GHz TECHNOLOGY
RF·MICROWAVE SILICON POWER TRANSISTORS

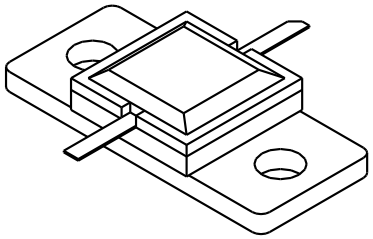
TAN75A

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

GENERAL DESCRIPTION

The TAN75A is a high power 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 @ 25ºC[2]	290 Watts
Maximum Voltage and Current	
BVces Collector to Base Voltage	55 Volts
BVebo Emitter to Base Voltage	4 Volts
Ic Collector Current	9 Amps
Maximum Temperatures	
Storage Temperature	- 65 to + 200ºC
Operating Junction Temperature	+ 200ºC

ELECTRICAL CHARACTERISTICS @ 25 ^{O}C

SYMBOL	CHARACTERISTICS	TEST CONDITIONS	MIN	TYP	MAX	UNITS
Pout	Power Out	F = 960-1215 MHz	75	80		Watts
Pin	Power Input	Vcc = 50 Volts			12	Watts
Pg	Power Gain	PW = 20 μsec	8.0	8.5		dB
η_c	Collector Efficiency	DF = 5%		40		%
VSWR	Load Mismatch Tolerance	F = 1090 MHz			20:1	

BVebo	Emitter to Base Breakdown	Ie = 10 mA	4			Volts
BVces	Collector to Emitter Breakdown	Ic = 15 mA	50			Volts
$\mathbf{h_{FE}}$	DC - Current Gain	Ic = 15 mA, Vce = 5 V	10		100	
θ**jc**[2]	Thermal Resistance				0.6	ºC/W

Note 1: A rated output power and pulse conditions
2: At rated pulse conditions

Initial Issue June, 1994

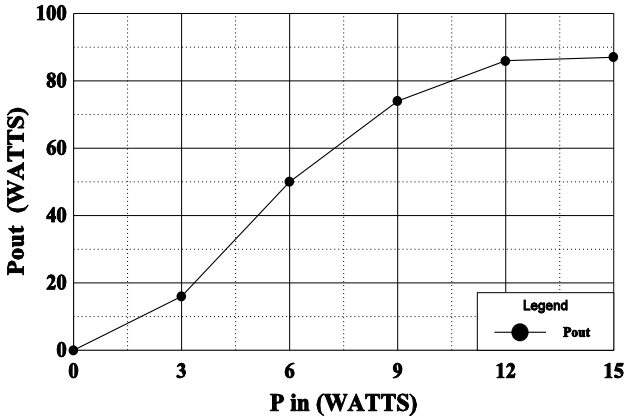
GHz Technology Inc. 3000 Oakmead Village Drive, Santa Clara, CA 95051-0808 Tel. 408 / 986-8031 Fax 408 / 986-8120

