ADVANCED POWER TECHNOLOGY RF®

140 COMMERCE DRIVE
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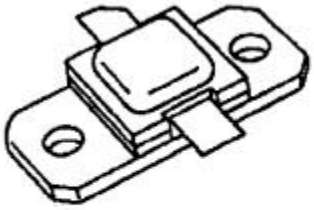
AM82223-018

RF & MICROWAVE TRANSISTORS
TELEMETRY APPLICATIONS



.400 x .400 2L flanged (M214)
hermetically sealed

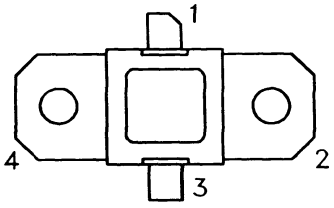
Features

- REFRACTORY/GOLD METALLIZATION
- EMITTER SITE BALLASTED
- ∞:1 VSWR CAPABILITY AT RATED CONDITIONS
- LOW THERMAL RESISTANCE
- INPUT/OUTPUT MATCHING
- OVERLAY GEOMETRY
- METAL/CERAMIC HERMETIC PACKAGE
- P_{OUT} = 18 W MINIMUM WITH G_P = 6.5 dB GAIN MINIMUM
- COMMON BASE CONFIGURATION

DESCRIPTION:

The AM82223-018 is a common base, silicon NPN bipolar transistor designed for high gain and efficiency in hi-rel aerospace telemetry applications in the 2.2-2.3 GHz frequency range.
It incorporates internal input and output impedance matching structures along with a rugged, emitter-site ballasted overlay die geometry capable of withstanding ∞:1 load mismatch at any phase angle under full rated operating conditions..
The AM82223-018 is provided in the industry-standard AMPAC™ metal/ceramic hermetic package.

PIN CONNECTION



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

ABSOLUTE MAXIMUM RATINGS (Tcase = 25°C)

Symbol	Parameter	Value	Unit
P_{DISS}	Power Dissipation	58.3	W
I_C	Device Current*	3.0	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	3.0	°C/W

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ELECTRICAL SPECIFICATIONS (Tcase = 25°C)

STATIC

Symbol	Test Conditions		Value			Unit
			Min.	Typ.	Max.	
BV_{CBO}	I_C = 5 mA	I_E = 0 mA	45	---	---	V
BV_{EBO}	I_E = 1 mA	I_C = 0 mA	3.5	---	---	V
I_{CBO}	V_{CB} = 24 V		---	---	2.0	mA
h_{FE}	V_{CE} = 5 V	I_C = 2 A	30	---	300	---

DYNAMIC

Symbol	Test Conditions			Value			Unit
				Min.	Typ.	Max.	
P_{OUT}	f = 2.2 - 2.3 GHz	P_{IN} = 4.0W	V_{CC} =24V	18	---	---	W
ηc	f = 2.2 - 2.3 GHz	P_{IN} = 4.0W	V_{CC} =24V	40	---	---	%
G_P	f = 2.2 - 2.3 GHz	P_{IN} = 4.0W	V_{CC} =24V	6.5	---	---	dB

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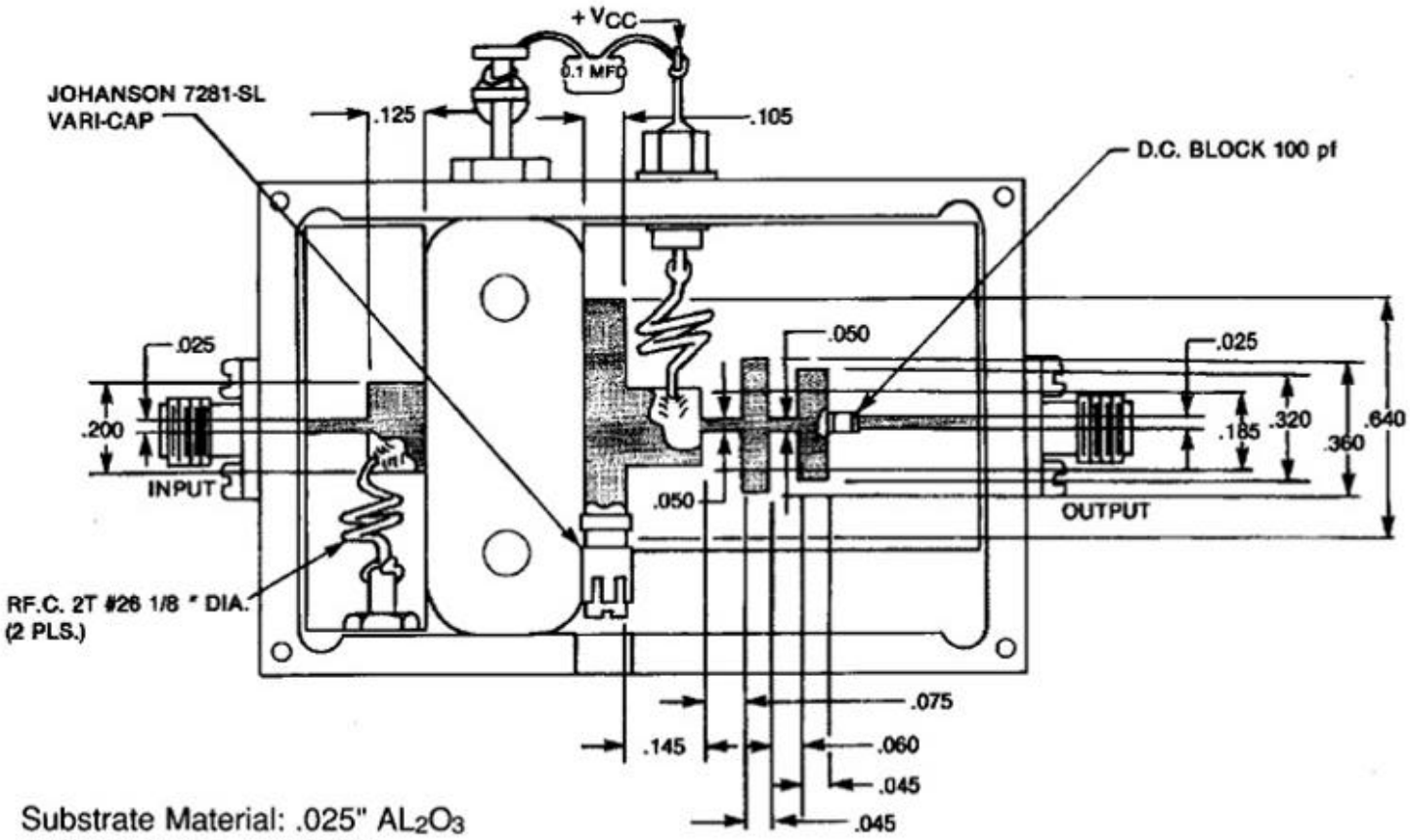
TEST CIRCUIT



