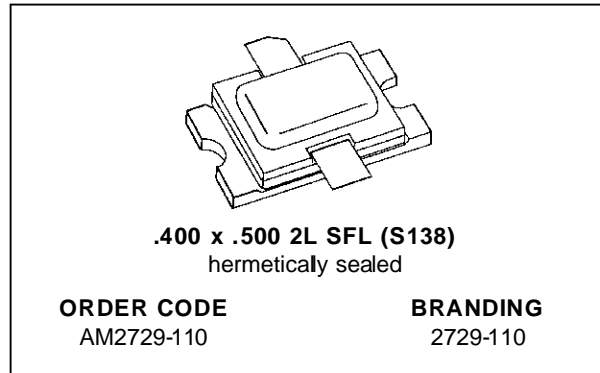


## RF & MICROWAVE TRANSISTORS S-BAND RADAR APPLICATIONS

- REFRACTORY/GOLD METALLIZATION
- EMITTER SITE BALLASTED
- 3:1 VSWR CAPABILITY
- LOW THERMAL RESISTANCE
- INPUT/OUTPUT MATCHING
- OVERLAY GEOMETRY
- METAL/CERAMIC HERMETIC PACKAGE
- P<sub>OUT</sub> = 105 W MIN. WITH 6.5 dB GAIN

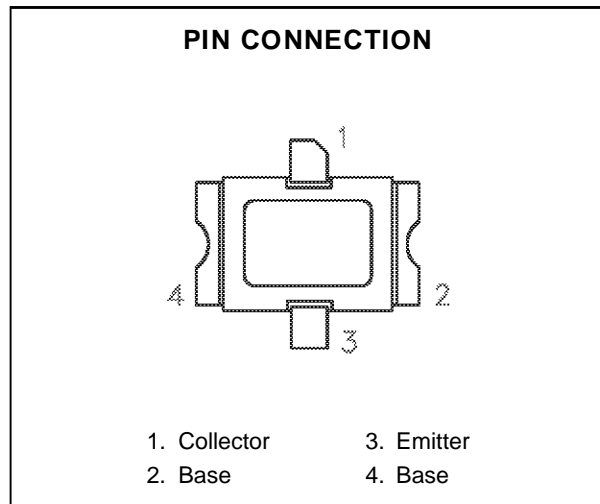


### DESCRIPTION

The AM2729-110 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 operation over a wide range of pulse widths, duty cycles and temperatures and can withstand a 3:1 output VSWR. Low RF thermal resistance, refractory/gold metallization, and computerized automatic wire bonding techniques ensure high reliability and product consistency (including phase characteristics).

The AM2729-110 is supplied in the BIGPAC™ Hermetic Metal/Ceramic package with internal Input/Output matching circuitry, and is intended for military and other high reliability applications.



### 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)	438	W
I <sub>C</sub>	Device Current*	12	A
V <sub>CC</sub>	Collector-Supply Voltage*	48	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*	0.4	°C/W
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\*Applies only to rated RF amplifier operation

# AM2729-110

## ELECTRICAL SPECIFICATIONS (T<sub>case</sub> = 25°C)

### STATIC

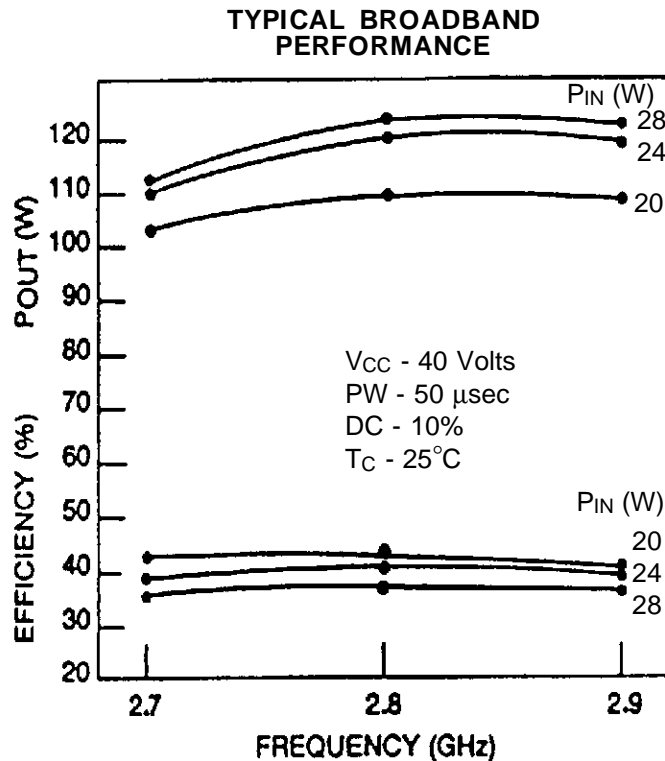
Symbol	Test Conditions		Value			Unit
			Min.	Typ.	Max.	
BV <sub>CBO</sub>	I <sub>C</sub> = 40mA	I <sub>E</sub> = 0mA	55	—	—	V
BV <sub>EBO</sub>	I <sub>E</sub> = 8mA	I <sub>C</sub> = 0mA	3.5	—	—	V
BV <sub>CER</sub>	I <sub>C</sub> = 40mA	R <sub>BE</sub> = 10Ω	55	—	—	V
I <sub>CES</sub>	V <sub>BE</sub> = 0V	V <sub>CE</sub> = 40V	—	—	30	mA
h <sub>FE</sub>	V <sub>CE</sub> = 5V	I <sub>C</sub> = 4A	30	—	—	—

