



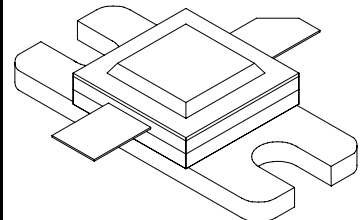
# TAN250A

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

## GENERAL DESCRIPTION

The TAN250A 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 55AW, Style 1



## ABSOLUTE MAXIMUM RATINGS

### Maximum Power Dissipation

Device Dissipation @25°C 575 W

### Maximum Voltage and Current

Collector to Base Voltage ( $BV_{ces}$ ) 60 V

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

Collector Current ( $I_c$ ) 30 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	250			W
$P_{in}$	Power Input	$V_{cc} = 50$ Volts			60	W
$P_g$	Power Gain	PW = 20 $\mu$ sec	6.2	7.0		dB
$\eta_c$	Collector Efficiency	DF = 5%		40		%
VSWR	Load Mismatch Tolerance	F = 1090 MHz			5:1	

## FUNCTIONAL CHARACTERISTICS @ 25°C

$BV_{ebo}$	Emitter to Base Breakdown	$I_e = 20$ mA	4.0			V
$BV_{ces}$	Collector to Emitter Breakdown	$I_c = 25$ mA	60			V
$h_{FE}$	DC - Current Gain	$V_{ce} = 5V, I_c = 1$ A	10			
$\theta_{jc}^2$	Thermal Resistance				.3	°C/W

NOTE 1: At rated output power and pulse conditions  
2. At rated pulse conditions

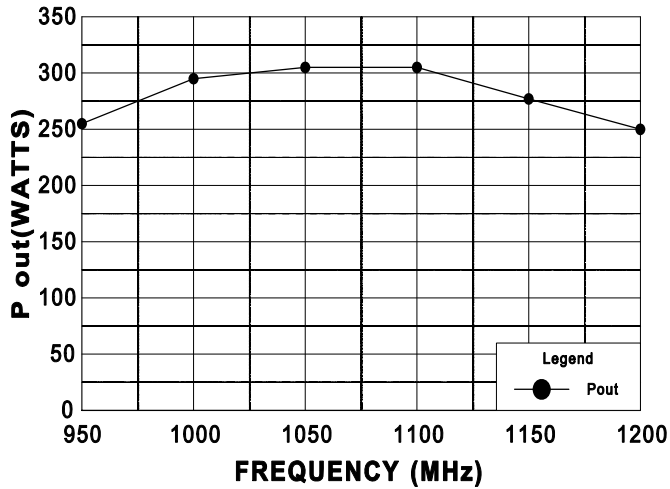
Revision A, August 2010

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Microsemi Corporation 3000 Oakmead Village Drive, Santa Clara, CA 95051-0808 Tel. 408 / 986-8031

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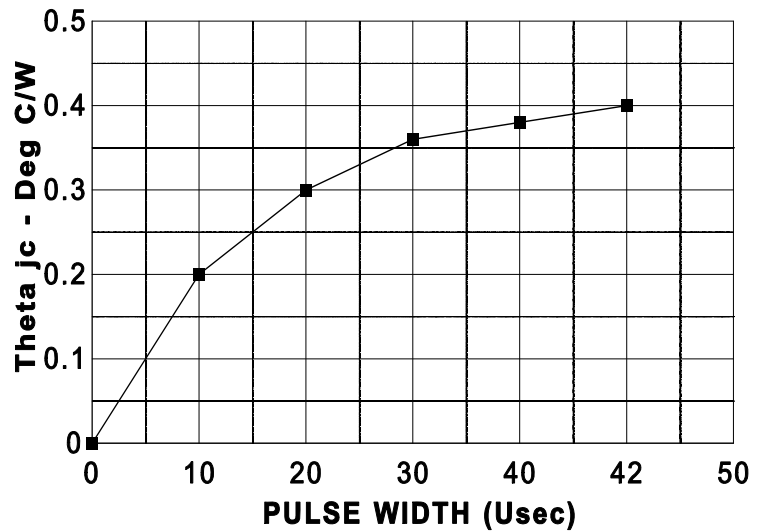
## BROADBAND POWER OUTPUT vs FREQUENCY

