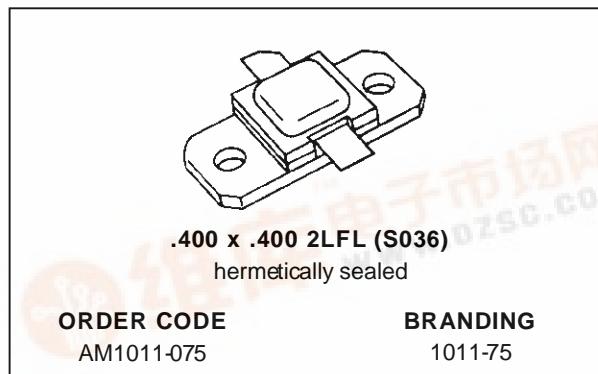




AM1011-075

## RF & MICROWAVE TRANSISTORS L-BAND AVIONICS APPLICATIONS

- REFRACTORY/GOLD METALLIZATION
- Emitter SITE BALLASTED
- 10:1 VSWR CAPABILITY
- LOW THERMAL RESISTANCE
- INPUT/OUTPUT MATCHING
- OVERLAY GEOMETRY
- METAL/CERAMIC HERMETIC PACKAGE
- POUT = 75 W MIN. WITH 9.2 dB GAIN

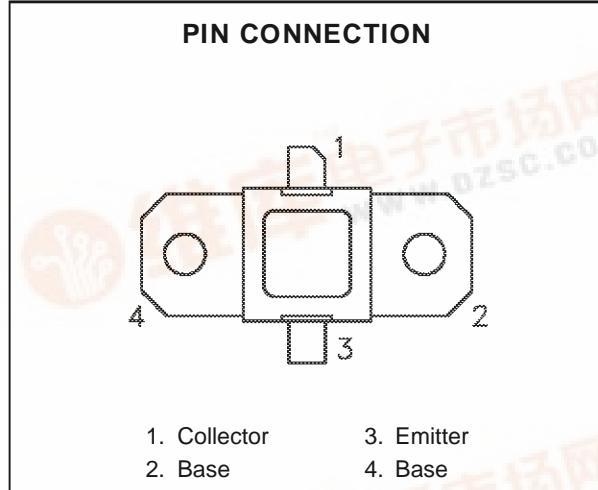


### DESCRIPTION

The AM1011-075 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 10:1 output VSWR at rated RF conditions. Low RF thermal resistance and computerized automatic wire bonding techniques ensure high reliability and product consistency.

The AM1011-075 is supplied in the AMPAC™ Hermetic Metal/Ceramic package with internal Input/Output matching structures.



### ABSOLUTE MAXIMUM RATINGS (T<sub>case</sub> = 25°C)

Symbol	Parameter	Value	Unit
P <sub>DISS</sub>	Power Dissipation* (T <sub>c</sub> ≤ 100°C)	175	W
I <sub>c</sub>	Device Current*	5.4	A
V <sub>CC</sub>	Collector-Supply Voltage*	55	V
T <sub>J</sub>	Junction Temperature (Pulsed RF Operation)	250	°C
T <sub>STG</sub>	Storage Temperature	– 65 to +200	°C

### THERMAL DATA

R <sub>TH(j-c)</sub>	Junction-Case Thermal Resistance*	0.86	°C/W
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\* Applies only to rated RF amplifier operation

## AM1011-075

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

#### STATIC

Symbol	Test Conditions	Value			Unit
		Min.	Typ.	Max.	
$BV_{CBO}$	$I_C = 10\text{mA}$ $I_E = 0\text{mA}$	65	—	—	V
$BV_{EBO}$	$I_E = 4\text{mA}$ $I_C = 0\text{mA}$	3.5	—	—	V
$BV_{CER}$	$I_C = 20\text{mA}$ $R_{BE} = 10\Omega$	65	—	—	V
$I_{CES}$	$V_{CE} = 50\text{V}$	—	—	6	mA
$h_{FE}$	$V_{CE} = 5\text{V}$ $I_C = 1\text{mA}$	10	—	—	—