### DYNAMIC

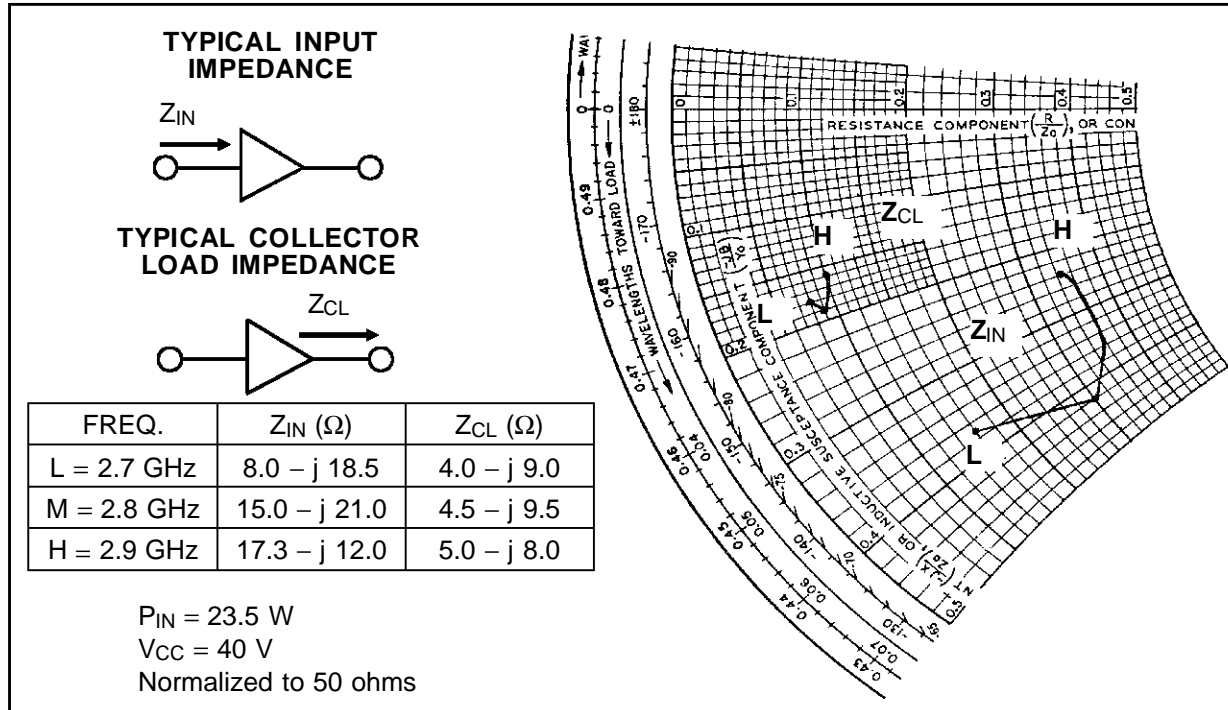
Symbol	Test Conditions			Value			Unit
				Min.	Typ.	Max.	
P <sub>OUT</sub>	f = 2700 — 2900MHz	P <sub>IN</sub> = 23.5W	V <sub>CC</sub> = 40V	105	115	—	W
η <sub>c</sub>	f = 2700 — 2900MHz	P <sub>IN</sub> = 23.5W	V <sub>CC</sub> = 40V	33	40	—	%
G <sub>P</sub>	f = 2700 — 2900MHz	P <sub>IN</sub> = 23.5W	V <sub>CC</sub> = 40V	6.5	6.9	—	dB

