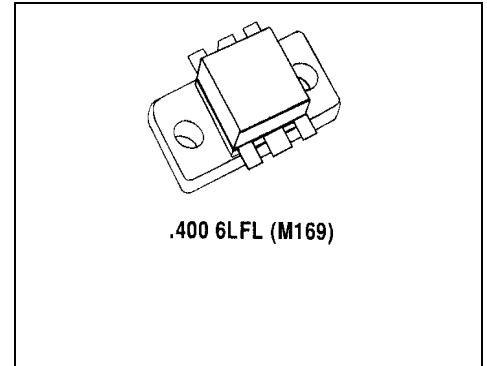# MS1536

F

RF & MICROWAVE TRANSISTORS
800 / 900 MHz APPLICATIONS

Features

- **900 MHz**
- **24 VOLTS**
- **P_{OUT} = 60 WATTS**
- **G_P = 7.0 dB MINIMUM**
- **INPUT AND OUTPUT MATCHED**
- **COMMON BASE CONFIGURATION**

.400 6LFL (M169)

DESCRIPTION:

The MS1536 is a 28V Class C epitaxial silicon NPN planar transistor designed primarily for UHF communications. This device utilizes diffused emitter resistors to achieve 10:1 VSWR capability under specified operating conditions. Internal input matching provides optimum power gain and efficiency over the 225 – 400 MHz band.

PIN CONNECTION

1. Collector   3. Emitter
2. Base
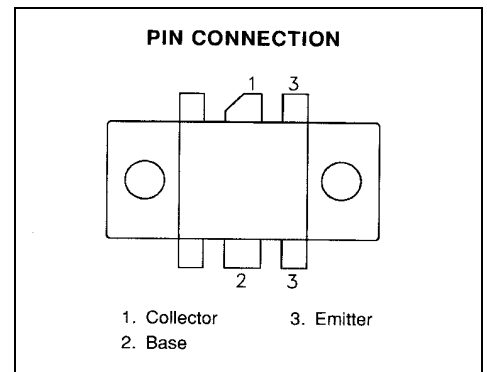
ABSOLUTE MAXIMUM RATINGS (Tcase = 25°C)

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage	55	V
V_{CES}	Collector-Emitter Voltage	55	V
V_{EBO}	Emitter-Base Voltage	4.0	V
I_C	Device Current	10	A
P_{DISS}	Power Dissipation	175	W
T_{STG}	Storage Temperature	-65 to +150	°C
T_J	Junction Temperature	+200	°C

Thermal Data

$R_{TH(J-C)}$	Thermal Resistance Junction-case	1.0	°C/W

ELECTRICAL SPECIFICATIONS (Tcase = 25°C)

STATIC

Symbol	Test Conditions		Value			Unit
			Min.	Typ.	Max.	
BV_{CBO}	I_C = 50mA	I_E = 0mA	55	---	---	V
BV_{CES}	I_C = 50mA	V_{BE} = 0mA	55	---	---	V
BV_{CEO}	I_C = 50mA	I_B = 0mA	28	---	---	V
BV_{EBO}	I_E = 10mA	I_C = 0mA	3.0	---	---	V
I_{CES}	V_{CE} = 25V	I_E = 0mA	---	---	10	mA
HFE	V_{CE} = 5V	I_C = 2A	20	---	150	---

DYNAMIC

Symbol	Test Conditions			Value			Unit
				Min.	Typ.	Max.	
P_{OUT}	f = 900 MHz	P_{IN} = 12W	V_{CE} = 24V	60	---	---	W
G_P	f = 900 MHz	P_{IN} = 12W	V_{CE} = 24V	7.5	---	---	dB
η_C	f = 900 MHz	P_{IN} = 12W	V_{CE} = 24V	55	---	---	%
C_{OB}	f = 1 MHz	V_{CB} = 24 V		---	---	70	pf

IMPEDANCE DATA

FREQ	$Z_{IN}(\Omega)$	$Z_{CL}(\Omega)$
960 MHz	3.8 - j3.8	4.9 + j2.0
900 MHz	7.6 - j3.4	5.0 + j0.4
870 MHz	9.4 - j2.6	4.3 + j.06
800 MHz	10.8 + j1.0	4.3 + j0.5

