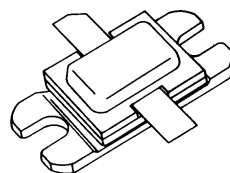


RF & MICROWAVE TRANSISTORS L-BAND AVIONICS APPLICATIONS

- REFRACTORY/GOLD METALLIZATION
- EMITTER SITE BALLASTED
- 15:1 VSWR CAPABILITY
- LOW THERMAL RESISTANCE
- INPUT/OUTPUT MATCHING
- OVERLAY GEOMETRY
- METAL/CERAMIC HERMETIC PACKAGE
- $P_{OUT} = 400\text{ W MIN. WITH } 8.0\text{ dB GAIN}$



.400 x .500 2LFL (S038)
hermetically sealed

ORDER CODE
AM1011-400

BRANDING
1011-400

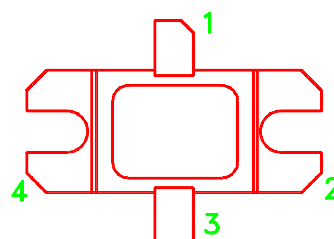
DESCRIPTION

The AM1011-400 device is a high power Class C transistor specifically designed for TCAS and Mode-S pulsed output and driver applications.

This device is designed for operation under moderate pulse width and duty cycle pulse conditions and is capable of withstanding 15:1 output VSWR at rated RF conditions. Low RF thermal resistance and computerized automatic wire bonding techniques ensure high reliability and product consistency.

The AM1011-400 is supplied in the BIGPAC™ Hermetic Metal/Ceramic package Input/Output matching structures.

PIN CONNECTION



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

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

Symbol	Parameter	Value	Unit
P_{DISS}	Power Dissipation* ($T_C \leq 100^{\circ}\text{C}$)	880	W
I_C	Device Current*	24	A
V_{CC}	Collector-Supply Voltage*	55	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*	0.17	$^{\circ}\text{C/W}$
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*Applies only to rated RF amplifier operation

AM1011-400

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

STATIC

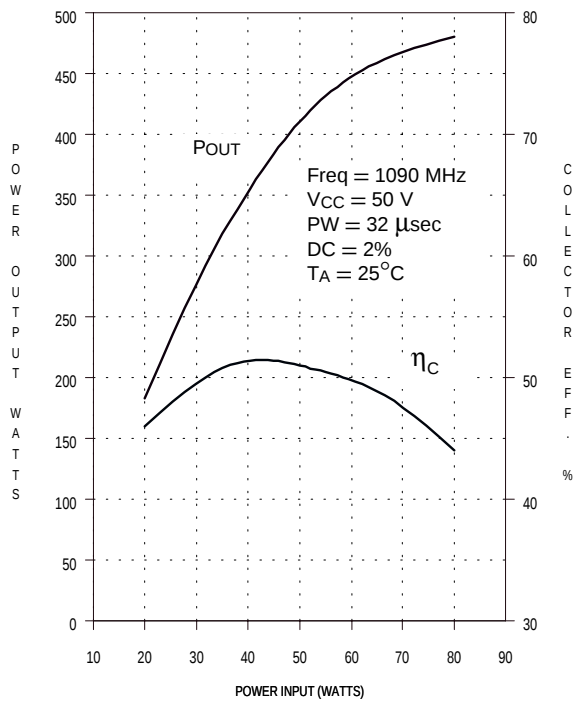
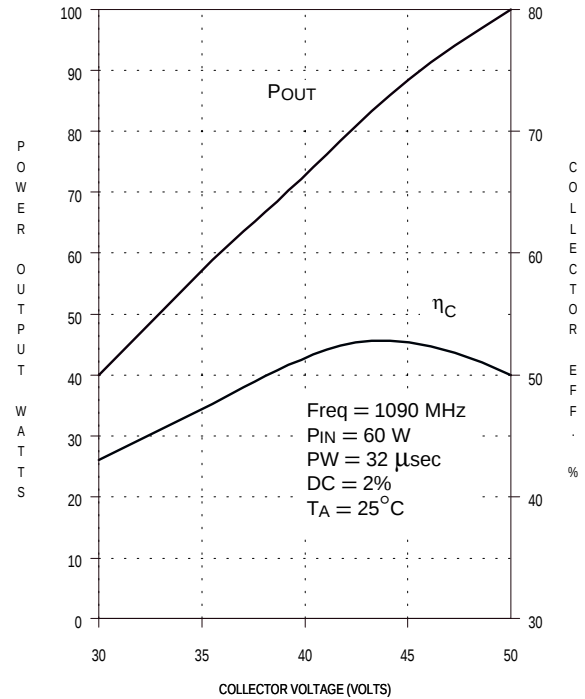
Symbol	Test Conditions		Value			Unit
			Min.	Typ.	Max.	
BV_{CBO}	$I_{\text{C}} = 50\text{mA}$	$I_{\text{E}} = 0\text{mA}$	65	—	—	V
BV_{EBO}	$I_{\text{E}} = 15\text{mA}$	$I_{\text{C}} = 0\text{mA}$	3.5	—	—	V
BV_{CER}	$I_{\text{C}} = 50\text{mA}$	$R_{\text{BE}} = 10\Omega$	65	—	—	V
I_{CES}	$V_{\text{BE}} = 50\text{V}$	$V_{\text{CE}} = 0\text{V}$	—	—	30	mA
h_{FE}	$V_{\text{CE}} = 5\text{V}$	$I_{\text{C}} = 5\text{A}$	10	—	—	—

