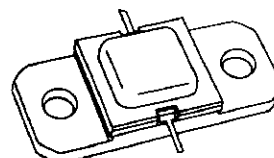


RF & MICROWAVE TRANSISTORS L-BAND AVIONICS APPLICATIONS

- REFRACTORY/GOLD METALLIZATION
- EMITTER SITE BALLASTED
- LOW THERMAL RESISTANCE
- INPUT/OUTPUT MATCHING
- OVERLAY GEOMETRY
- METAL/CERAMIC HERMETIC PACKAGE
- $P_{OUT} = 70 \text{ W MIN. WITH } 6.7 \text{ dB GAIN}$



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

ORDER CODE

AM1011-70

BRANDING

1011-70

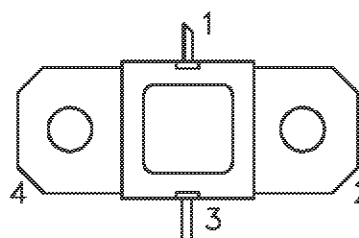
DESCRIPTION

The AM1011-070 device is a high power Class C transistor specifically designed for L-Band Avionics transponder/interrogator pulsed output and driver applications.

This device is capable of operation over a wide range of pulse widths, duty cycles and temperatures and is capable of withstanding severe output VSWR at rated RF conditions. Low RF thermal resistance and computerized automatic wire bonding techniques ensure high reliability and product consistency.

The AM1011-070 is supplied in the AMPAC™ Hermetic Metal/Ceramic package with internal Input/Output matching structures.

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* ($T_C \leq 100^{\circ}\text{C}$)	200	W
I_C	Device Current*	8.0	A
V_{CC}	Collector-Supply Voltage*	32	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*	0.68	$^{\circ}\text{C/W}$
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*Applies only to rated RF amplifier operation

AM1011-070

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

STATIC

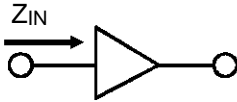
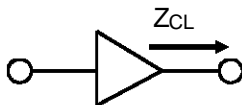
Symbol	Test Conditions		Value			Unit
			Min.	Typ.	Max.	
BV_{CBO}	$I_{\text{C}} = 25\text{mA}$	$I_{\text{E}} = 0\text{mA}$	55	—	—	V
BV_{EBO}	$I_{\text{E}} = 10\text{mA}$	$I_{\text{C}} = 0\text{mA}$	3.5	—	—	V
BV_{CER}	$I_{\text{C}} = 25\text{mA}$	$R_{\text{BE}} = 10\Omega$	55	—	—	V
I_{CES}	$V_{\text{CE}} = 35\text{V}$		—	—	20	mA
h_{FE}	$V_{\text{CE}} = 5\text{V}$	$I_{\text{C}} = 2\text{mA}$	20	—	200	—

DYNAMIC

Symbol	Test Conditions			Value			Unit
				Min.	Typ.	Max.	
P_{OUT}	$f = 1090\text{ MHz}$	$P_{\text{IN}} = 15\text{W}$	$V_{\text{CC}} = 28\text{V}$	70	—	—	W
η_{C}	$f = 1090\text{ MHz}$	$P_{\text{IN}} = 15\text{W}$	$V_{\text{CC}} = 28\text{V}$	45	—	—	%
G_{P}	$f = 1090\text{ MHz}$	$P_{\text{IN}} = 15\text{W}$	$V_{\text{CC}} = 28\text{V}$	6.7	—	—	dB

