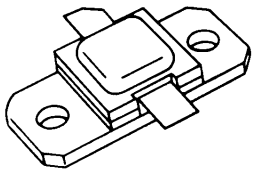
SGS-THOMSON MICROELECTRONICS

AM81720-012

RF & MICROWAVE TRANSISTORS COMMUNICATIONS APPLICATIONS

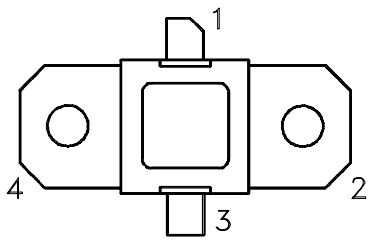
- REFRACTORY/GOLD METALLIZATION
- EMITTER SITE BALLASTED
- RUGGIZED VSWR ∞:1
- LOW THERMAL RESISTANCE
- INPUT/OUTPUT MATCHING
- OVERLAY GEOMETRY
- METAL/CERAMIC HERMETIC PACKAGE
- P_{OUT} = 12 W MIN. WITH 7.4 dB GAIN



.400 x .400 2LFL (S036)
hermetically sealed

ORDER CODE	BRANDING
AM81720-012	81720-12

PIN CONNECTION



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

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 ∞: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°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	°C
T_{STG}	Storage Temperature	– 65 to +200	°C

THERMAL DATA

$R_{TH(j-c)}$	Junction-Case Thermal Resistance	5.5	°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.

ELECTRICAL SPECIFICATIONS (T_{case} = 25°C)

STATIC

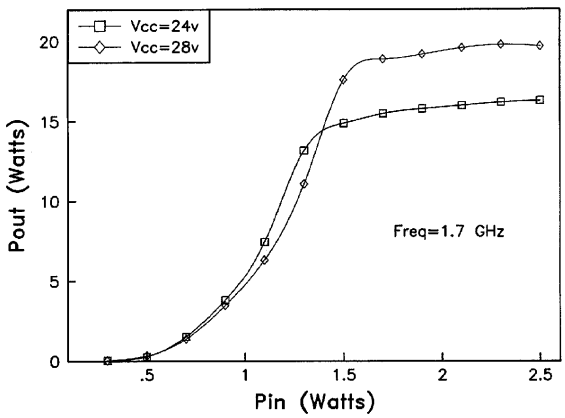
Symbol	Test Conditions		Value			Unit
			Min.	Typ.	Max.	
BV_{CBO}	I_C = 5mA	I_E = 0mA	45	—	—	V
BV_{EBO}	I_E = 5mA	I_C = 0mA	3.0	—	—	V
I_{CBO}	V_{CB} = 24V		—	—	1.25	mA
h_{FE}	V_{CE} = 5V	I_C = 1A	15	—	150	—

DYNAMIC

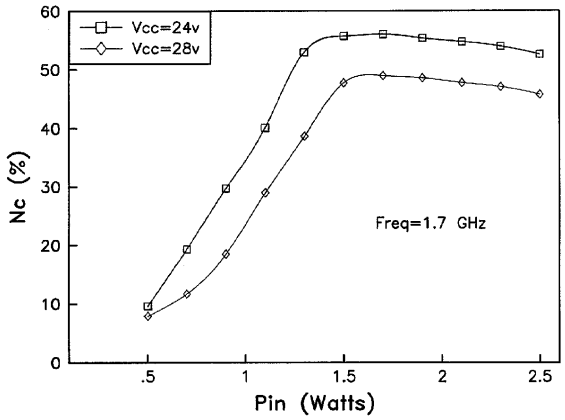
Symbol	Test Conditions			Value			Unit
				Min.	Typ.	Max.	
P_{OUT}	f = 1.7 — 2.0GHz	P_{IN} = 2.2W	V_{CC} = 24V	12	—	—	W
η_C	f = 1.7 — 2.0GHz	P_{IN} = 2.2W	V_{CC} = 24V	40	—	—	%
G_P	f = 1.7 — 2.0GHz	P_{IN} = 2.2W	V_{CC} = 24V	7.4	—	—	dB

