



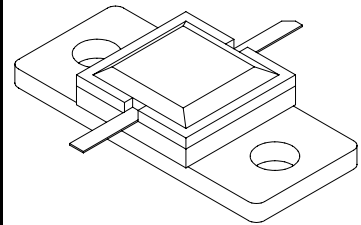
TAN75A

75 Watts, 50 Volts, Pulsed
Avionics 960 - 1215 MHz

GENERAL DESCRIPTION

The TAN75A is a high powered COMMON BASE bipolar transistor. It is designed for pulsed systems in the frequency band 960-1215 MHz. The device has gold thin-film metallization and diffused ballasting for proven highest MTTF. The transistor includes input and output prematch for broadband capability. Low thermal resistance package reduces junction temperature, extends life.

CASE OUTLINE 55AZ, Style 1



ABSOLUTE MAXIMUM RATINGS

Maximum Power Dissipation

Device Dissipation @25°C 290 W

Maximum Voltage and Current

Collector to Base Voltage (BV_{ces}) 55 V

Emitter to Base Voltage (BV_{ebo}) 4.0 V

Collector Current (I_c) 9.0 A

Maximum Temperatures

Storage Temperature -65 to +200 °C

Operating Junction Temperature +200 °C

ELECTRICAL CHARACTERISTICS @ 25°C

SYMBOL	CHARACTERISTICS	TEST CONDITIONS	MIN	TYP	MAX	UNITS
P_{out}	Power Out	F = 960-1215 MHz	75	80		W
P_{in}	Power Input	$V_{cc} = 50$ Volts			12	W
P_g	Power Gain	PW = 20 μ sec	8.0	8.5		dB
η_c	Collector Efficiency	DF = 5%		40		%
VSWR	Load Mismatch Tolerance	F = 1090 MHz			20:1	

FUNCTIONAL CHARACTERISTICS @ 25°C

BV_{ebo}	Emitter to Base Breakdown	$I_e = 10$ mA	4			V
BV_{ces}	Collector to Emitter Breakdown	$I_c = 15$ mA	50			V
h_{FE}	DC - Current Gain	$V_{ce} = 5V, I_c = 15$ mA	10		100	
θ_{jc}^2	Thermal Resistance				0.6	°C/W

NOTE 1: At rated output power and pulse conditions

2. At rated pulse conditions

Revision A, August 2010

Microsemi reserves the right to change, without notice, the specifications and information contained herein.

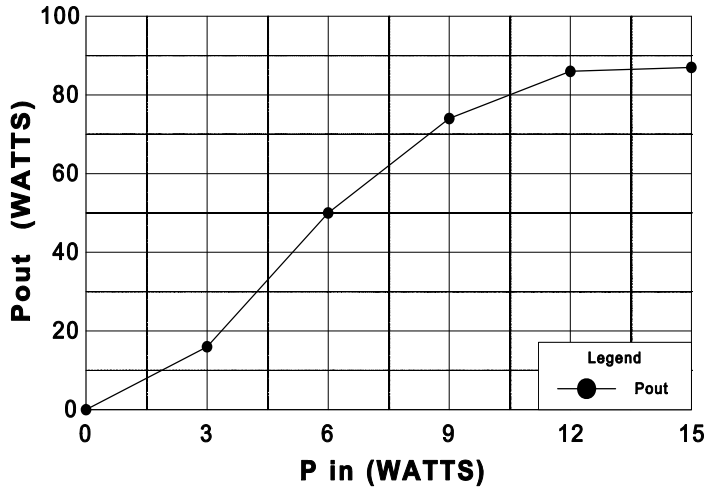
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Microsemi Corporation 3000 Oakmead Village Drive, Santa Clara, California 95051 408-986-8031