#### DYNAMIC

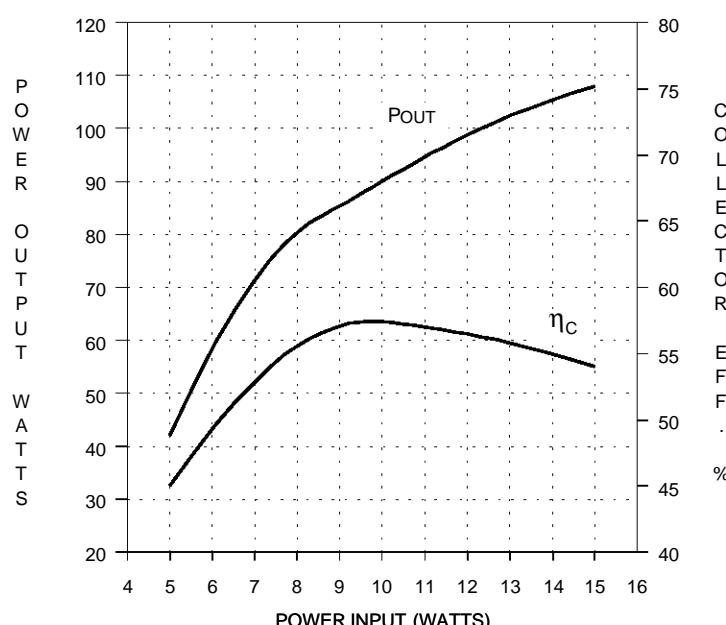
Symbol	Test Conditions	Value			Unit
		Min.	Typ.	Max.	
$P_{OUT}$	$f = 1090\text{MHz}$ $P_{IN} = 9\text{W Peak}$ $V_{CC} = 50\text{V}$	75	84	—	W
$\eta_C$	$f = 1090\text{MHz}$ $P_{IN} = 9\text{W Peak}$ $V_{CC} = 50\text{V}$	48	56	—	%
$G_P$	$f = 1090\text{MHz}$ $P_{IN} = 9\text{W Peak}$ $V_{CC} = 50\text{V}$	9.2	9.7	—	dB

