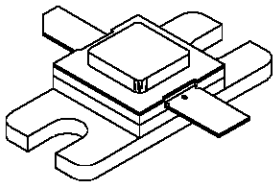
SGS-THOMSON MICROELECTRONICS

AM81719-030

RF & MICROWAVE TRANSISTORS TELEMETRY APPLICATIONS

PRELIMINARY DATA

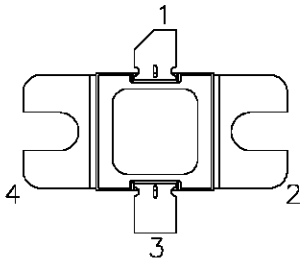
- REFRACTORY/GOLD METALLIZATION
- EMITTER SITE BALLASTED
- LOW THERMAL RESISTANCE
- INPUT/OUTPUT MATCHING
- OVERLAY GEOMETRY
- METAL/CERAMIC HERMETIC PACKAGE
- P_{OUT} = 28 W MIN. WITH 6.7 dB GAIN



.400 SQ 2LFL (M147)
hermetically sealed

ORDER CODE	BRANDING
AM81719-030	81719-030

PIN CONNECTION



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

DESCRIPTION

The AM81719-030 is a high power silicon NPN bipolar transistor designed for Class C, CW communications and telemetry applications in the 1.75 - 1.85 GHz frequency range.

An emitter site ballasted refractory/gold overlay die geometry computerized automatic wire bonding is employed to ensure long term reliability and product consistency.

AM81719-030 is supplied in the industry-standard AMPAC™ hermetic metal/ceramic package.

ABSOLUTE MAXIMUM RATINGS (T_{case} = 25°C)

Symbol	Parameter	Value	Unit
P_{DISS}	Power Dissipation*	67.3	W
I_C	Device Current*	2.67	A
V_{CC}	Collector-Supply Voltage*	28	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*	2.6	°C/W

*Applies only to rated RF amplifier operation

ELECTRICAL SPECIFICATIONS (Tcase = 25°C)

STATIC

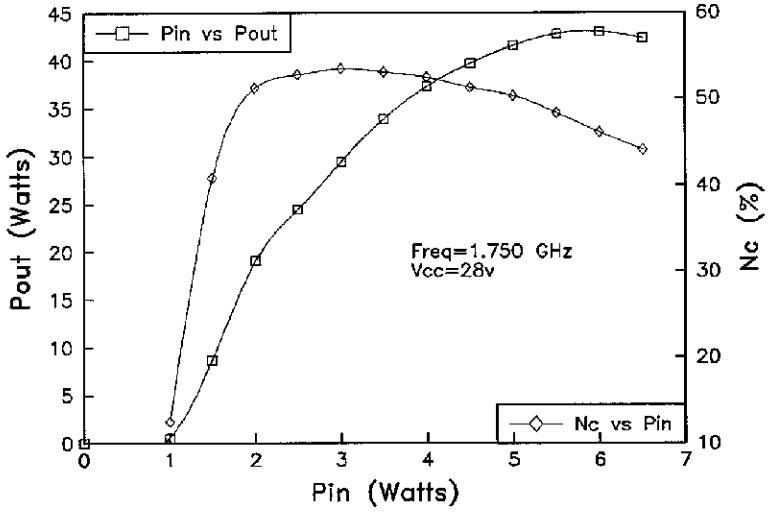
Symbol	Test Conditions		Value			Unit
			Min.	Typ.	Max.	
BV_{CBO}	I_C = 10mA	I_E = 0mA	45	—	—	V
BV_{EBO}	I_E = 10mA	I_C = 0mA	3.0	—	—	V
BV_{CES}	IC = 10mA		45	—	—	V
I_{CES}	V_{BE} = 0V	V_{CE} = 28V	—	—	5	mA
h_{FE}	V_{CE} = 5V	I_C = 2mA	15	—	150	—

