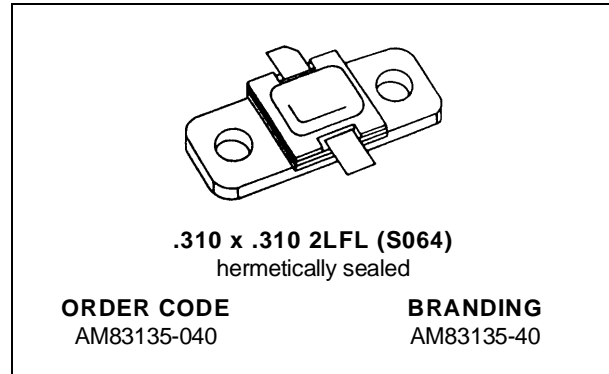


RF & MICROWAVE TRANSISTORS S-BAND RADAR APPLICATIONS

PRELIMINARY DATA

- REFRACTORY/GOLD METALLIZATION
- EMITTER SITE BALLASTED
- LOW THERMAL RESISTANCE
- INPUT/OUTPUT MATCHING
- OVERLAY GEOMETRY
- METAL/CERAMIC HERMETIC PACKAGE
- $P_{OUT} = 40 \text{ W MIN. WITH } 5.1 \text{ dB GAIN}$

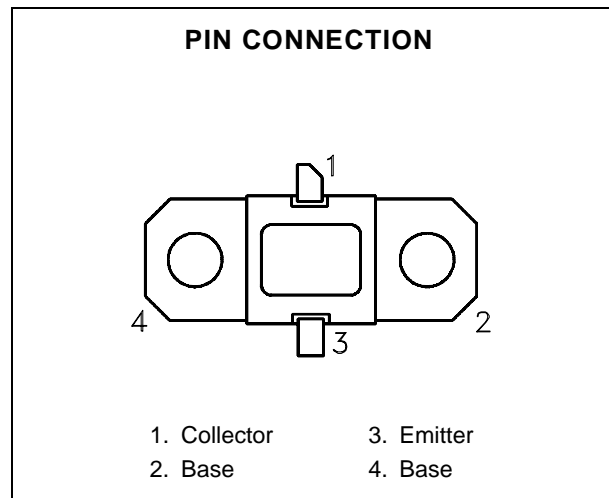


DESCRIPTION

The AM83135-040 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 10µsec pulse width and 10% duty cycle, but is capable of operation over a range of pulse widths, duty cycles, and temperatures, and can 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 AM83135-040 is supplied in the IMPACT™ Hermetic Metal/Ceramic package with internal Input/Output impedance matching circuitry, and is intended for military and other high reliability applications.



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

Symbol	Parameter	Value	Unit
P_{DISS}	Power Dissipation* ($T_C \leq 50^{\circ}\text{C}$)	167	W
I_C	Device Current*	8.0	A
V_{CC}	Collector-Supply Voltage*	46	V
T_J	Junction Temperature (Pulsed RF Operation)	250	$^{\circ}\text{C}$
T_{STG}	Storage Temperature	- 65 to +200	$^{\circ}\text{C}$

THERMAL DATA

$R_{TH(j-c)}$	Junction-Case Thermal Resistance*	1.2	$^{\circ}\text{C/W}$
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*Applies only to rated RF amplifier operation

AM83135-040

ELECTRICAL SPECIFICATIONS (T_{case} = 25°C)