TAN75A

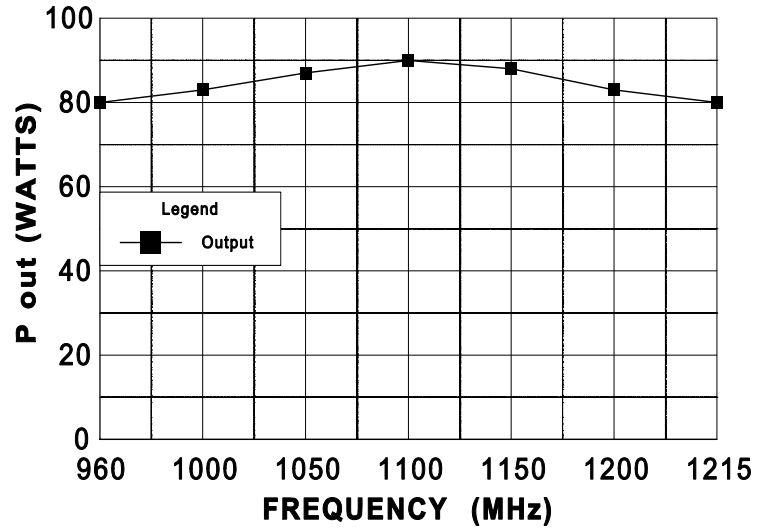
POWER OUTPUT vs POWER INPUT

Vcc = 50 V, 1090 MHz



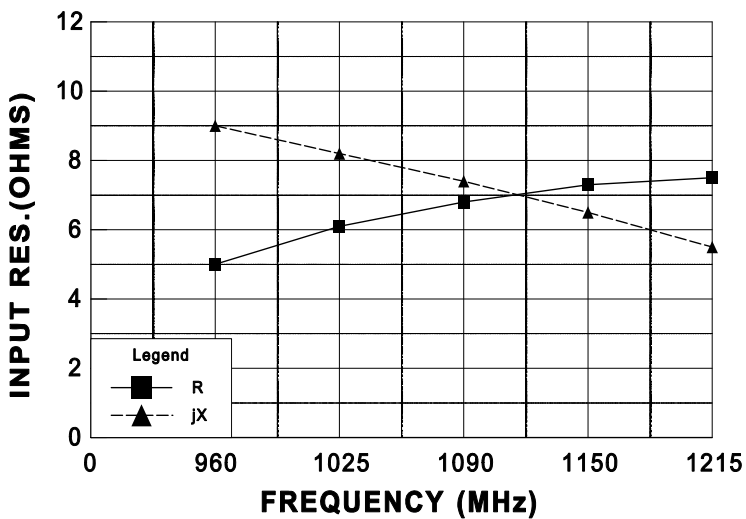
POWER OUTPUT vs FREQUENCY

Vcc = 50 V, F = 1090 MHz



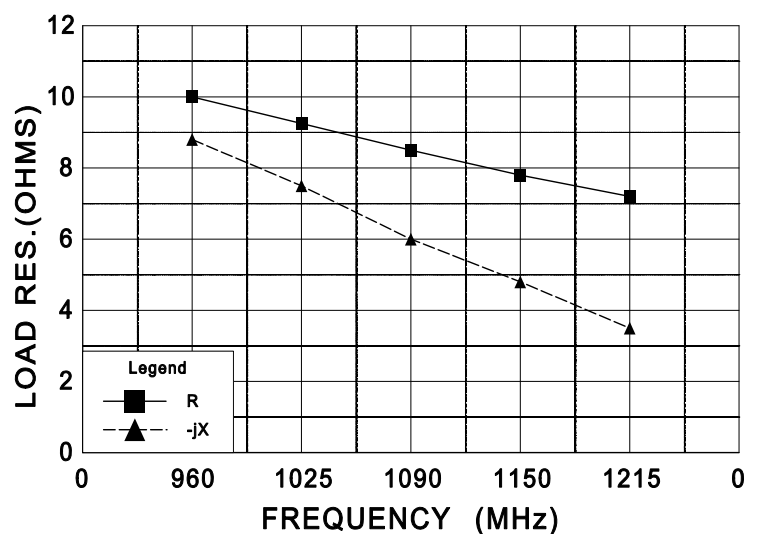
SERIES INPUT IMPEDANCE vs FREQUENCY

Vcc = 50 V, Pout = 75 W



SERIES LOAD IMPEDANCE vs FREQUENCY

Vcc = 50 V, Po = 75 W



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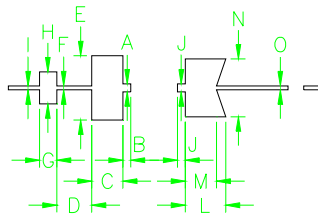
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REVISIONS