Vcc = 50 V, Pin = 60 W



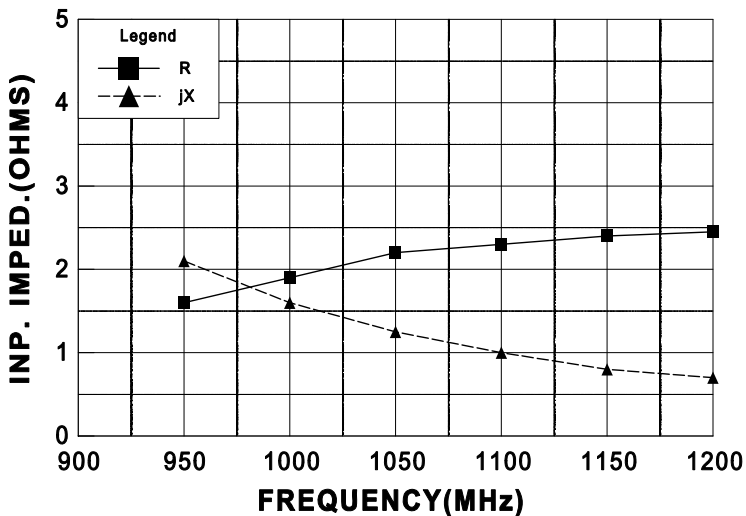
## THERMAL RESISTANCE vs PULSE WIDTH

Vcc = 50 V, Pin = 60 W, Duty 5%



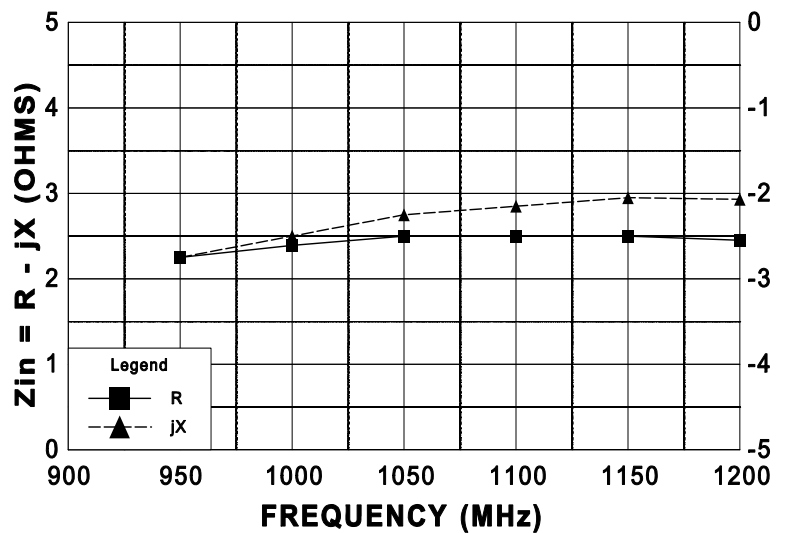
## SERIES INPUT IMPEDANCE vs FREQUENCY

Vcc = 50 V, Po = 250 W



## SERIES LOAD IMPEDANCE vs FREQUENCY

Vcc = 50 V, Po = 250 W

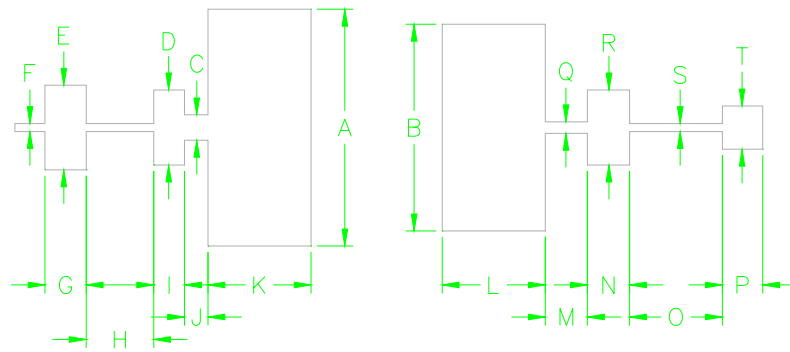


June 1996

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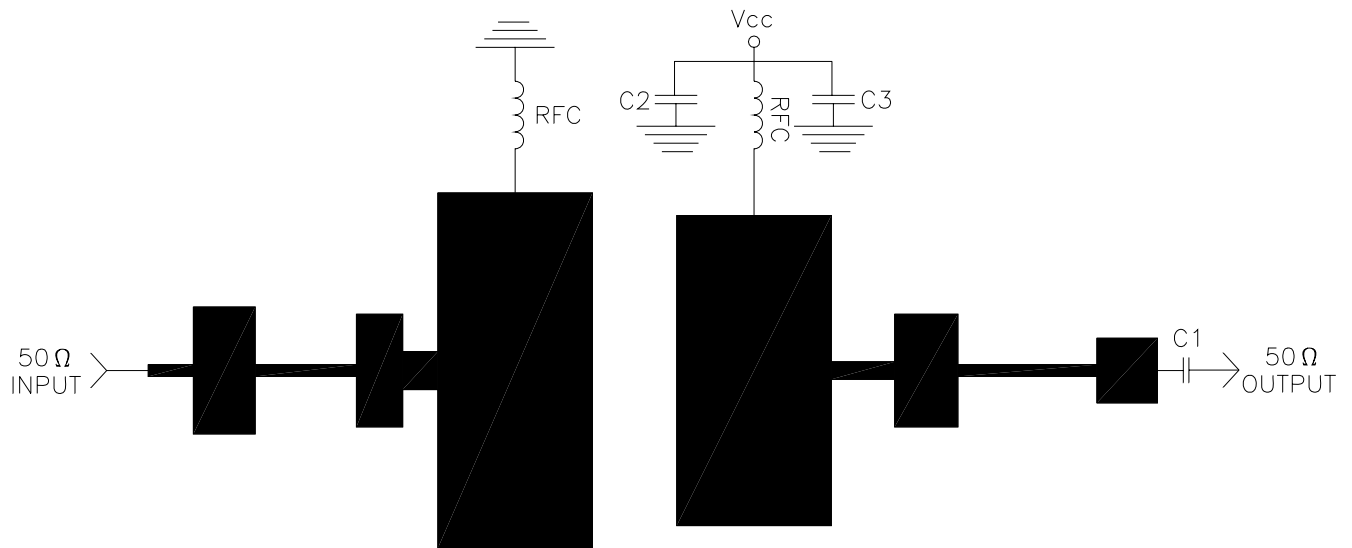
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DIM	INCHES
A	1.260
B	1.100
C	.135
D	.400
E	.450
F	.042
G	.220
H	.360
I	.160
J	.125
K	.550
L	.550
M	.225
N	.250
O	.495
P	.215
Q	.062
R	.400
S	.042
T	.230