GHz TECHNOLOGY
RF·MICROWAVE SILICON POWER TRANSISTORS

TAN75A

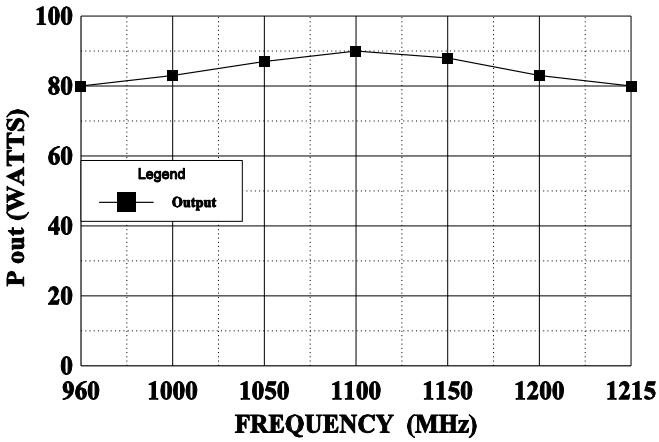
POWER OUTPUT vs POWER INPUT

Vcc = 50 V, 1090 MHz



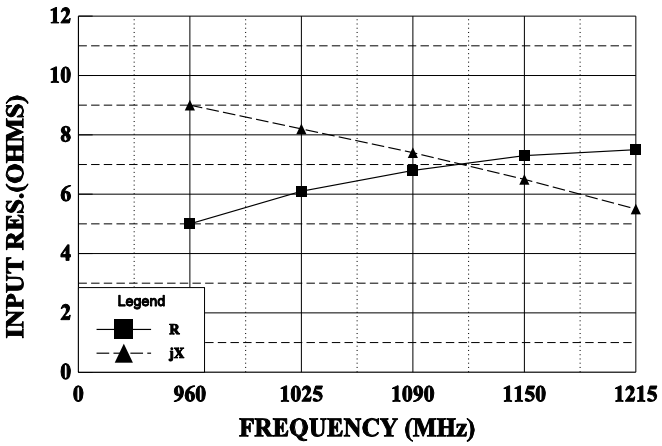
POWER OUTPUT vs FREQUENCY

Vcc - 50 V, F = 1090 MHZ



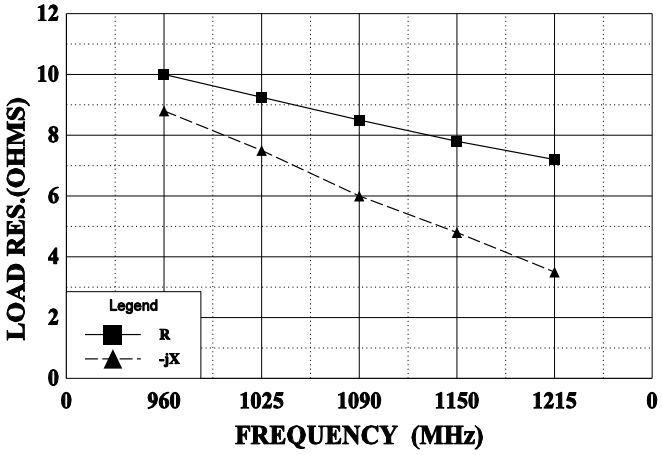
SERIES INPUT IMPEDANCE vs FREQUENCY

Vcc = 50 V, Pout = 75 W



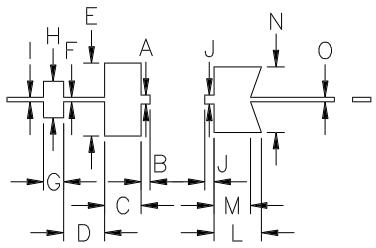
SERIES LOAD IMPEDANCE vs FREQUENCY

Vcc = 50 V, Po = 75 W



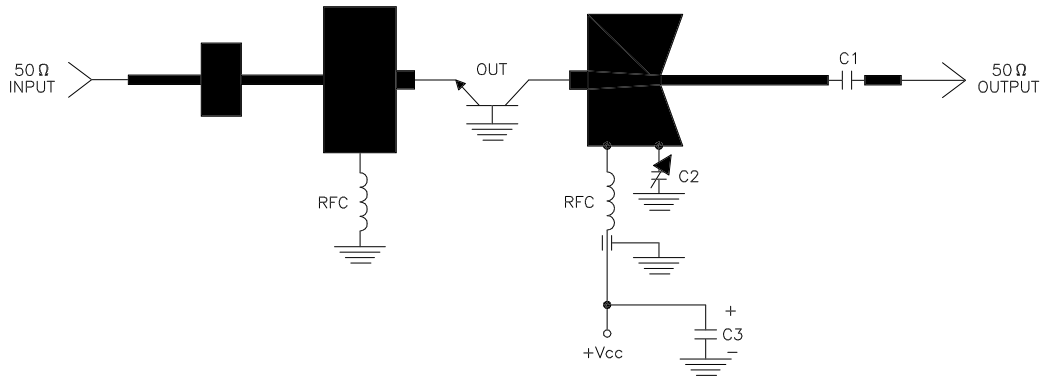
REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED

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 alumina; Er=10
C1 = 82pF chip cap
C2 = 0.3 – 3.5pF variable
C3 = 100 MFD @ 50V

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