Note: Pulse Width =  $32\mu\text{Sec}$

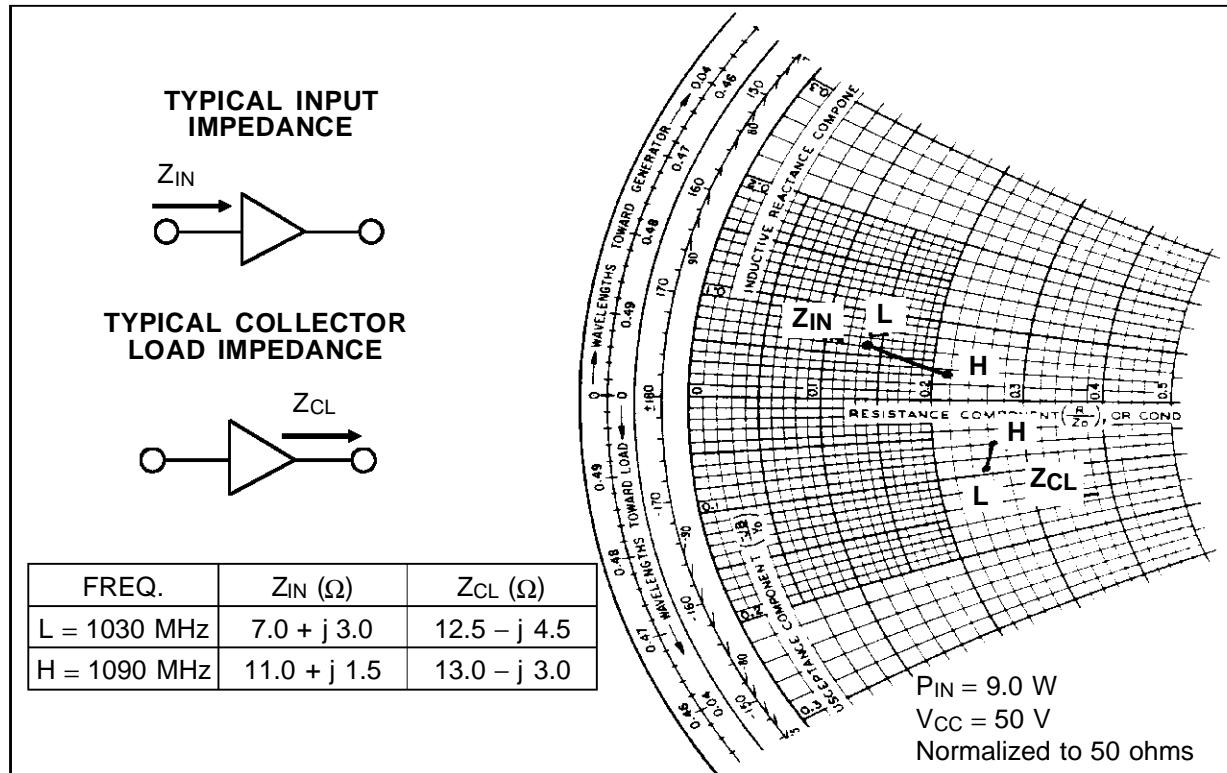
Duty Cycle = 2%

#### TYPICAL PERFORMANCE

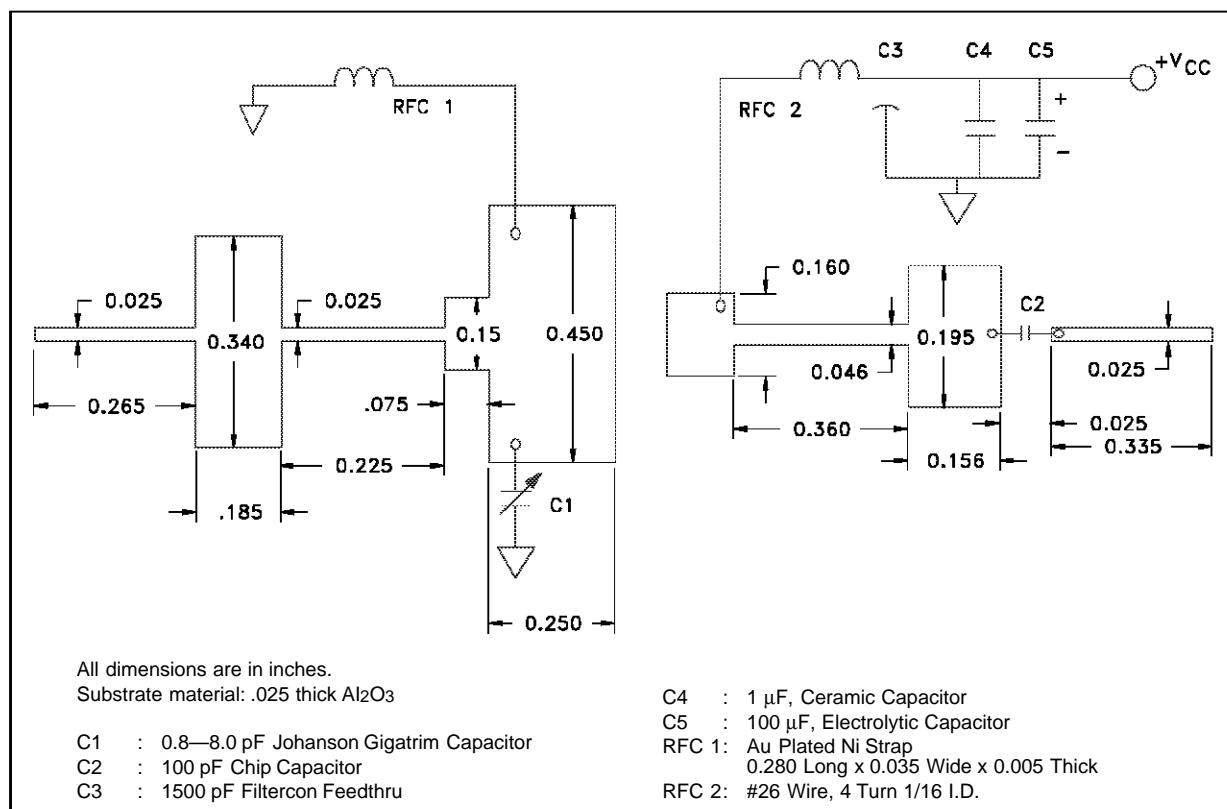
TYPICAL POWER OUTPUT &  
COLLECTOR EFFICIENCY vs  
POWER INPUT



## IMPEDANCE DATA



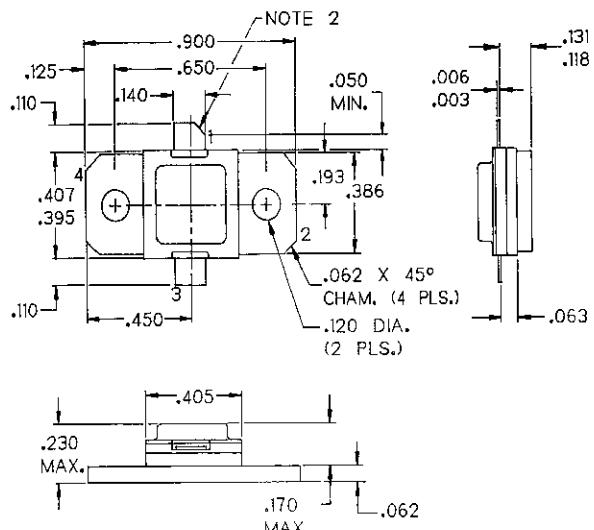
## TEST CIRCUIT



## AM1011-075

### PACKAGE MECHANICAL DATA

Ref.: Dwg. No.: J133102E



#### NOTES:

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

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