DYNAMIC

Symbol	Test Conditions			Value			Unit
				Min.	Typ.	Max.	
P_{OUT}	f = 1.75 — 1.85GHz	P_{IN} = 6.0W	V_{CC} = 28V	28	—	—	W
ηc	f = 1.75 — 1.85GHz	P_{IN} = 6.0W	V_{CC} = 28V	40	—	—	%
G_P	f = 1.75 — 1.85GHz	P_{IN} = 6.0W	V_{CC} = 28V	6.7	—	—	dB

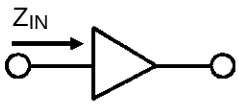
TYPICAL PERFORMANCE

POWER OUTPUT & COLLECTOR EFFICENCY vs POWER INPUT

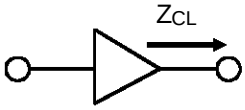


IMPEDANCE DATA

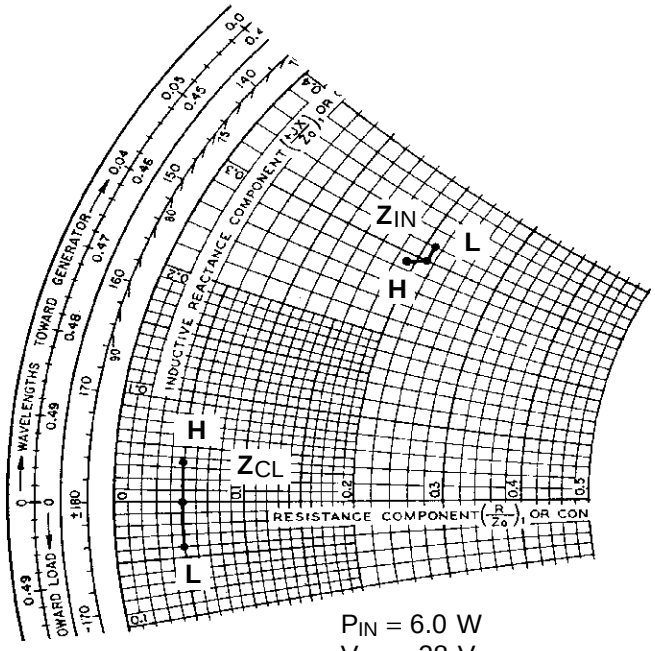
TYPICAL INPUT IMPEDANCE



TYPICAL COLLECTOR LOAD IMPEDANCE



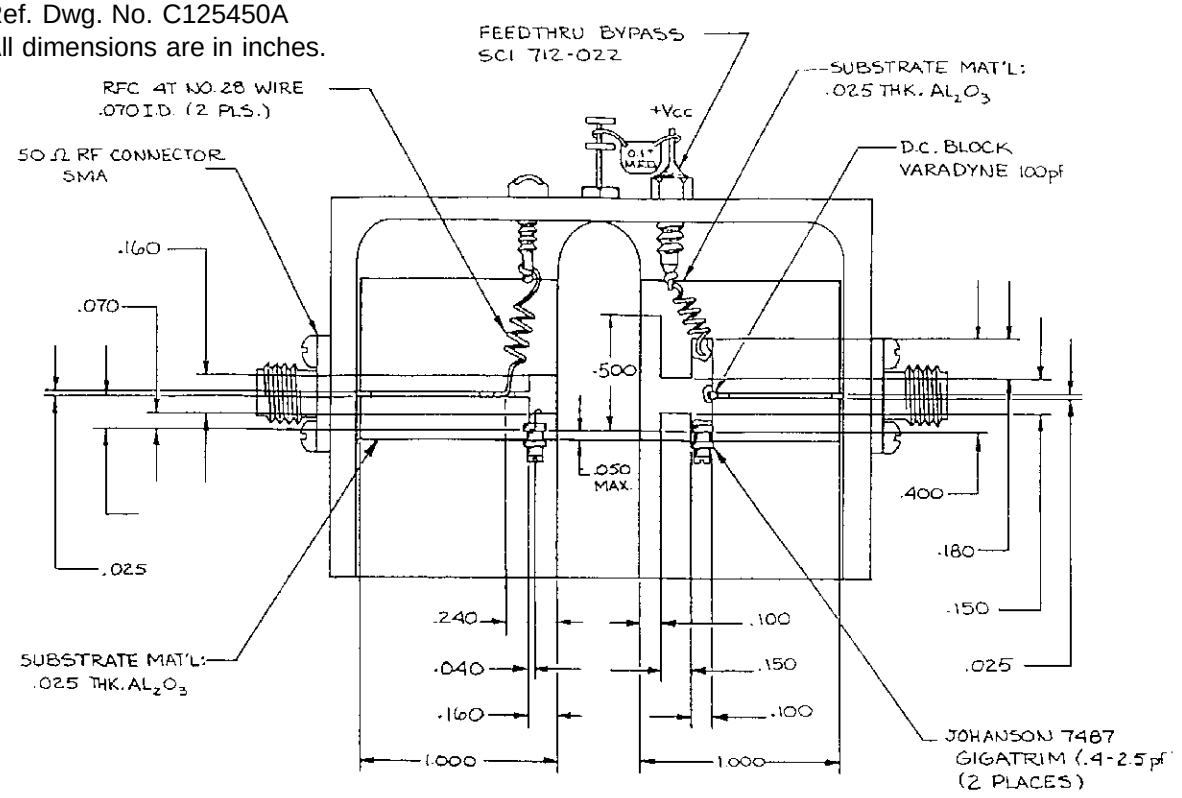
FREQ.	Z_{IN} (Ω)	Z_{CL} (Ω)
L = 1.7 GHz	10.5 + j 16.0	2.5 – j 2.0
