,83	.210/5,33
D	.015/0,38	.045/1,14			
E	.500/12,70				
F	.016/0,41	.019/0,48			
G	.029/0,74	.040/1,02			
H	.028/0,71	.034/0,86			