Note: Pulse Width = 50 μSec  
Duty Cycle = 10%

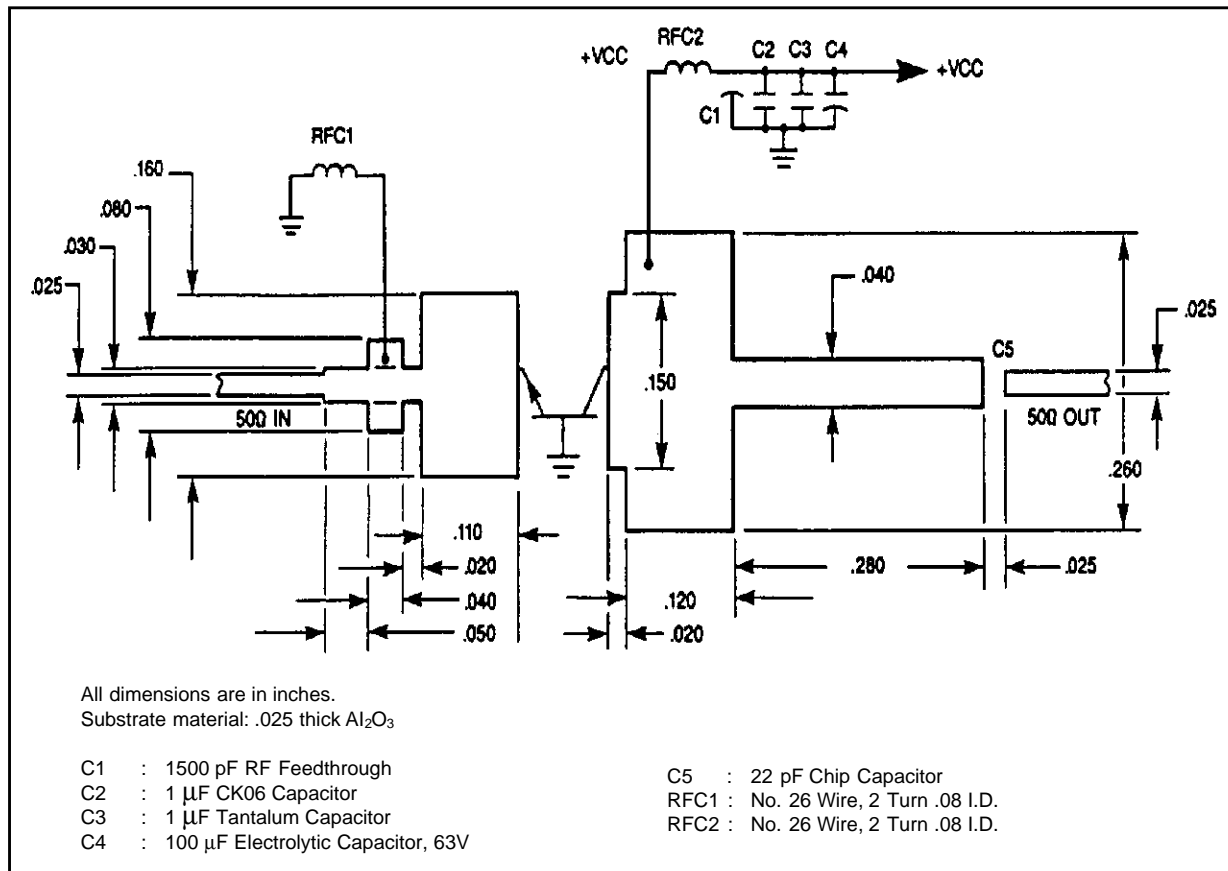
### TYPICAL PERFORMANCE



IMPEDANCE DATA

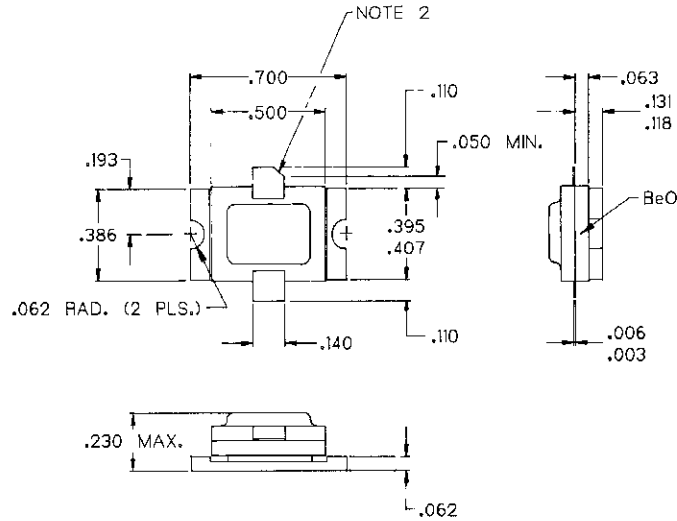


TEST CIRCUIT



PACKAGE MECHANICAL DATA

Ref.: Dwg. No.: 103-000737A



NOTES:

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

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