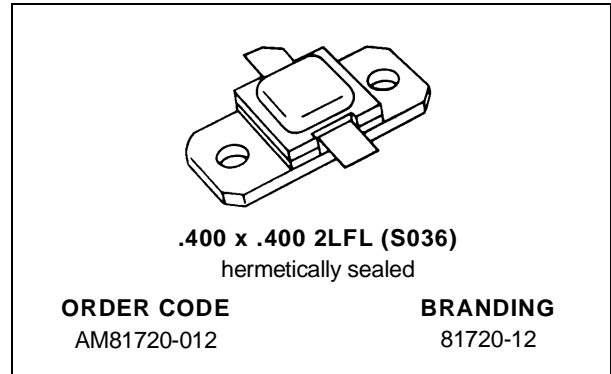


## RF & MICROWAVE TRANSISTORS COMMUNICATIONS APPLICATIONS

- 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

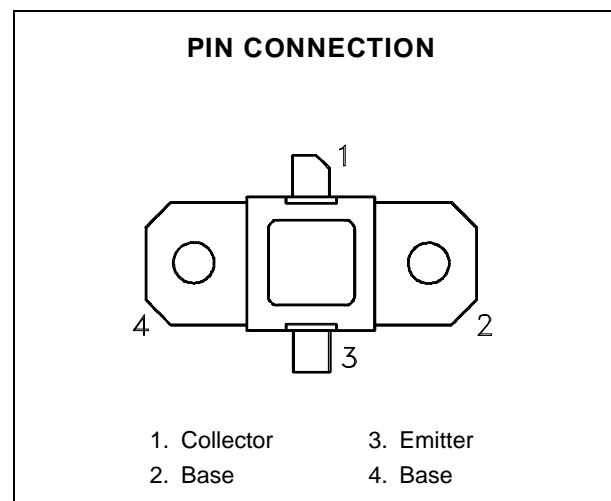


### DESCRIPTION

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	$^{\circ}C/W$
---------------	----------------------------------	-----	---------------

\*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

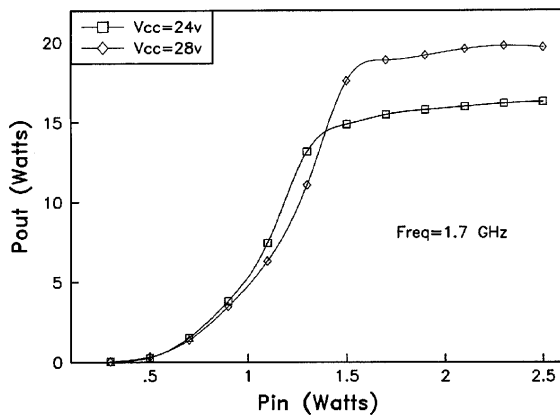
Symbol	Test Conditions		Value			Unit
			Min.	Typ.	Max.	
BV <sub>CBO</sub>	I <sub>C</sub> = 5mA	I <sub>E</sub> = 0mA	45	—	—	V
BV <sub>EBO</sub>	I <sub>E</sub> = 5mA	I <sub>C</sub> = 0mA	3.0	—	—	V
I <sub>CBO</sub>	V <sub>CB</sub> = 24V		—	—	1.25	mA
h <sub>FE</sub>	V <sub>CE</sub> = 5V	I <sub>C</sub> =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

### DYNAMIC

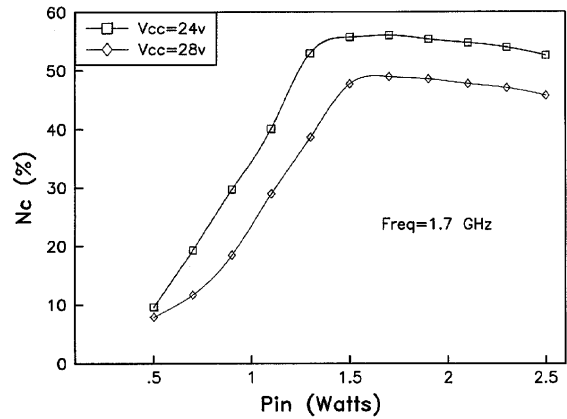
Symbol	Test Conditions			Value			Unit
				Min.	Typ.	Max.	
P <sub>OUT</sub>	f = 1.7 — 2.0GHz	P <sub>IN</sub> = 2.2W	V <sub>CC</sub> = 24V	12	—	—	W
η <sub>C</sub>	f = 1.7 — 2.0GHz	P <sub>IN</sub> = 2.2W	V <sub>CC</sub> = 24V	40	—	—	%
G <sub>P</sub>	f = 1.7 — 2.0GHz	P <sub>IN</sub> = 2.2W	V <sub>CC</sub>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

