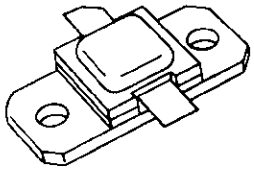
SGS-THOMSON MICROELECTRONICS

AM82731-012

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} = 12 W MIN. WITH 6.0 dB GAIN



.400 x .400 2LFL (S036)
hermetically sealed

ORDER CODE	BRANDING
AM82731-012	82731-12

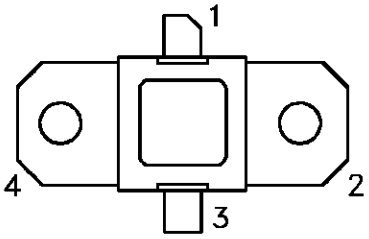
DESCRIPTION

The AM82731-012 device is a high power silicon bipolar NPN transistor specifically designed for S-Band radar pulsed output and driver applications.

This device is capable of operaion over a wide 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 automatic wire bonding techniques ensure high reliability and product consistency (including phase characteristics).

The AM82731-012 is supplied in the Hermetic Metal/Ceramic package with internal Input/Output impedance matching sircuitry, 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* ($T_C \leq 50°C$)	50	W
I_C	Device Current*	2.0	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*	4.0	°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 = 7mA	I_E = 0mA	55	—	—	V
BV_{EBO}	I_E = 1mA	I_C = 0mA	3.5	—	—	V
BV_{CER}	IC = 7mA	R_{BE} = 10Ω	55	—	—	V
I_{CES}	V_{CE} = 40V		—	—	5	mA
h_{FE}	V_{CE} = V	I_C = 600mA	30	—	300	—

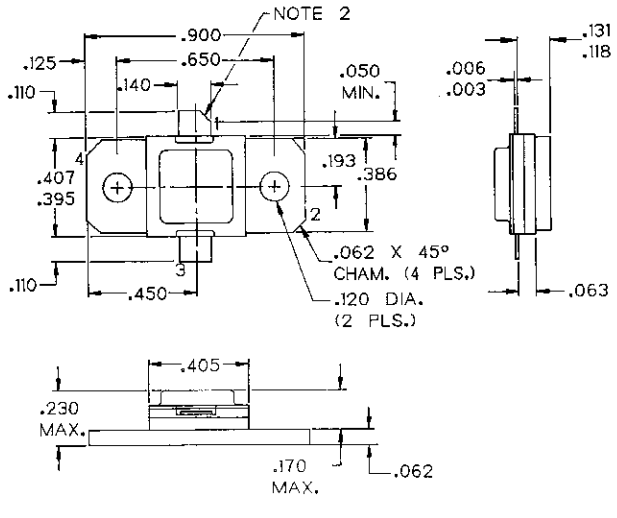
DYNAMIC

Symbol	Test Conditions			Value			Unit
				Min.	Typ.	Max.	
P_{OUT}	f = 2700 —3100 MHz	P_{IN} = 3.0W	V_{CC} = 40V	12	—	—	W
ηc	f = 2700 —3100 MHz	P_{IN} = 3.0W	V_{CC} = 40V	30	—	—	%
G_P	f = 2700 —3100 MHz	P_{IN} = 3.0W	V_{CC} = 40V	6.0	—	—	dB

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

PACKAGE MECHANICAL DATA

Ref.: Dwg. No.: J133102E



NOTES:
1. ALL TOLERANCE ± .010 EXCEPT WHERE NOTED; DIMENSIONS IN INCHES.
2. COLLECTOR LEAD CHAMFER 45° NOM. X .040 NOM.