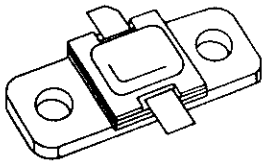
SGS-THOMSON MICROELECTRONICS

AM83135-015

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} = 15 W MIN. WITH 5.2 dB GAIN



.310 x .310 2LFL (S064)

ORDER CODE	BRANDING
AM83131-015	83135-15

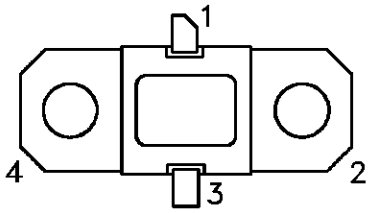
DESCRIPTION

The AM83135-015 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 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 AM83135-015 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.

PIN CONNECTION



1. Collector
2. Base
3. Emitter
4. Base

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

Symbol	Parameter	Value	Unit
P_{DISS}	Power Dissipation* ($T_C \leq 50°C$)	71	W
I_C	Device Current*	3.0	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*	2.8	°C/W

*Applies only to rated RF amplifier operation

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

STATIC

Symbol	Test Conditions		Value			Unit
			Min.	Typ.	Max.	
BV_{CBO}	I_C = 10 mA	I_E = 0 mA	55	—	—	V
BV_{EBO}	I_E = 2 mA	I_C = 0 mA	3.5	—	—	V
BV_{CER}	I_C = 10 mA	R_{BE} = 10 Ω	55	—	—	V
I_{CES}	V_{BE} = 0 V	V_{CE} = 40 V	—	—	8	mA
h_{FE}	V_{CE} = 5 V	I_C = 1 A	30	—	300	—

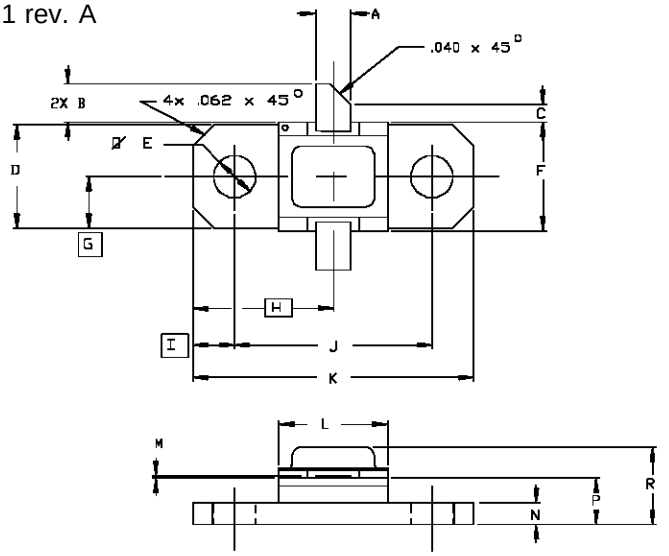
DYNAMIC

Symbol	Test Conditions			Value			Unit
				Min.	Typ.	Max.	
P_{OUT}	f = 3.1 – 3.5 GHz	P_{IN} = 4.5 W	V_{CC} = 40 V	15	—	—	W
ηc	f = 3.1 – 3.5 GHz	P_{OUT} = 15 W	V_{CC} = 40 V	30	—	—	%
P_G	f = 3.1 – 3.5 GHz	P_{OUT} = 15 W	V_{CC} = 40 V	5.2	—	—	dB

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

PACKAGE MECHANICAL DATA

Ref.: Dwg. No. 12-0221 rev. A



SGS-THOMSON MICROELECTRONICS		
	MINIMUM Inches/mm	MAXIMUM Inches/mm
A	.095/2,41	.105/2,67
B	.100/2,54	.120/3,05
C	.050/1,27	
D	.286/7,26	.306/7,77
E	.110/2,79	.130/3,30
F	.306/7,77	.318/8,08
G	.148/3,76	
H	.400/10,16	
I	.119/3,02	
J	.552/14,02	.572/14,53

CONT'D		
	MINIMUM Inches/mm	MAXIMUM Inches/mm
K	.790/20,07	.810/20,57
L	.300/7.62	.320/8,13
M	.003/0,08	.006/0,15
N	.052/1,32	.072/1,83
P	.118/3,00	.131/3,33
R		.230/5,84