TYPICAL PERFORMANCE

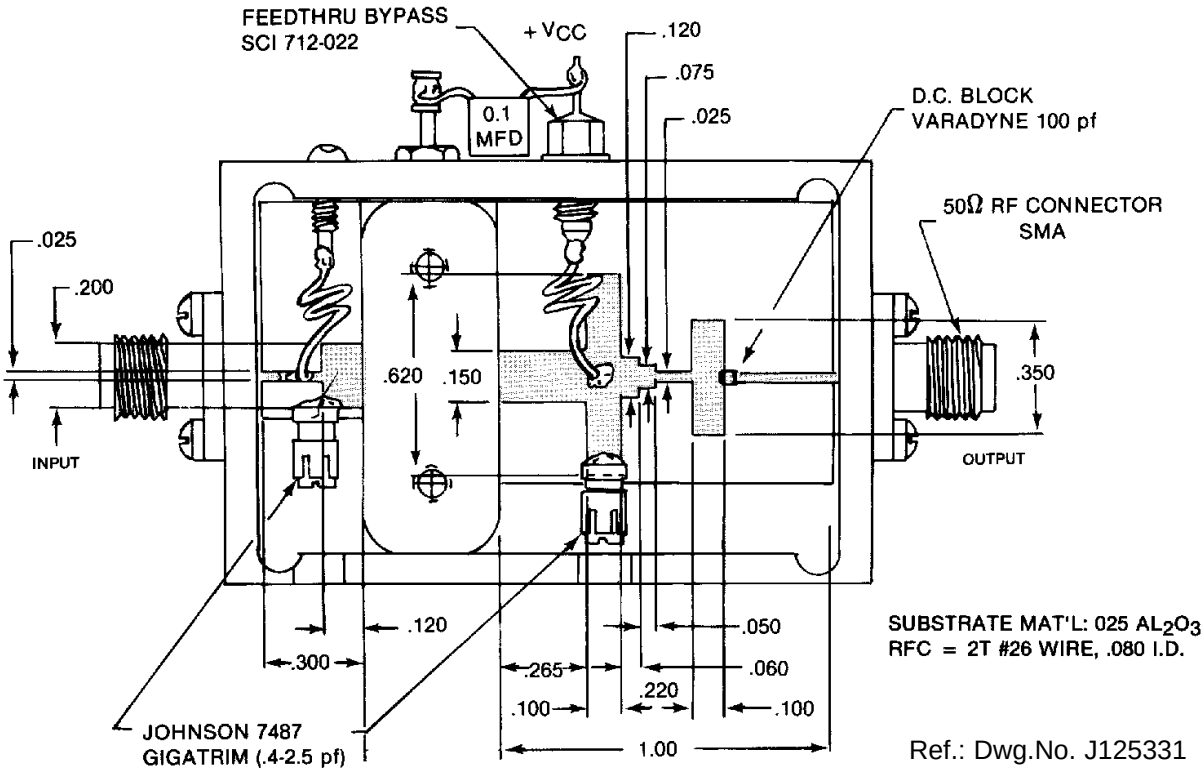
POWER OUTPUT vs POWER INPUT



COLLECTOR EFFICIENCY vs POWER INPUT

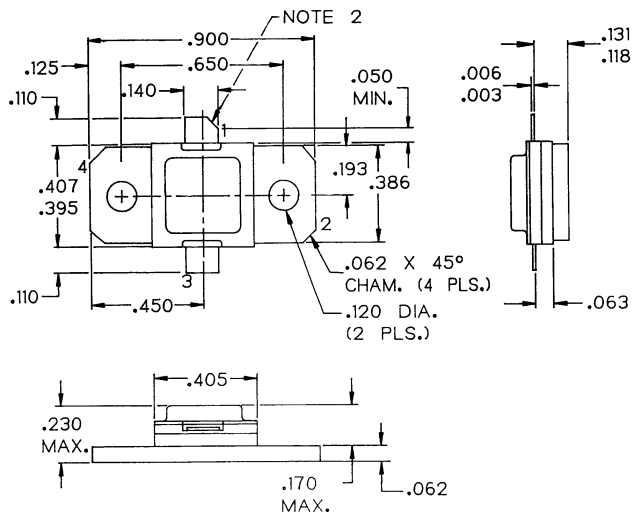


TEST CIRCUIT



PACKAGE MECHANICAL DATA

Ref.: Dwg. No.: J133102E



NOTES:
1. ALL TOLERANCE ± .010 EXCEPT WHERE NOTED; DIMENSIONS IN INCHES.
2. COLLECTOR LEAD CHAMFER 45° NOM. X .040 NOM.