Substrate Material: .025" AL_2O_3
Ref.: Dwg. No. J125199B

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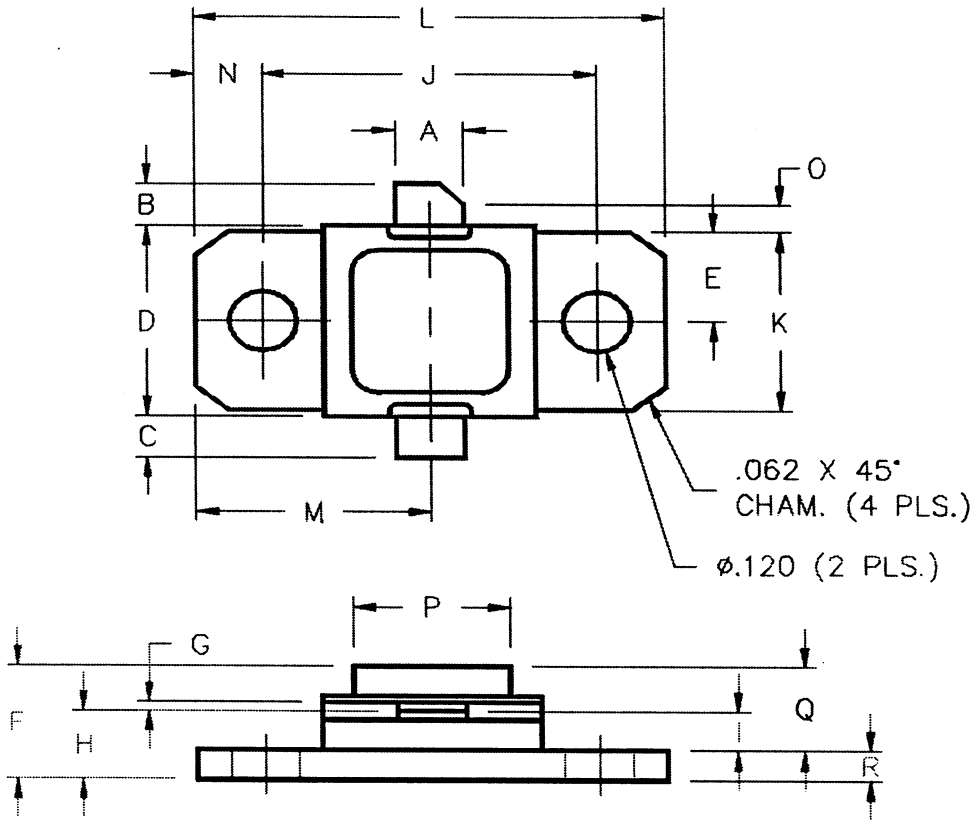
PACKAGE MECHANICAL DATA



	MINIMUM INCHES/MM	MAXIMUM INCHES/MM		MINIMUM INCHES/MM	MAXIMUM INCHES/MM
A	.140/3,56		J	.650/16,51	
B	.110/2,80		K	.386/9,80	
C	.110/2,80		L	.900/22.86	
D	.395/10,03	.407/10,34	M	.450/11,43	
E	.193/4,90		N	.125/3,18	
F		.230/5,84	O	.050/1,27	
G	.003/0,08	.006/0,15	P	.405/10,29	
H	.118/3,00	.131/3,33	Q	.170/4,32	
I	.063/1,60		R	.062/1,58	

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