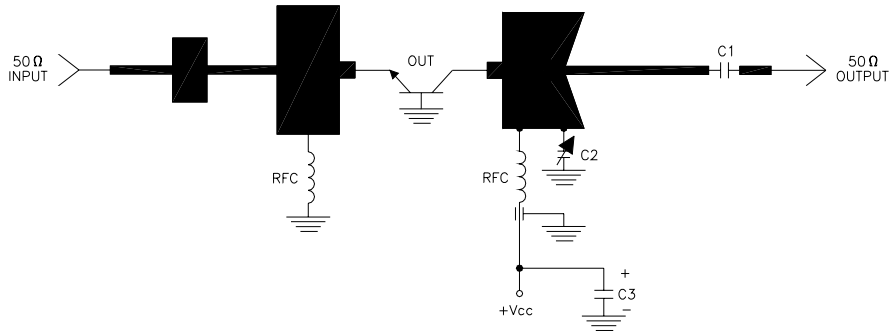
ZONE	REV	DESCRIPTION	DATE	APPROVED
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DIM	INCHES
A	.050
B	.050
C	.200
D	.225
E	.400
F	.025
G	.110
H	.200
I	.025
J	.050
K	.050
L	.260
M	.200
N	.360
O	.025



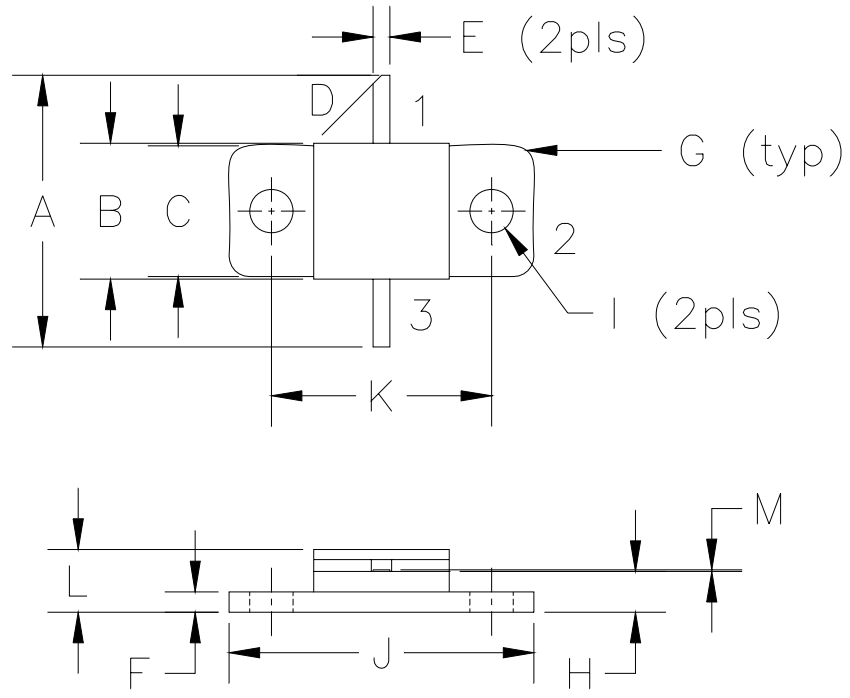
TAN75A TEST CIRCUIT

f = 960-1215MHz
 Vcc = 50V
 10μsec @ 5% duty



- = Microstrip on 25 mil Epsilam 10; Er=10
- C1 = 82pF chip cap
- C2 = 0.3 - 3.5pF variable
- C3 = 100 MFD @ 50V

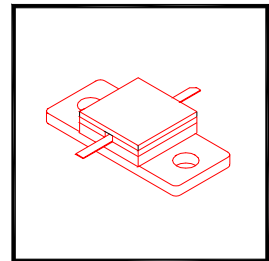
CAGE 0PJR2	DWG NO. TAN 75A	REV
	SCALE 1/1	SHEET



DIM	MILLIMETER	±TOL	INCHES	±TOL
A	20.32	.76	.800	.030
B	10.16	.13	.400	.005
C	9.78	.13	.385	.005
D	45°	5°	45°	5°
E	1.27	.13	.050	.005
F	1.52	.13	.060	.005
G	1.52 R	.13	.060 R	.005
H	3.05	.13	.120	.005
I	3.30 DIA	.13	.128 DIA	.007
J	22.86	.13	.900	.005
K	16.51	.13	.650	.005
L	4.70	REF	.185	REF
M	0.13	.02	.005	.001

STYLE 1:
 PIN 1 = COLLECTOR
 2 = BASE
 3 = EMITTER

STYLE 2:
 PIN 1 = COLLECTOR
 2 = EMITTER
 3 = BASE



DWG NO.

55AZ