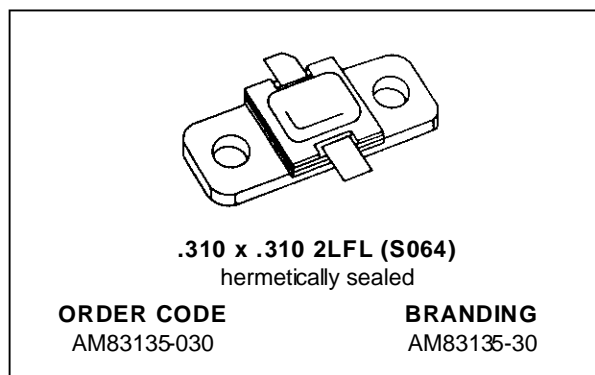


RF & MICROWAVE TRANSISTORS S-BAND RADAR APPLICATIONS

PRELIMINARY DATA

- REFRACTORY/GOLD METALLIZATION
- EMITTER SITE BALLASTED
- LOW THERMAL RESISTANCE
- INPUT/OUTPUT MATCHING
- OVERLAY GEOMETRY
- METAL/CERAMIC HERMETIC PACKAGE
- P_{OUT} = 30 W MIN. WITH 5.5 dB GAIN

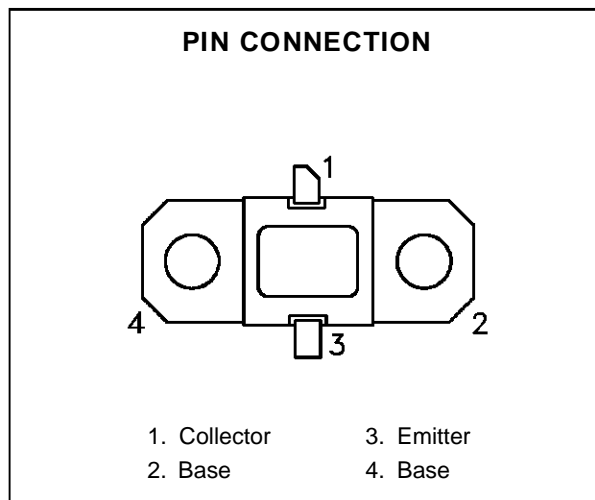


DESCRIPTION

The AM83135-030 device is a high power silicon bipolar NPN transistor specifically designed for S-Band radar pulsed output and driver applications.

This device is characterized at 100µsec pulse width and 10% duty cycle, but is capable of operation over a range of pulse widths, duty cycles, and temperatures, and withstand a 3:1 output VSWR with a + 1 dB input overdrive. Low RF thermal resistance, refractory/gold metallization, and computerized automatic wire bonding techniques ensure high reliability and product consistency (including phase characteristics).

The AM83135-030 is supplied in the IMPAC™ Hermetic Metal/Ceramic package with internal Input/Output impedance matching circuitry, and is intended for military and other high reliability applications.



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

Symbol	Parameter	Value	Unit
P _{DISS}	Power Dissipation* (T _c ≤ 50°C)	133	W
I _c	Device Current*	6.0	A
V _{CC}	Collector-Supply Voltage*	46	V
T _J	Junction Temperature (Pulsed RF Operation)	250	°C
T _{STG}	Storage Temperature	- 65 to +200	°C

THERMAL DATA

R _{TH(j-c)}	Junction-Case Thermal Resistance*	1.5	°C/W
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*Applies only to rated RF amplifier operation

AM83135-030

ELECTRICAL SPECIFICATIONS ($T_{case} = 25^{\circ}C$)