STATIC

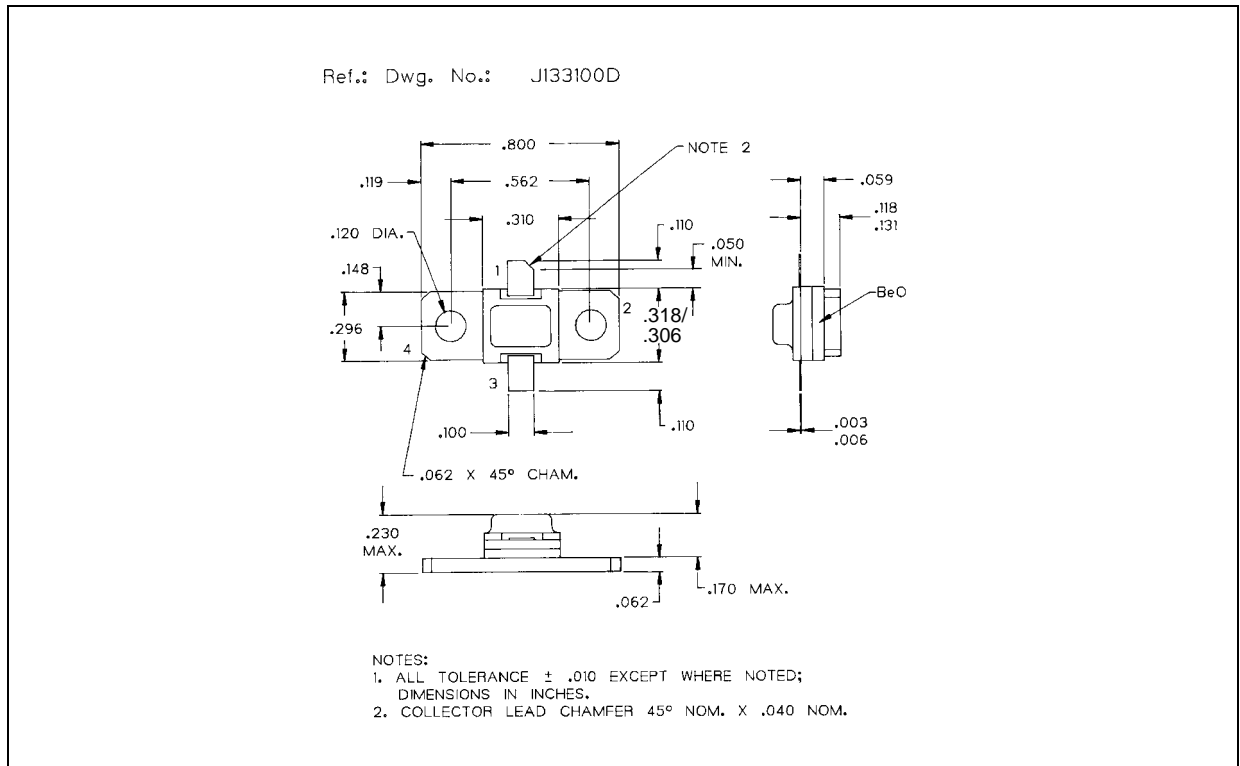
Symbol	Test Conditions		Value			Unit
			Min.	Typ.	Max.	
BV _{CBO}	I _C = 25mA	I _E = 0mA	55	—	—	V
BV _{EBO}	I _E = 5mA	I _C = 0mA	3.5	—	—	V
BV _{CER}	I _C = 25mA	R _{BE} = 10Ω	55	—	—	V
I _{CES}	V _{BE} = 0V	V _{CE} = 40V	—	—	20	mA
h _{FE}	V _{CE} = 5V	I _C = 3A	30	—	300	—

DYNAMIC

Symbol	Test Conditions			Value			Unit
				Min.	Typ.	Max.	
P _{OUT}	f = 3.1 — 3.5GHz	P _{IN} = 12.5W	V _{CC} = 40V	40	—	—	W
η _c	f = 3.1 — 3.5GHz	P _{IN} = 12.5W	V _{CC} = 40V	30	—	—	%
G _P	f = 3.1 — 3.5GHz	P _{IN} = 12.5W	V _{CC} = 40V	5.1	—	—	dB

Note: Pulse Width = 100μS
 Duty Cycle = 10%

PACKAGE MECHANICAL DATA



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