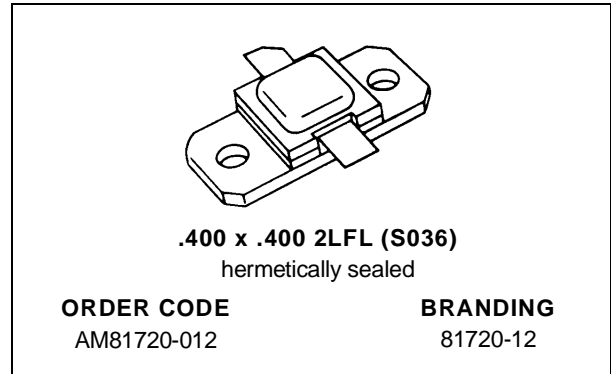


## RF & MICROWAVE TRANSISTORS COMMUNICATIONS APPLICATIONS

- REFRACTORY/GOLD METALLIZATION
- EMITTER SITE BALLASTED
- RUGGIZED VSWR  $\infty:1$
- LOW THERMAL RESISTANCE
- INPUT/OUTPUT MATCHING
- OVERLAY GEOMETRY
- METAL/CERAMIC HERMETIC PACKAGE
- $P_{OUT} = 12$  W MIN. WITH 7.4 dB GAIN

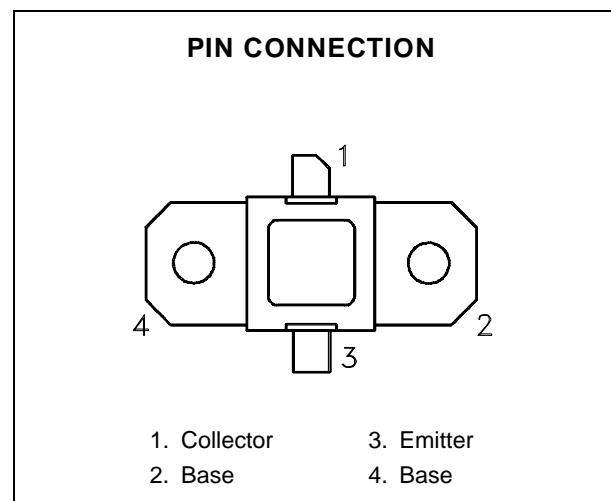


### DESCRIPTION

The AM81720-012 is designed specifically for Telecommunications applications.

The device is capable of withstanding any mismatch load condition at any phase angle (VSWR  $\infty:1$ ) under full rated conditions. The unit is an overlay, emitter site ballasted, geometry utilizing a refractory/gold metallization system.

The unique AMPAC™ devices are housed in Hermetic Metal/Ceramic packages with internal Input/Output matching structures.



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

Symbol	Parameter	Value	Unit
$P_{DISS}$	Power Dissipation*	31.8	W
$I_C$	Device Current*	1.47	A
$V_{CC}$	Collector-Supply Voltage*	24	V
$T_J$	Junction Temperature	200	$^{\circ}C$
$T_{STG}$	Storage Temperature	- 65 to +200	$^{\circ}C$

### THERMAL DATA

$R_{TH(j-c)}$	Junction-Case Thermal Resistance	5.5	$^{\circ}C/W$
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\*Applies only to rated RF amplifier operation

NOTE: Thermal Resistance determined by Infra-Red Scanning of Hot-Spot Junction Temperature at rated RF operating conditions.

# AM81720-012

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

### STATIC

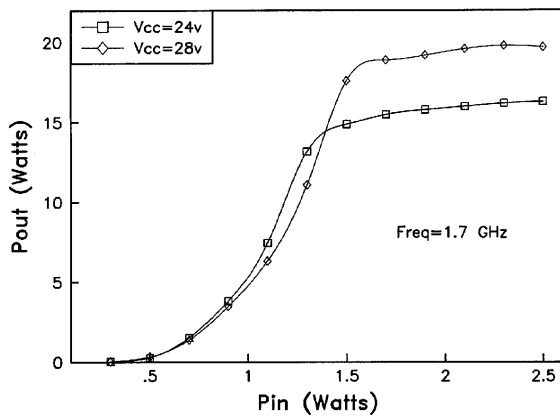
Symbol	Test Conditions		Value			Unit
			Min.	Typ.	Max.	
BV <sub>CBO</sub>	I <sub>C</sub> = 5mA	I <sub>E</sub> = 0mA	45	—	—	V
BV <sub>EBO</sub>	I <sub>E</sub> = 5mA	I <sub>C</sub> = 0mA	3.0	—	—	V
I <sub>CBO</sub>	V <sub>CB</sub> = 24V		—	—	1.25	mA
h <sub>FE</sub>	V <sub>CE</sub> = 5V	I <sub>C</sub> = 1A	15	—	150	—