Note: Pulse Width = $100\mu\text{Sec}$
Duty Cycle = 2%

IMPEDANCE DATA

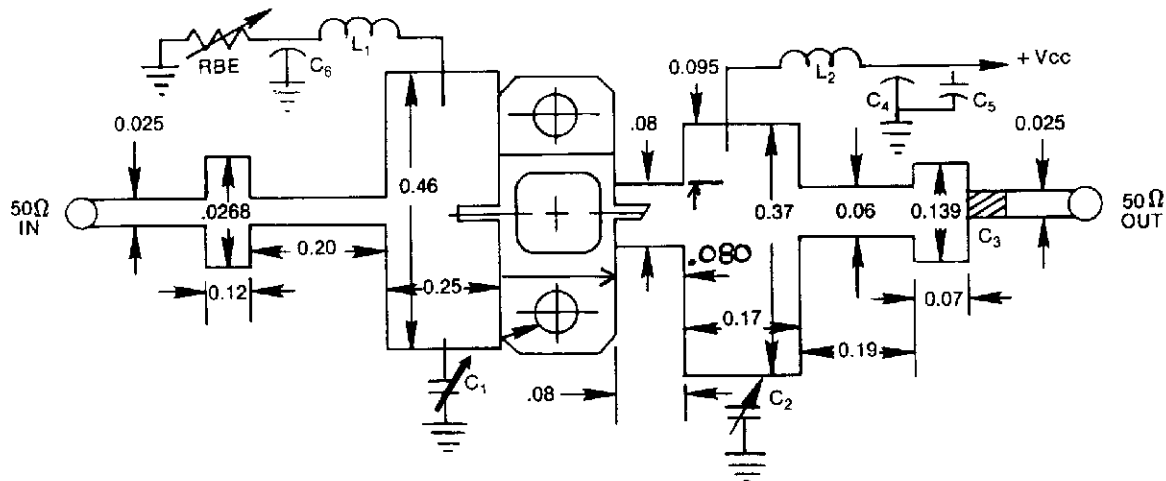
TYPICAL INPUT
IMPEDANCETYPICAL COLLECTOR
LOAD IMPEDANCE

$P_{IN} = 15 \text{ W}$
 $V_{CC} = 28 \text{ V}$
 Normalized to 50 ohms

FREQ.	$Z_{IN} (\Omega)$	$Z_{CL} (\Omega)$
L = 1025 MHz	$4.7 + j 4.7$	$3.6 + j 4.3$
H = 1090 MHz	$4.7 + j 3.9$	$3.3 + j 4.4$

TEST CIRCUIT

Ref. Dwg. No. J313119



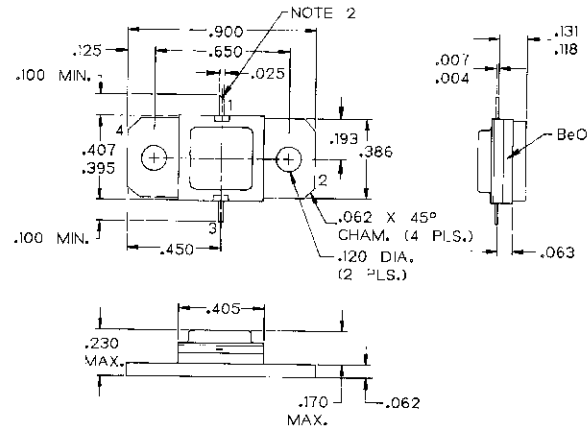
All dimensions are in inches.
 Substrate material: .025 thick Al_2O_3

C1 : 0.3—3.5 pF Johanson Gigatrim Capacitor
 C2 : 0.3—3.5 pF Johanson Gigatrim Capacitor
 C3 : 100 pF Chip Capacitor
 C4 : 1500 pF Erie Feedthru, or Equiv.

C5 : 100 MF Electrolytic Capacitor, 50V
 C6 : 1500 pF Erie Feedthru, or Equiv.
 L1 : #32 Wire, 4 Turn .062 I.D.
 L2 : #32 Wire, 4 Turn .062 I.D.
 RBE : 0 — 1.0 Ohm

PACKAGE MECHANICAL DATA

Ref.: Dwg. No.: J113214F



NOTES:

1. ALL TOLERANCE $\pm .010$ EXCEPT WHERE NOTED;
DIMENSIONS IN INCHES.
2. COLLECTOR LEAD SLANT CUT.

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