M = 1.8 GHz	10.25 + j 15.0	2.5 + j 0.0
H = 1.9 GHz	9.5 + j 14.5	2.5 + j 2.0



P_{IN} = 6.0 W
V_{CC} = 28 V
Normalized to 50 ohms

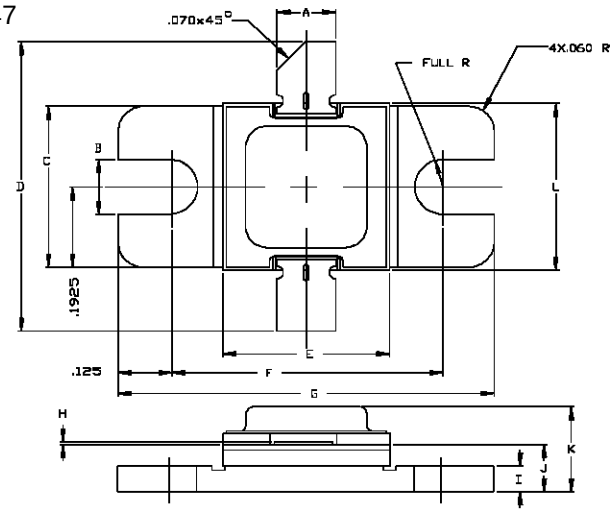
TEST CIRCUIT

Ref. Dwg. No. C125450A
All dimensions are in inches.



PACKAGE MECHANICAL DATA

Ref.: Dwg. No. 12-0147



SGS-THOMSON MICROELECTRONICS		
	MINIMUM Inches/mm	MAXIMUM Inches/mm
A	.135/3,43	.145/3,68
B	.125/3,18	
C	.380/9,65	.390/9,91
D	.885/22,48	
E	.392/9,96	.402/10,29
F	.645/16,38	.655/16,64
G	.895/22,73	.905/22,99
H	.002/0,05	.006/0,15
I	.055/1,40	.065/1,65
J	.105/2,67	.125/3,18

CONT'D		
	MINIMUM Inches/mm	MAXIMUM Inches/mm
K		.230/5,84
L	.392/9,96	.402/10,29