



SD1018

RF & MICROWAVE TRANSISTORS

PRODUCT PREVIEW

DESCRIPTION

The SD1018 is an epitaxial silicon NPN planar transistor designed primarily for VHF mobile and marine transmitters. The device utilizes emitter ballasting resistors and improved metallization systems to achieve extreme ruggedness under severe operating conditions.

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

KEY FEATURES

- 175 MHz
- 12.5 Volts
- Common Emitter
- $P_{OUT} = 40$ W Min.
- $G_P = 4.5$ dB Gain

APPLICATIONS/BENEFITS

- VHF FM Mobile Applications

ABSOLUTE MAXIMUM RATINGS (T_{case} = 25°C)

Symbol	Parameter	Value	Unit
V _{CBO}	Collector-Base Voltage	36	V
V _{CEO}	Collector-Emitter Voltage	18	V
V _{EBO}	Emitter-Base Voltage	4.0	V
I _C	Device Current	6.0	A
P _{DISS}	Power Dissipation	80	W
T _J	Junction Temperature	+200	°C
T _{STG}	Storage Temperature	-65 to +150	°C

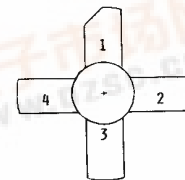


.380 4LSTUD(M135)
epoxy sealed

THERMAL DATA

R _{TH(j-c)}	Junction-Case Thermal Resistance	2.2	°C/W
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PIN CONNECTION



1 collector
2 emitter
3 base
4 emitter



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

Symbol	Test Conditions	SD1018			Units
		Min.	Typ.	Max.	
BV_{CES}	I_C = 20 mA V_{BE} = 0 V	36	—	—	V
BV_{CEO}	I_C = 100 mA I_B = 0 mA	18	—	—	V
BV_{EBO}	I_E = 10 mA I_C = 0 mA	4.0	—	—	V
I_{CBO}	V_{CB} = 15 V I_E = 0 mA	—	—	2.5	mA
h_{FE}	V_{CE} = 5 V I_C = 1 A	10	—	100	—

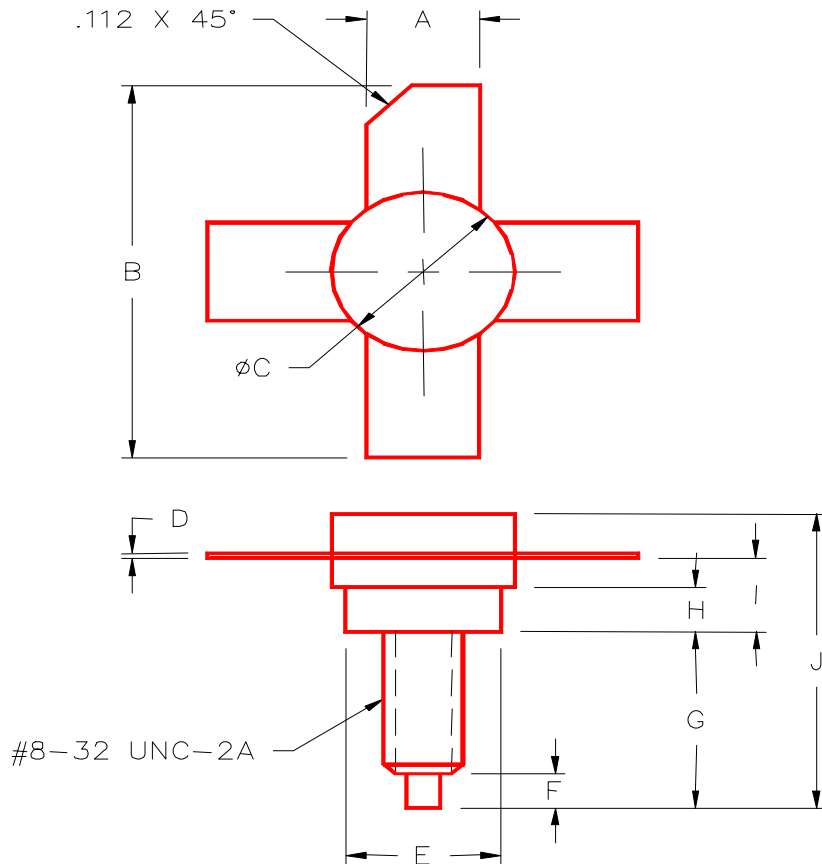
DYNAMIC ELECTRICAL SPECIFICATIONS (T_{CASE} = 25°C)

Symbol	Test Conditions	SD1018			Units
		Min.	Typ.	Max.	
P_{OUT}	f = 175 MHz P_{IN} = 14 W V_{CE} = 12.5 V	40	—	—	W
G_p	f = 175 MHz P_{IN} = 14 W V_{CE} = 12.5 V	4.5	—	—	dB
η_C	f = 175 MHz P_{OUT} = 40 W V_{CE} = 12.5 V	70	—	—	%
C_{OB}	f = 1 MHz V_{CB} = 15 V	—	—	200	pF

IMPEDANCE DATA

P _{IN} (W)	P _{OUT} (W)	Z _{IN} (Ω)	Z _{OUT} (Ω)
12	46.5	0.8 - j 1.6	1.6 - j 0.3

P_{IN} = 14 W
V_{CC} = 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			



RF PRODUCTS DIVISION

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WWW.MICROSEMI.COM

NOTES