DYNAMIC

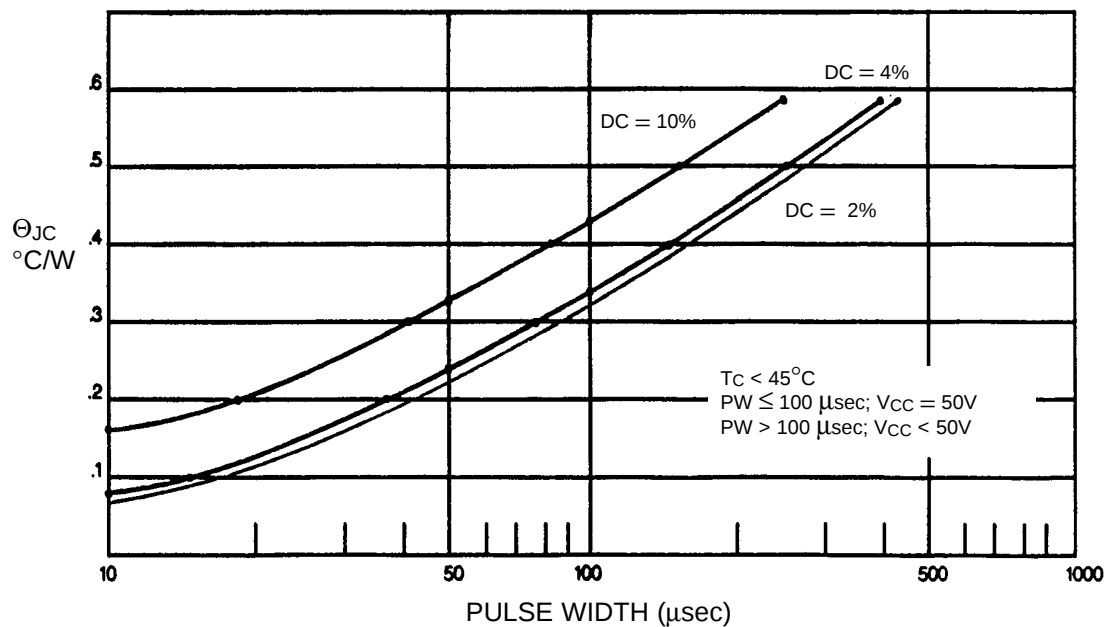
Symbol	Test Conditions			Value			Unit
				Min.	Typ.	Max.	
P_{OUT}	$f = 1090\text{MHz}$	$P_{\text{IN}} = 63\text{W}$	$V_{\text{CC}} = 50\text{V}$	400	450	—	W
η_{c}	$f = 1090\text{MHz}$	$P_{\text{IN}} = 63\text{W}$	$V_{\text{CC}} = 50\text{V}$	45	50	—	%
G_{P}	$f = 1090\text{MHz}$	$P_{\text{IN}} = 63\text{W}$	$V_{\text{CC}} = 50\text{V}$	8.0	8.5	—	dB

Note: Pulse Width = $32\mu\text{Sec}$
Duty Cycle = 2%

TYPICAL PERFORMANCE

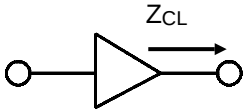
TYPICAL NARROWBAND
POWER AMPLIFIERTYPICAL RELATIVE OUTPUT
POWER & COLLECTOR EFFICIENCY
vs COLLECTOR VOLTAGE

