



MS1504

RF & MICROWAVE TRANSISTORS

PRODUCT PREVIEW

DESCRIPTION

The MS1504 is a 13.6 V Class C epitaxial silicon NPN planar transistor designed primarily for VHF communications. The MS1504 utilizes an emitter ballasted die geometry to withstand severe load mismatch conditions.

IMPORTANT: For the most current data, consult MICROSEMI's website: <http://www.microsemi.com>

KEY FEATURES

- 160 MHz
- 13.6 Volts
- Common Emitter
- $P_{OUT} = 30 \text{ W Min.}$
- $G_p = 10.0 \text{ dB Gain}$

APPLICATIONS/BENEFITS

- VHF Mobile Applications

ABSOLUTE MAXIMUM RATINGS ($T_{CASE} = 25^\circ\text{C}$)

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage	36	V
V_{CEO}	Collector-Emitter Voltage	18	V
V_{CES}	Collector-Emitter Voltage	36	V
V_{EBO}	Emitter-Base Voltage	4.0	V
I_C	Device Current	8.0	A
P_{DISS}	Power Dissipation	70	W
T_J	Junction Temperature	+200	$^\circ\text{C}$
T_{STG}	Storage Temperature	-65 to +150	$^\circ\text{C}$

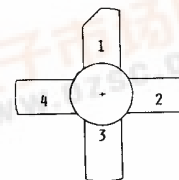


.380 4LSTUD(M135)
epoxy sealed

THERMAL DATA

$R_{TH(j-c)}$	Junction-Case Thermal Resistance	1.2	$^\circ\text{C/W}$
---------------	----------------------------------	-----	--------------------

PIN CONNECTION



1 collector
2 emitter

3 base
4 emitter

STATIC ELECTRICAL SPECIFICATIONS (T_{CASE} = 25°C)

Symbol	Test Conditions	MS1504			Units
		Min.	Typ.	Max.	
BV_{CES}	I_C = 15 mA V_{BE} = 0 mA	36	—	—	V
BV_{CEO}	I_C = 50 mA I_B = 0 mA	18	—	—	V
BV_{EBO}	I_E = 5 mA I_C = 0 mA	4.0	—	—	V
I_{CBO}	V_{CB} = 15 V I_E = 0 mA	—	—	5	mA
h_{FE}	V_{CE} = 5 V I_C = 250 mA	20	—	200	—

DYNAMIC ELECTRICAL SPECIFICATIONS (T_{CASE} = 25°C)

Symbol	Test Conditions	MS1504			Units
		Min.	Typ.	Max.	
P_{OUT}	f = 160 MHz P_{IN} = 3.0 W V_{CE} = 13.6 V	30	—	—	W
G_P	f = 160 MHz P_{IN} = 3.0 W V_{CE} = 13.6 V	10	—	—	dB
C_{OB}	f = 1 MHz V_{CB} = 15 V	—	—	95	pF

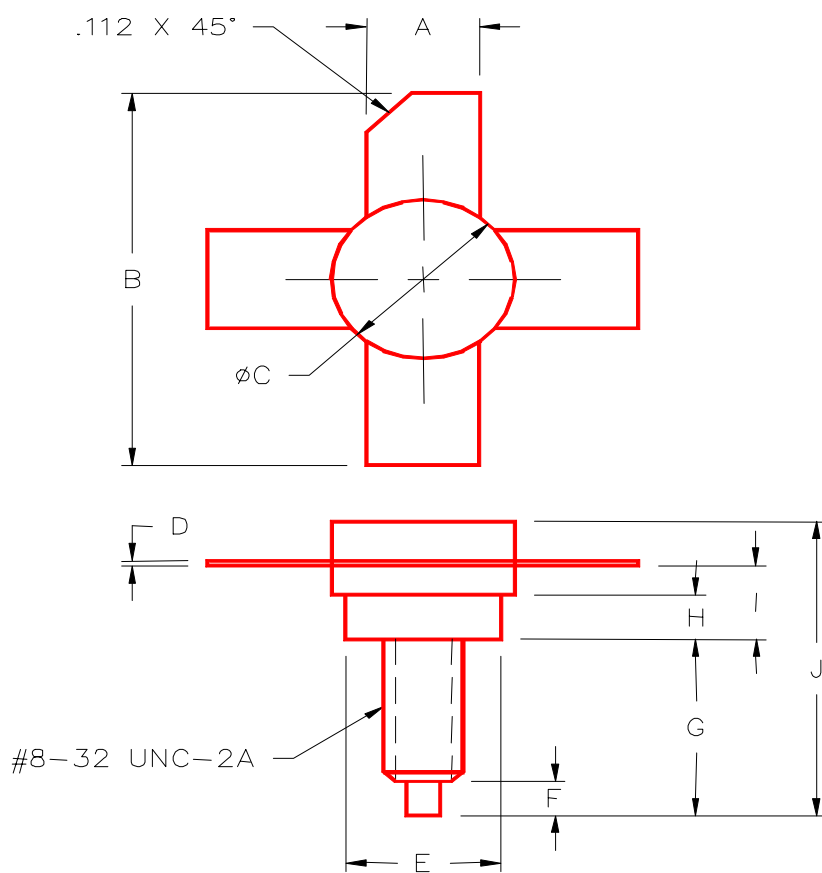
IMPEDANCE DATA

Freq.	Z _{IN} (Ω)	Z _{CL} (Ω)
175 MHz	1.0 + j 0.4	2.3 + j 0.1

P_{IN} = 3.0 W

V_{CE} = 12.5 V

PACKAGE STYLE M135



	MINIMUM INCHES/MM	MAXIMUM INCHES/MM		MINIMUM INCHES/MM	MAXIMUM INCHES/MM
A	.220/5,59	.230/5,84	I	.155/3,94	.175/4,45
B	.980/24,89		J		.750/19,05
C	.370/9,40	.385/9,78			
D	.004/0,10	.007/0,18			
E	.320/8,13	.330/8,38			
F	.100/2,54	.130/3,30			
G	.450/11,43	.490/12,45			
H	.090/2,29	.100/2,54			



MS1504

RF & MICROWAVE TRANSISTORS

PRODUCT PREVIEW

www.Microsemi.com

NOTES