### DYNAMIC

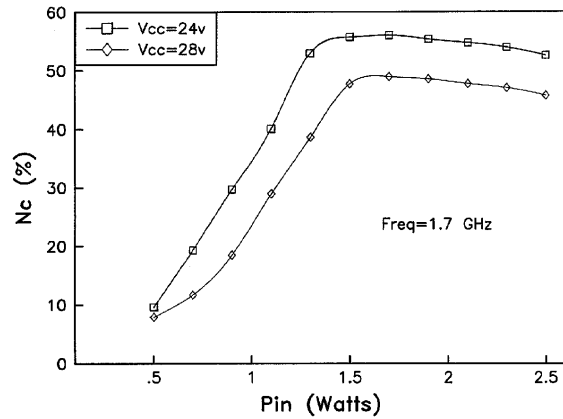
Symbol	Test Conditions			Value			Unit
				Min.	Typ.	Max.	
P <sub>OUT</sub>	f = 1.7 — 2.0GHz	P <sub>IN</sub> = 2.2W	V <sub>CC</sub> = 24V	12	—	—	W
η <sub>C</sub>	f = 1.7 — 2.0GHz	P <sub>IN</sub> = 2.2W	V <sub>CC</sub> = 24V	40	—	—	%
G <sub>P</sub>	f = 1.7 — 2.0GHz	P <sub>IN</sub> = 2.2W	V <sub>CC</sub> = 24V	7.4	—	—	dB