MAXIMUM THERMAL RESISTANCE vs PULSE WIDTH & DUTY CYCLE



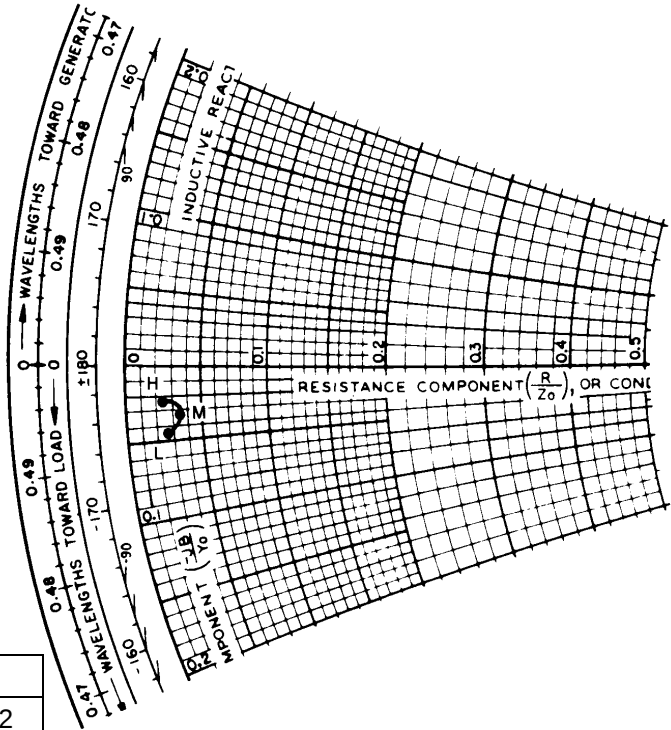
IMPEDANCE DATA

TYPICAL COLLECTOR
LOAD IMPEDANCE

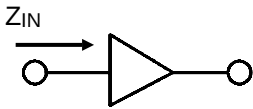


$P_{IN} = 63 \text{ W}$
 $V_{CC} = +50 \text{ V}$
 $Z_{O^*} = 50 \Omega$

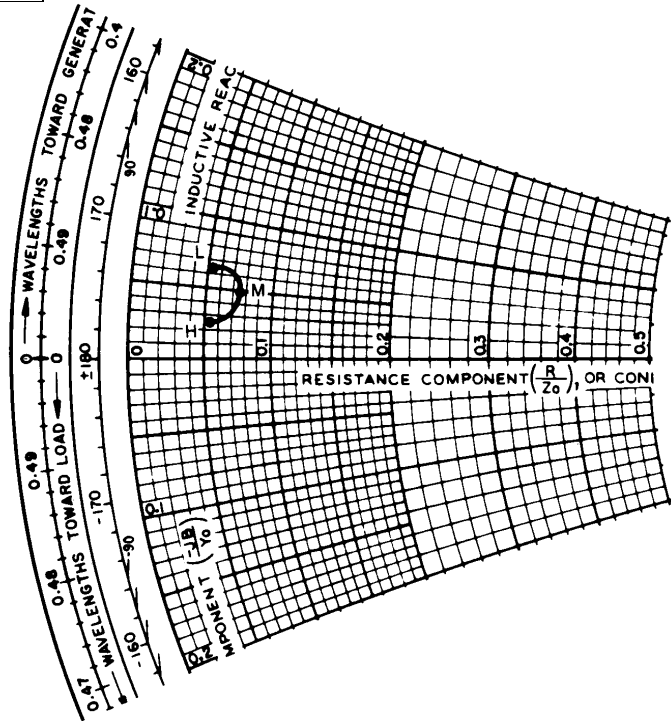
FREQ.	$Z_{IN} (\Omega)$	$Z_{CL} (\Omega)$
L = 1025 MHz	$2.4 + j 3.2$	$1.4 - j 2.2$
M = 1090 MHz	$3.8 + j 2.5$	$1.6 - j 1.6$
H = 1150 MHz	$2.3 + j 1.3$	$1.2 - j 1.1$



