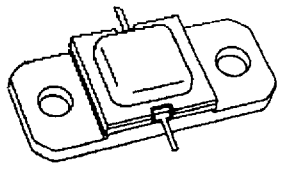
SGS-THOMSON MICROELECTRONICS

AM80610-018

RF & MICROWAVE TRANSISTORS UHF COMMUNICATIONS APPLICATIONS

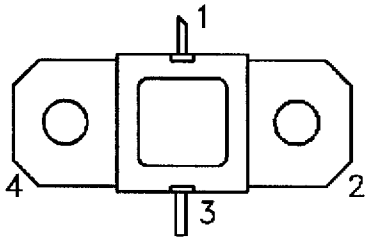
- REFRACTORY/GOLD METALLIZATION
- EMITTER SITE BALLASTED
- LOW THERMAL RESISTANCE
- INPUT/OUTPUT MATCHING
- OVERLAY GEOMETRY
- METAL/CERAMIC HERMETIC PACKAGE
- P_{OUT} = 18 W MIN. WITH 8.6 dB GAIN



.400 x .400 2NLFL (S042)
hermetically sealed

ORDER CODE	BRANDING
AM80610-18	80610-18

PIN CONNECTION



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

DESCRIPTION

The AM80610-018 is a high power, common base NPN silicon bipolar device optimized for CW operation in the 620 - 960 MHz frequency range.

AM80610-018 utilizes a rugged, overlay, emitter-ballasted L-Band die geometry to achieve high gain and collector efficiency and is suitable for driver or output stage use in Class C power amplifiers. Typical applications include military communications, ECM, and test equipment.

The AM80610-018 is provided in the industry-standard, metal/ceramic AMPAC™ hermetic pack-

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

Symbol	Parameter	Value	Unit
P_{DISS}	Power Dissipation* ($T_C \leq 50°C$)	40	W
I_C	Device Current*	2.0	A
V_{CC}	Collector-Supply Voltage*	32	V
T_J	Junction Temperature	200	°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)

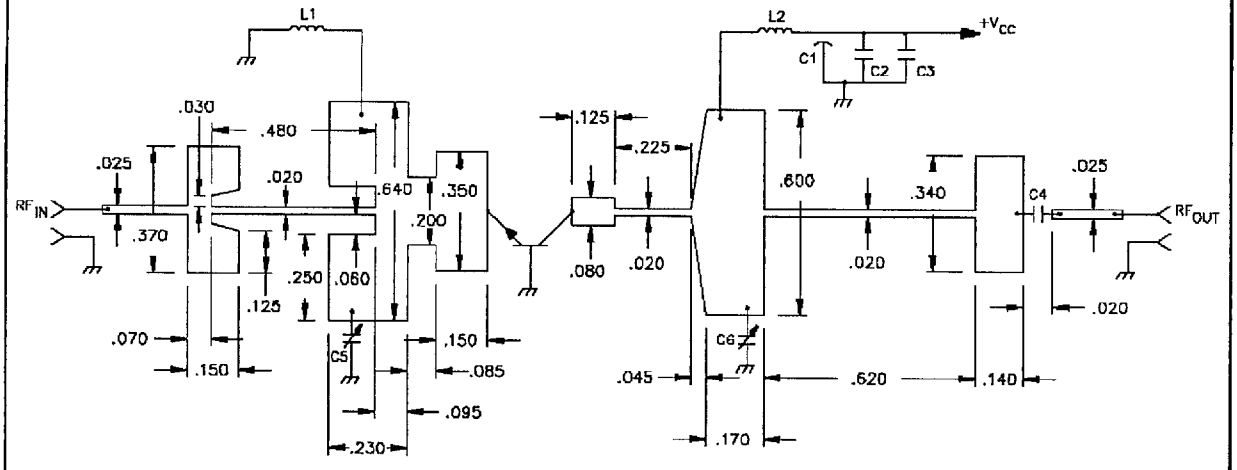
STATIC

Symbol	Test Conditions		Value			Unit
			Min.	Typ.	Max.	
BV_{CBO}	I_C = 10mA	I_E = 0mA	55	—	—	V
BV_{EBO}	I_E = 1mA	I_C = 0mA	3.5	—	—	V
BV_{CER}	IC = 20mA	R_{BE} = 10Ω	55	—	—	V
I_{CES}	V_{BE} = 0V	V_{CE} = 28V	—	—	5	mA
h_{FE}	V_{CE} = 5V	I_C = 1A	15	—	150	—

DYNAMIC

Symbol	Test Conditions			Value			Unit
				Min.	Typ.	Max.	
P_{OUT}	f = 620 — 960MHz	P_{IN} = 2.5W	V_{CC} = 28V	18	—	—	W
η_C	f = 620 — 960MHz	P_{IN} = 2.5W	V_{CC} = 28V	48	—	—	%
G_P	f = 620 — 960MHz	P_{IN} = 2.5W	V_{CC} = 28V	8.6	—	—	dB

TEST CIRCUIT

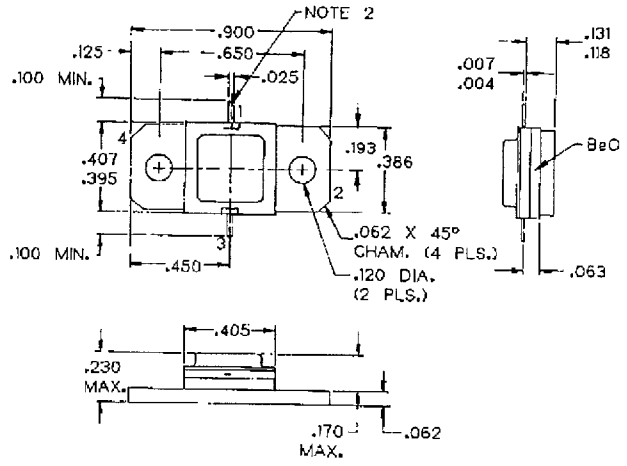


All dimensions are in inches.
Substrate material: AL_2O_3 .025" thick (Er = 9.6)

C1 : 1500 pF Feedthrough
C2 : 100 mF Electrolytic
C3 : .1µF Disc
C4 : 100 pF Chip
C5,C6 : .3 - 3.5 pF Gigatrim Capacitor
L1 : 5 Turns #26 Wire 1/16" I.D.
L2 : 3 Turns #26 Wire 1/16" I.D.

PACKAGE MECHANICAL DATA

Ref.: Dwg. No.: J113214F



NOTES:
1. ALL TOLERANCE ± .010 EXCEPT WHERE NOTED; DIMENSIONS IN INCHES.
2. COLLECTOR LEAD SLANT CUT.