### 960-1215 MHz BROADBAND TEST AMPLIFIER



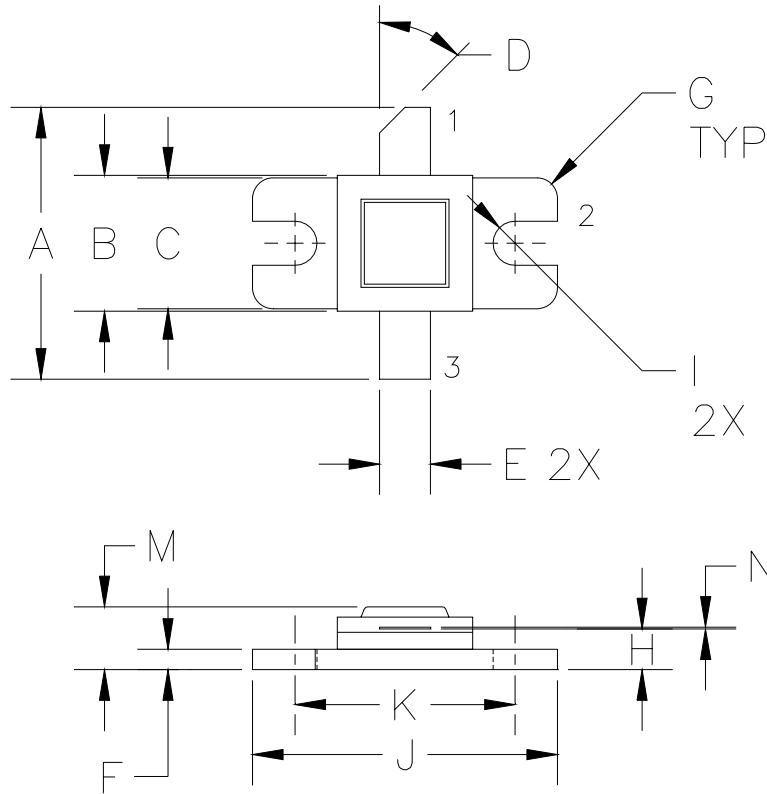
PCB—.015" TFE, 2 oz, CU. type "GT",  $\epsilon_r = 2.55$   
 C1, C2 - 82pf Chip  
 C3-250 MFD

DWG NO.

TAN 250A

REVISIONS

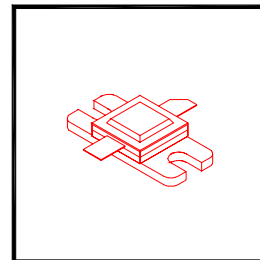
ZONE	REV	DESCRIPTION	DATE	APPROVED
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DIM	MILLIMETER	±TOL	INCHES	±TOL
A	20.32	.76	.800	.050
B	10.16	.13	.400	.005
C	9.78	.13	.385	.005
D	45°	5°	45°	5°
E	3.81	.13	.150	.005
F	1.52	.13	.060	.005
G	1.52R	.13	.060R	.005
H	3.05	.13	.120	.005
I	3.30 DIA	.13	.130 DIA	.005
J	22.86	.13	.900	.005
K	16.51	.13	.650	.005
M	4.70	REF	.185	REF
N	0.13	.02	.005	.001

STYLE 1:  
 PIN1 = COLLECTOR  
 2 = BASE  
 3 = EMITTER

STYLE 2:  
 PIN1 = COLLECTOR  
 2 = EMITTER  
 3 = BASE



CAGE	DWG NO.	REV
0PJR2	55AW	A
SCALE	SHEET	
2/1		