TYPICAL INPUT
IMPEDANCE

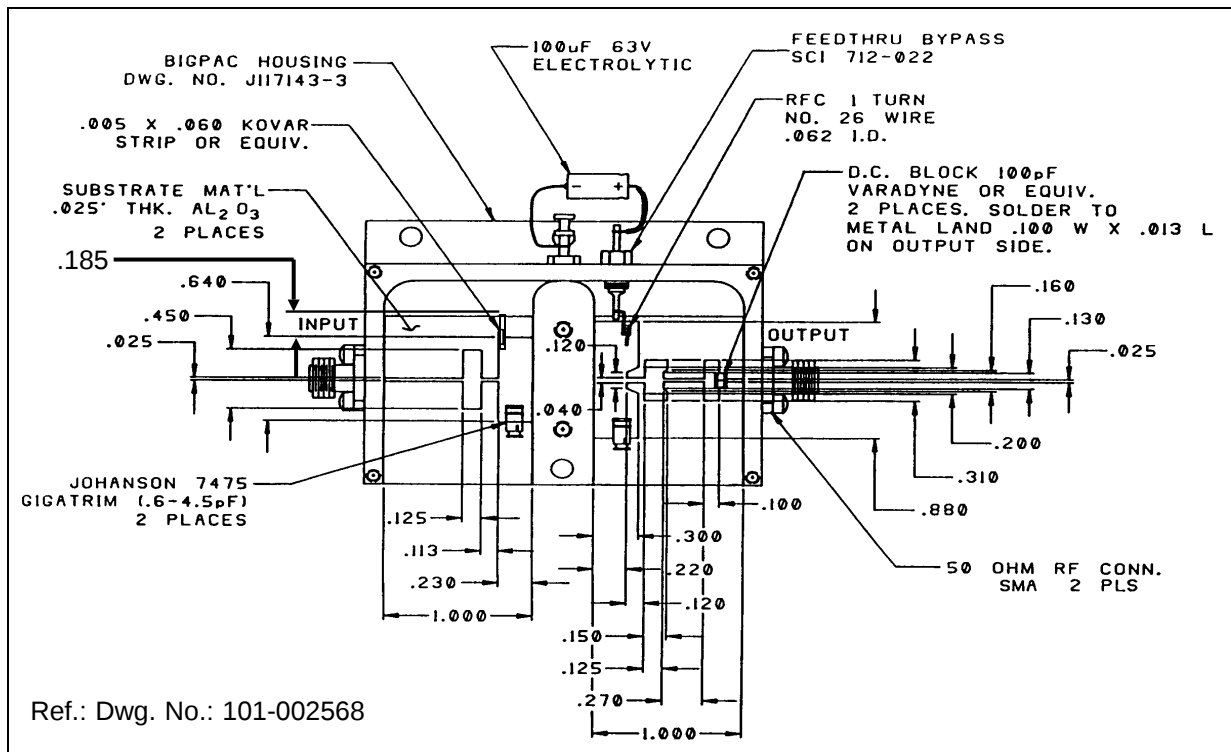


$P_{IN} = 63 \text{ W}$
 $V_{CC} = +50 \text{ V}$
 $Z_{O^*} = 50 \Omega$



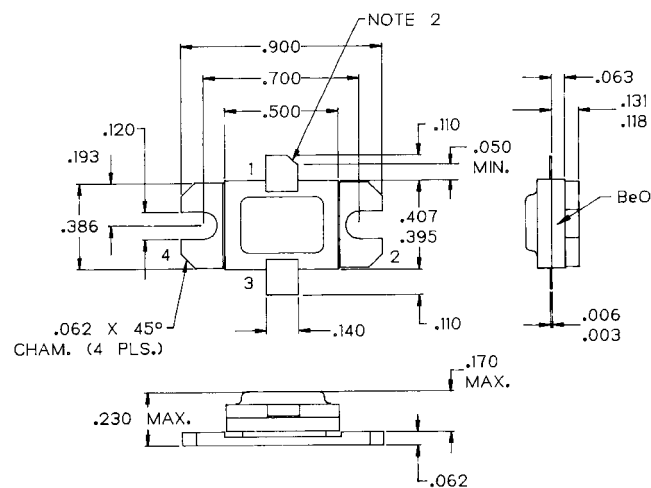
*Normalized Impedance

TEST CIRCUIT



PACKAGE MECHANICAL DATA

Ref.: Dwg. No.: J135066F



NOTES:

1. ALL TOLERANCE $\pm .010$ EXCEPT WHERE NOTED;
DIMENSIONS IN INCHES.
2. COLLECTOR LEAD CHAMFER 45° NOM. X .040 NOM.

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