

RF & MICROWAVE TRANSISTORS S-BAND RADAR APPLICATIONS

PRELIMINARY DATA

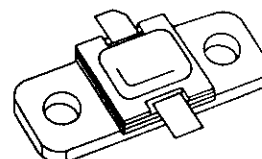
- REFRACTORY/GOLD METALLIZATION
- EMITTER SITE BALLASTED
- LOW THERMAL RESISTANCE
- INPUT/OUTPUT MATCHING
- OVERLAY GEOMETRY
- METAL/CERAMIC HERMETIC PACKAGE
- $P_{OUT} = 30 \text{ W MIN. WITH } 5.5 \text{ dB GAIN}$

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.



.310 x .310 2LFL (S064)
hermetically sealed

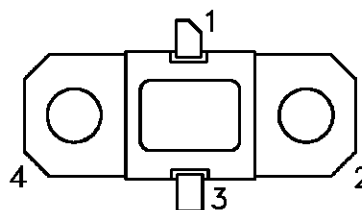
ORDER CODE

AM83135-030

BRANDING

AM83135-30

PIN CONNECTION



1. Collector

2. Base

3. Emitter

4. Base

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

Symbol	Parameter	Value	Unit
P_{DISS}	Power Dissipation* ($T_c \leq 50^{\circ}\text{C}$)	133	W
I_c	Device Current*	6.0	A
V_{CC}	Collector-Supply Voltage*	46	V
T_J	Junction Temperature (Pulsed RF Operation)	250	$^{\circ}\text{C}$
T_{STG}	Storage Temperature	- 65 to +200	$^{\circ}\text{C}$

THERMAL DATA

$R_{TH(j-c)}$	Junction-Case Thermal Resistance*	1.5	$^{\circ}\text{C/W}$
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*Applies only to rated RF amplifier operation

AM83135-030

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

STATIC

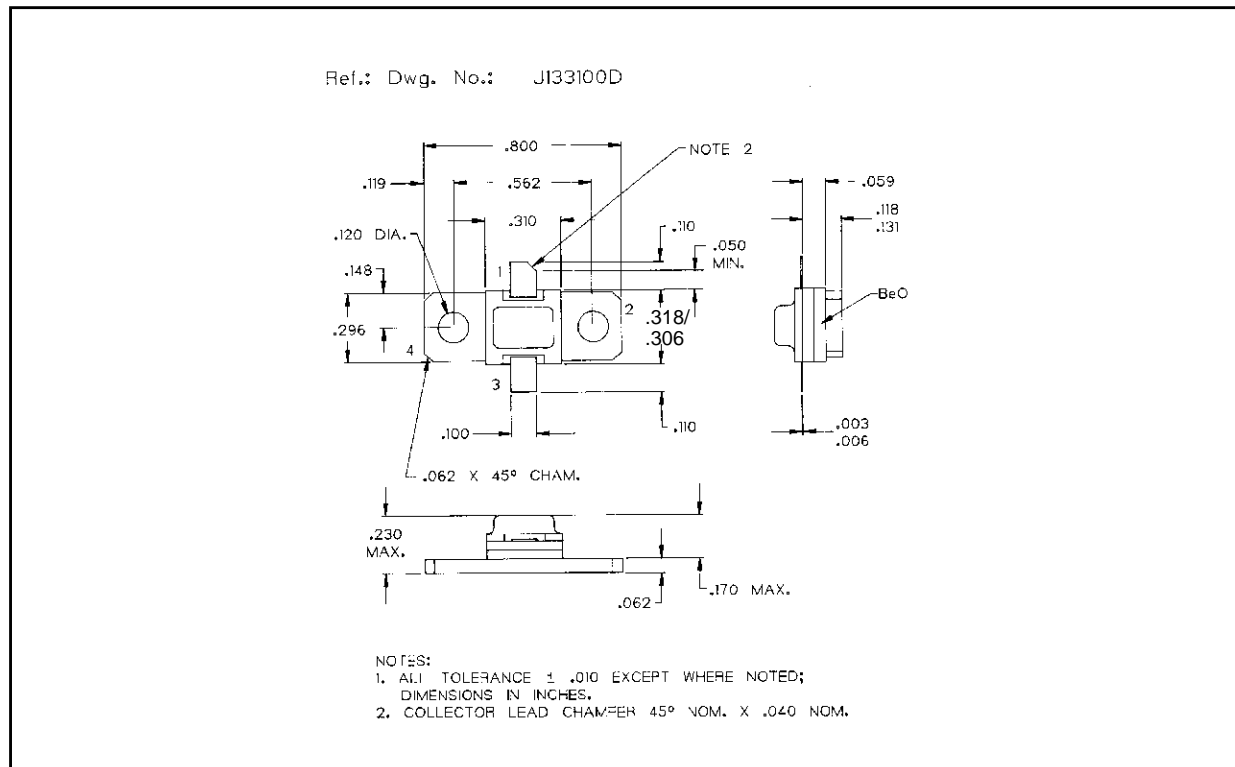
Symbol	Test Conditions	Value			Unit
		Min.	Typ.	Max.	
BV_{CBO}	$I_C = 20mA$ $I_E = 0mA$	55	—	—	V
BV_{EBO}	$I_E = 4mA$ $I_C = 0mA$	3.5	—	—	V
BV_{CER}	$I_C = 20mA$ $R_{BE} = 10\Omega$	55	—	—	V
I_{CES}	$V_{BE} = 0V$ $V_{CE} = 40V$	—	—	15	mA
h_{FE}	$V_{CE} = 5V$ $I_C = 2A$	30	—	300	—

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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