### TYPICAL PERFORMANCE

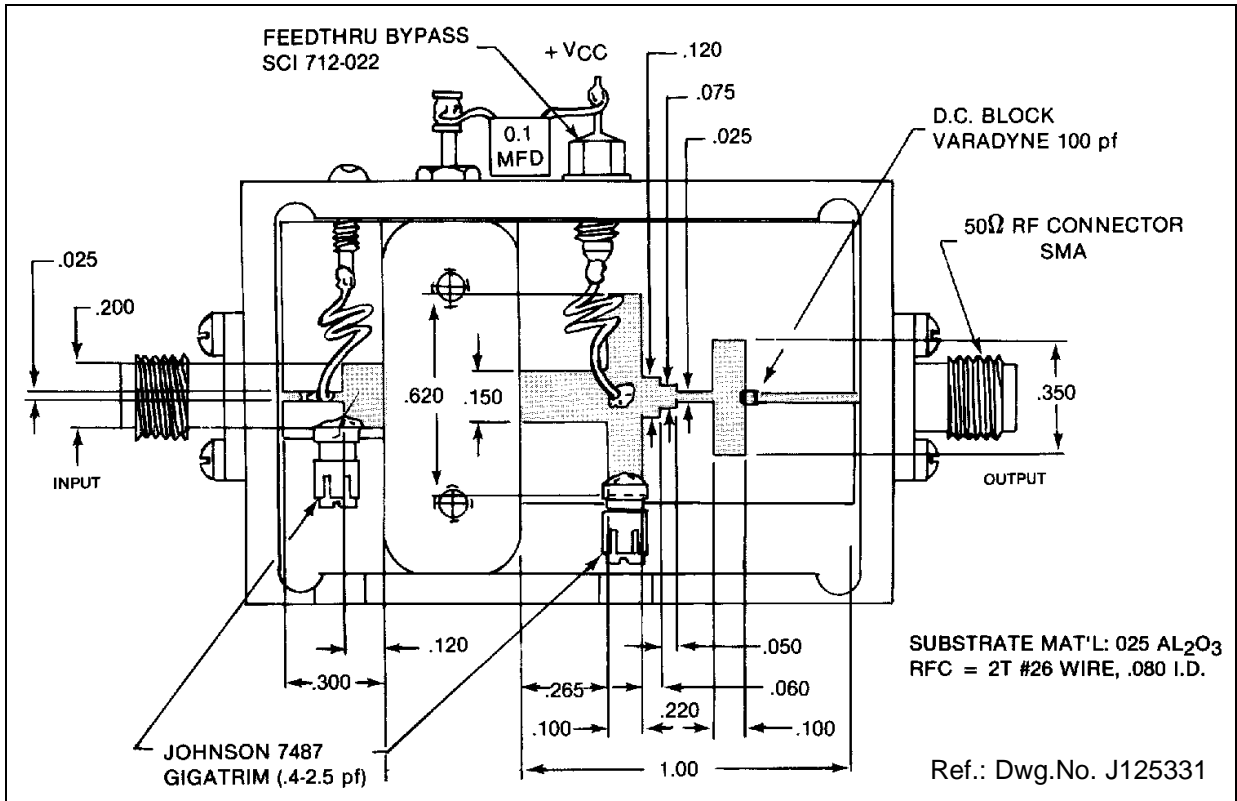
POWER OUTPUT vs POWER INPUT



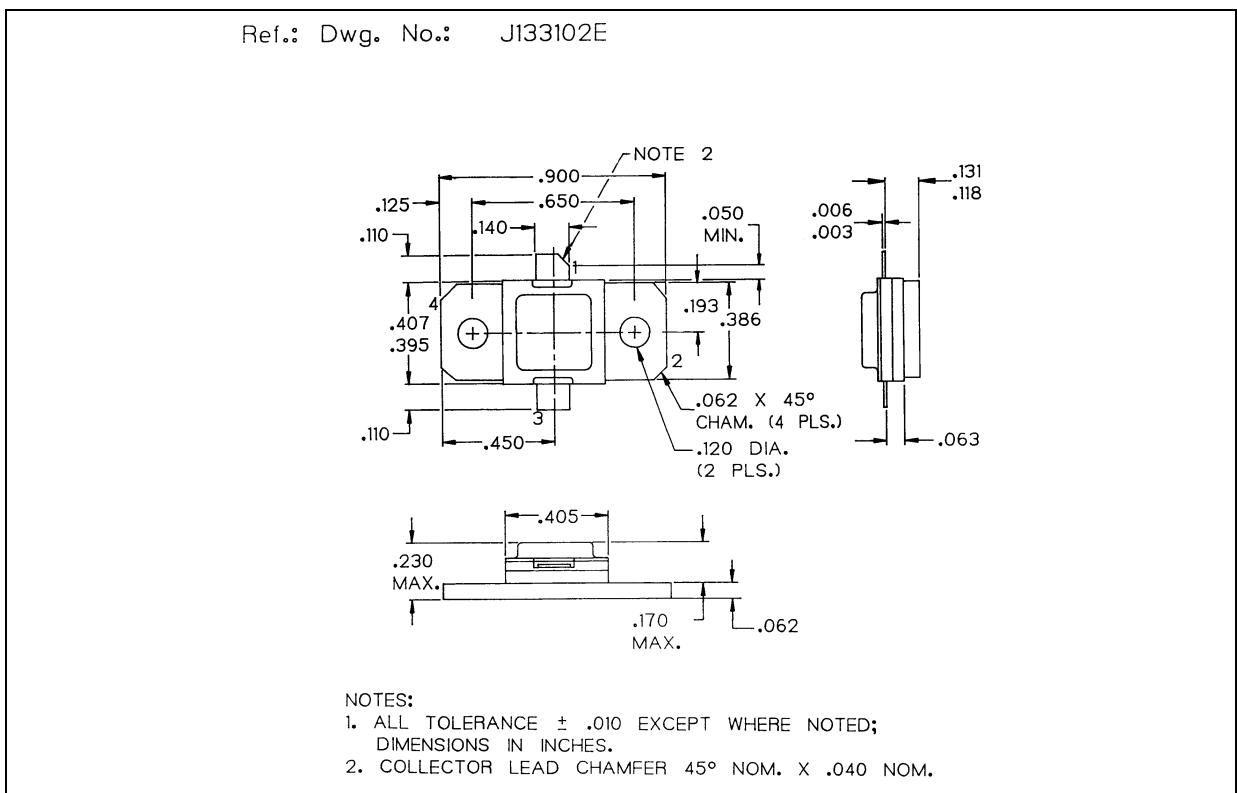
COLLECTOR EFFICIENCY vs POWER INPUT



TEST CIRCUIT



PACKAGE MECHANICAL DATA



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