STATIC

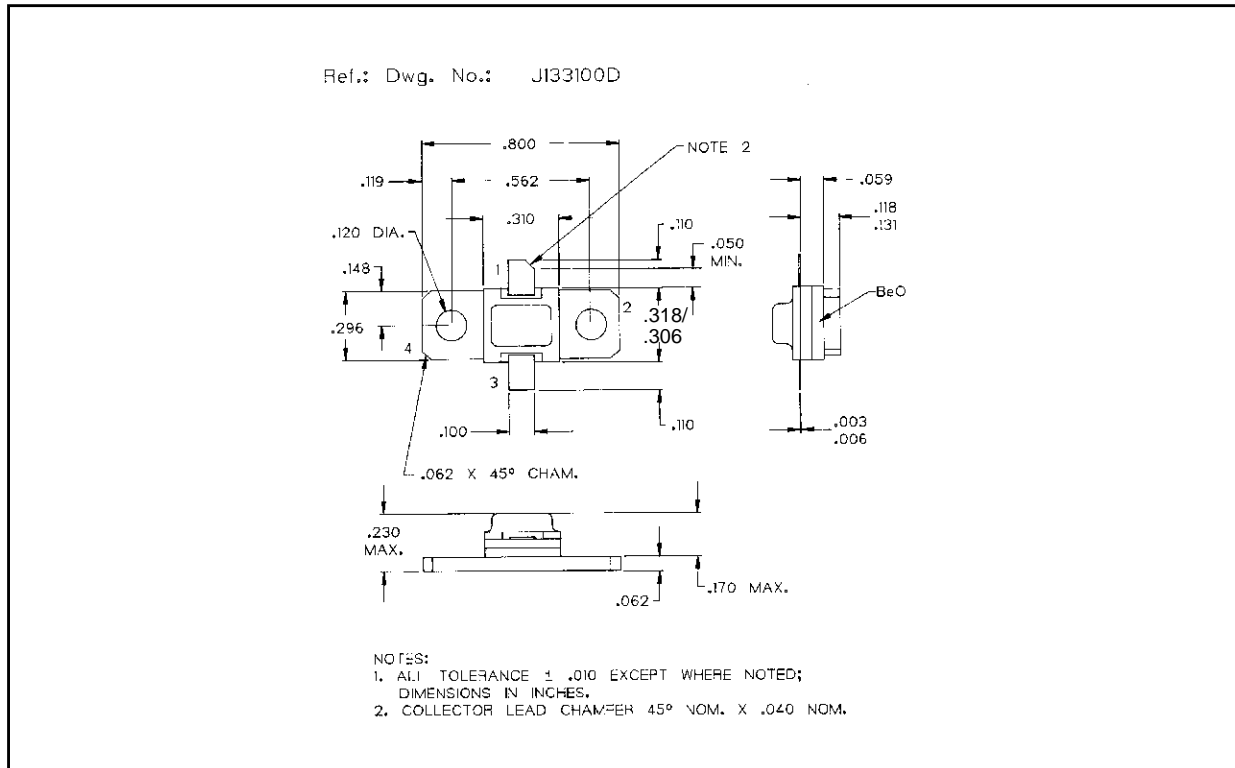
Symbol	Test Conditions		Value			Unit
			Min.	Typ.	Max.	
BV_{CBO}	$I_C = 20mA$	$I_E = 0mA$	55	—	—	V
BV_{EBO}	$I_E = 4mA$	$I_C = 0mA$	3.5	—	—	V
BV_{CER}	$I_C = 20mA$	$R_{BE} = 10\Omega$	55	—	—	V
I_{CES}	$V_{BE} = 0V$	$V_{CE} = 40V$	—	—	15	mA
h_{FE}	$V_{CE} = 5V$	$I_C = 2A$	30	—	300	—

DYNAMIC

Symbol	Test Conditions			Value			Unit
				Min.	Typ.	Max.	
P_{OUT}	$f = 3.1 - 3.5GHz$	$P_{IN} = 8.5W$	$V_{CC} = 40V$	30	—	—	W
η_c	$f = 3.1 - 3.5GHz$	$P_{IN} = 8.5W$	$V_{CC} = 40V$	30	—	—	%
G_P	$f = 3.1 - 3.5GHz$	$P_{IN} = 8.5W$	$V_{CC} = 40V$	5.5	—	—	dB

Note: Pulse Width = 100 μ Sec
Duty Cycle = 10%

PACKAGE MECHANICAL DATA



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