

**DESCRIPTION**

This silicon epitaxial NPN planar high frequency transistor employs a multi emitter electrode design. This feature together with a heavily diffused base matrix located between the individual emitters results in high RF current handling capability, high power gain, low base resistance and low output capacitance. These transistors are intended for Class A, B, or C amplifier, oscillator or frequency multiplier circuits and are specifically designed for operation in the VHF-UHF region.

**IMPORTANT:** For the most current data, visit: <http://www.advancedpower.com>

**KEY FEATURES**

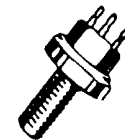
- 130 - 400 MHz
- 28 Volts
- High Power Gain
- High Efficiency
- Common Emitter
- $P_{OUT} = 13.5 \text{ W Min. @ } 175 \text{ MHz}$

**APPLICATIONS/BENEFITS**

- VHF - UHF Applications

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

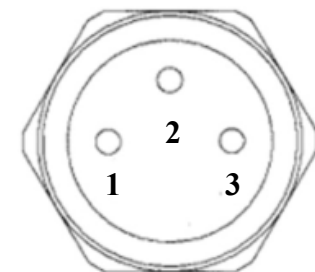
Symbol	Parameter	Value	Unit
$V_{CBO}$	Collector-Base Voltage	65	V
$V_{CES}$	Collector-Emitter Voltage	40	V
$V_{EBO}$	Emitter-Base Voltage	4.0	V
$I_C$	Device Current	3.0	A
$P_{DISS}$	Power Dissipation	23.0	W
$T_J$	Junction Temperature	+200	$^{\circ}\text{C}$
$T_{STG}$	Storage Temperature	-65 to +150	$^{\circ}\text{C}$



TO 60 (M137)

**THERMAL DATA**

$R_{TH(j-c)}$	Junction-Case Thermal Resistance	7.6	$^{\circ}\text{C/W}$
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**PIN CONNECTION**


1. Emitter      3. Collector  
2. Base

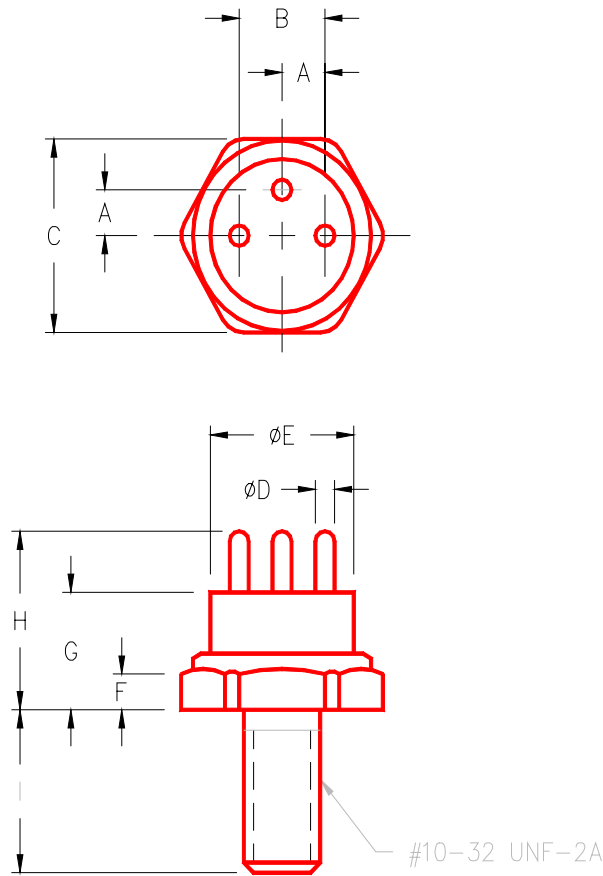
**STATIC ELECTRICAL SPECIFICATIONS (T<sub>CASE</sub> = 25°C)**

Symbol	Test Conditions	SD1070			Units
		Min.	Typ.	Max.	
<b>BV<sub>CBO</sub></b>	<b>I<sub>C</sub> = 0.5 mA</b>	65	—	—	V
<b>BV<sub>EBO</sub></b>	<b>I<sub>E</sub> = 0.25 mA</b>	4	—	—	V
<b>BV<sub>CEO</sub></b>	<b>I<sub>C</sub> = 200 mA</b>	40	—	—	V
<b>I<sub>CEO</sub></b>	<b>V<sub>CE</sub> = 30 V</b>	—	—	0.25	mA
<b>h<sub>FE</sub></b>	<b>V<sub>CE</sub> = 5 V      I<sub>C</sub> = 1 A</b>	5	—	—	—

**DYNAMIC ELECTRICAL SPECIFICATIONS (T<sub>CASE</sub> = 25°C)**

Symbol	Test Conditions	SD1070			Units
		Min.	Typ.	Max.	
<b>P<sub>OUT</sub></b>	<b>f = 175 MHz    P<sub>IN</sub> = 3.5 V    V<sub>CC</sub> = 28 V</b>	13.5	—	—	W
<b>η<sub>C</sub></b>	<b>f = 175 MHz    P<sub>IN</sub> = 3.5 V    V<sub>CC</sub> = 28 V</b>	70	—	—	%
<b>G<sub>p</sub></b>	<b>f = 175 MHz    P<sub>IN</sub> = 3.5 V    V<sub>CC</sub> = 28 V</b>	5.8	—	—	dB
<b>C<sub>OB</sub></b>	<b>f = 1 MHz      V<sub>CB</sub> = 30 V</b>	—	—	20	pF

**PACKAGE STYLE M137**



	MINIMUM INCHES/MM	MAXIMUM INCHES/MM		MINIMUM INCHES/MM	MAXIMUM INCHES/MM
A	.090/2,29	.110/2,79	I	.420/10,67	.455/11,56
B	.185/4,70	.215/5,46	I	.140/3,56	.160/4,06
C	.420/10,67	.440/11,18			
D	.030/0,76	.046/1,17			
E	.320/8,13	.360/9,14			
F	.090/2,29	.135/3,43			
G	.215/5,46	.320/8,13			
H		.480/12,19			

STANDARD STUD  
SHORT STUD