P_{OUT} = 60W
V_{CE} = 24V

TYPICAL PERFORMANCE

BROADBAND POWER OUTPUT vs POWER INPUT

![Advanced Power Technology RF logo]

MS1536
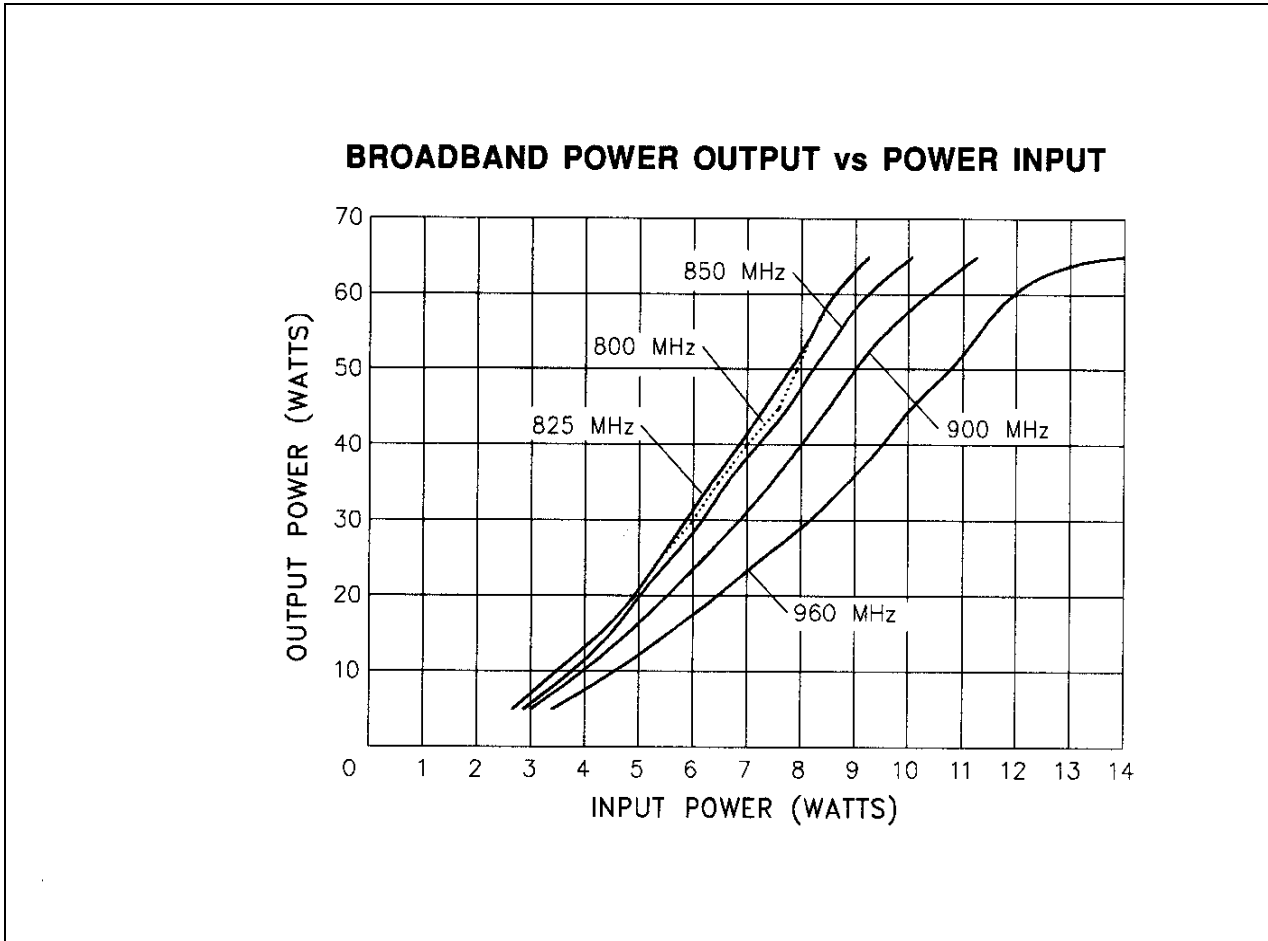
PACKAGE MECHANICAL DATA

PACKAGE STYLE M169
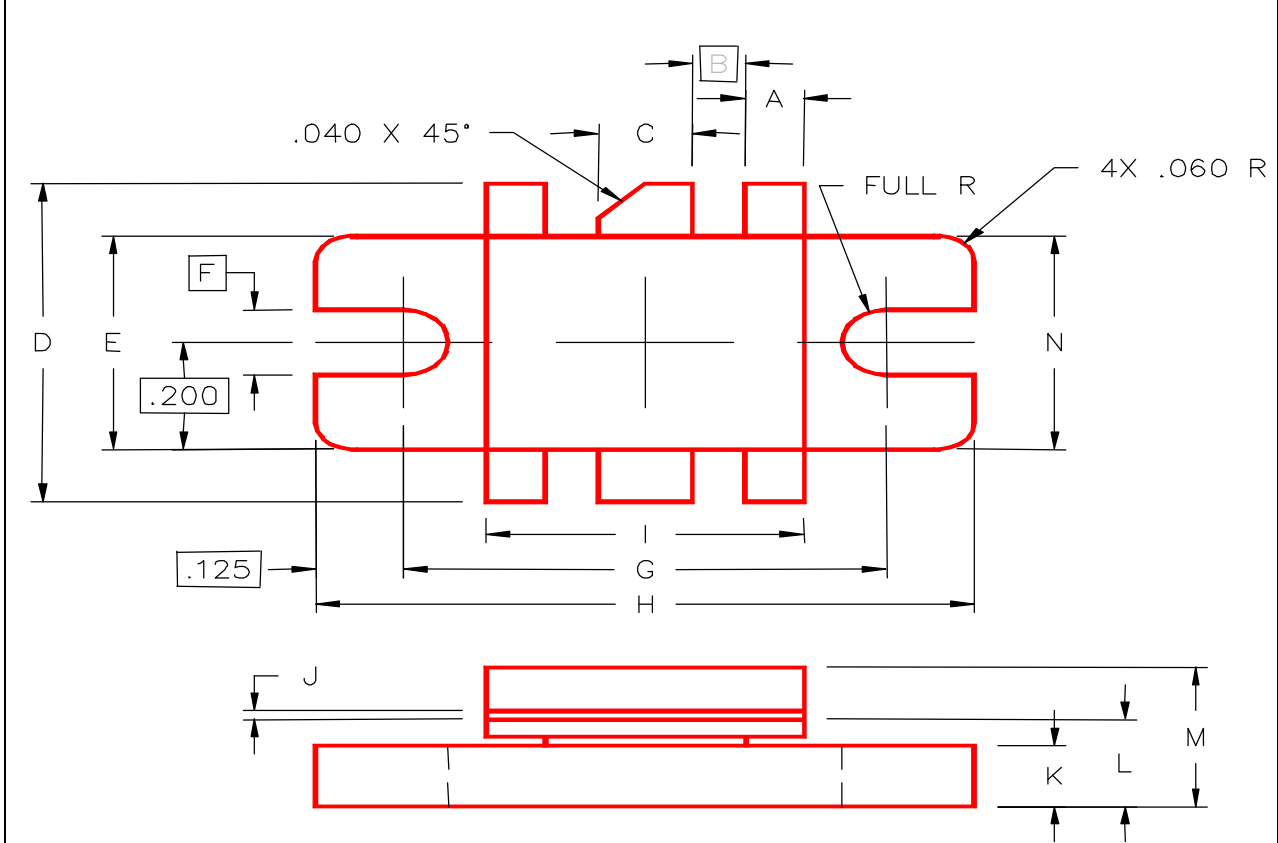
	MINIMUM INCHES/MM	MAXIMUM INCHES/MM		MINIMUM INCHES/MM	MAXIMUM INCHES/MM
A	.077/1,96	.087/2,21	I	.419/10,64	.429/10,90
B	.120/3,05		J	.002/0,05	.007/0,18
C	.115/2,92	.125/3,18	K	.102/2,59	.112/2,84
D	.585/14,86	.615/15,62	L	.162/4,11	.175/4,45
E	.395/10,03	.405/10,29	M		.280/7,11
F	.130/3,30		N	.395/10,03	.405/10,29
G	.720/18,29	.730/18,54			
H	.970/24,64	.980/24,89			