### TYPICAL PERFORMANCE

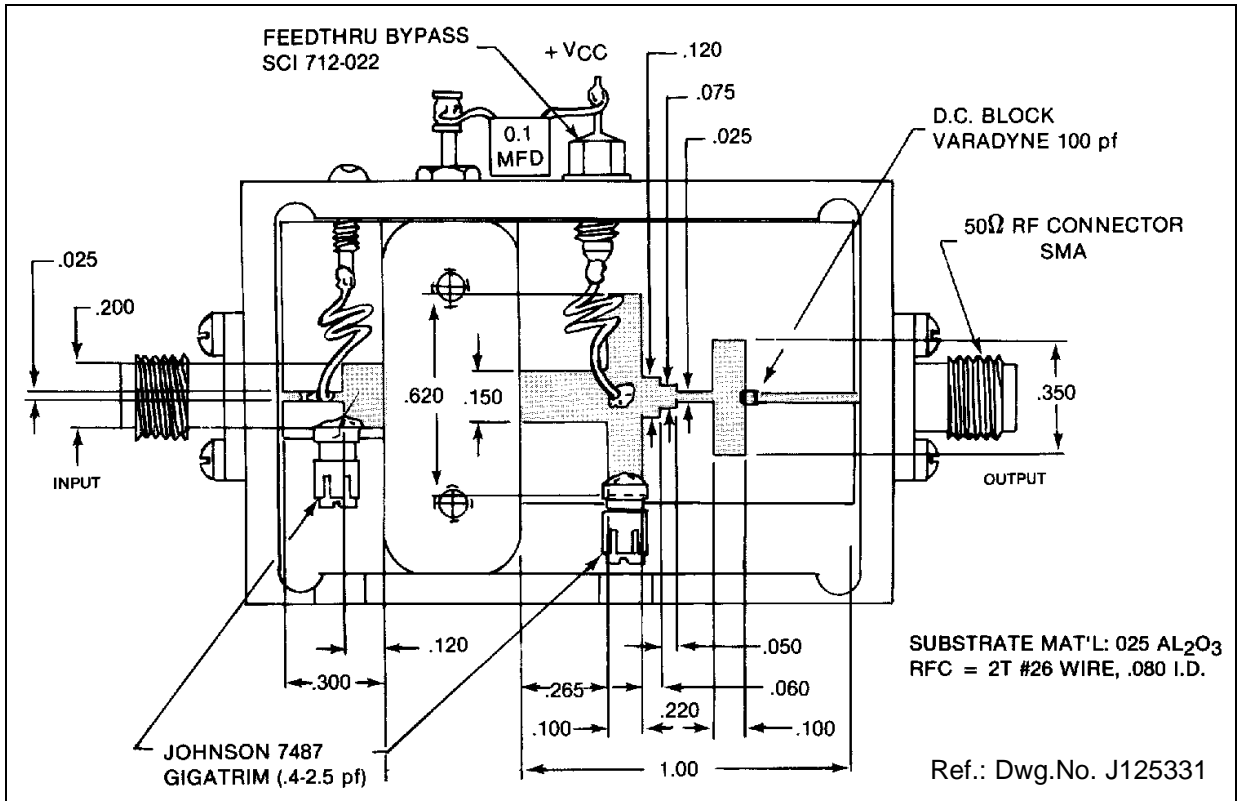
**POWER OUTPUT vs POWER INPUT**



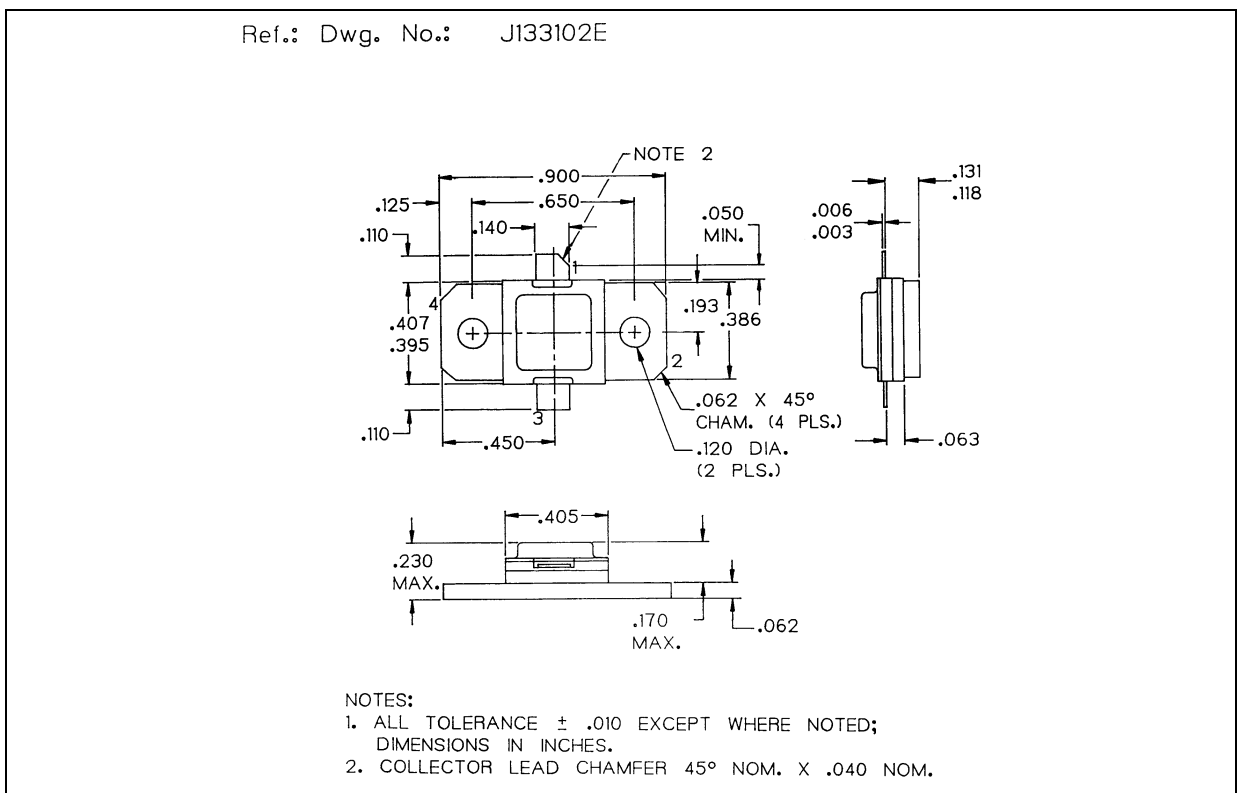
**COLLECTOR EFFICIENCY vs POWER INPUT**



TEST CIRCUIT



PACKAGE MECHANICAL DATA



Information furnished is believed to be accurate and reliable. However, SGS-THOMSON Microelectronics assumes no responsibility for the consequences of use of such information nor for any infringement of patents or other rights of third parties which may result from its use. No license is granted by implication or otherwise under any patent or patent rights of SGS-THOMSON Microelectronics. Specifications mentioned in this publication are subject to change without notice. This publication supersedes and replaces all information previously supplied. SGS-THOMSON Microelectronics products are not authorized for use as critical components in life support devices or systems without express written approval of SGS-THOMSON Microelectronics.

© 1994 SGS-THOMSON Microelectronics - All Rights Reserved

SGS-THOMSON Microelectronics GROUP OF COMPANIES  
Australia - Brazil - France - Germany - Hong Kong - Italy - Japan - Korea - Malaysia - Malta - Morocco - The Netherlands -  
Singapore - Spain - Sweden - Switzerland - Taiwan - Thailand - United Kingdom - U.S.A



LittleDiode supplies new, hard to find or obsolete electronic components and semiconductors all over the world.

With over two million different components listed you are sure to find the part you need.

Feel free to visit us today at our online store:

[LittleDiode.com](http://LittleDiode.com)

Looking forward to providing you with the best possible service.