

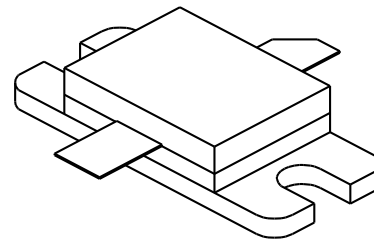
TAN 300

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

GENERAL DESCRIPTION

The TAN 300 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 55KT Style 1



ABSOLUTE MAXIMUM RATINGS

Maximum Power Dissipation @ 25°C ²	1166 Watts
Maximum Voltage and Current	
BVces Collector to Base Voltage	65 Volts
BVebo Emitter to Base Voltage	2.0 Volts
Ic Collector Current	20 Amps
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
Pout	Power Out	F = 960-1215 MHz	300			Watts
Pin	Power Input	Vcc = 50 Volts			60	Watts
Pg	Power Gain	PW = 10 μsec	6.6			dB
η_c	Collector Efficiency	DF = 10%		45		%
VSWR	Load Mismatch Tolerance	F = 1090 MHz			10:1	

BVebo	Emitter to Base Breakdown	Ie = 25 mA	2.0			Volts
BVces	Collector to Emitter Breakdown	Ic = 50 mA	65			Volts
h_{FE}	DC - Current Gain	Ic = 1A, Vce = 5 V	10			
θ_{jc}²	Thermal Resistance			.15		°C/W

Note 1: At rated output power and pulse conditions

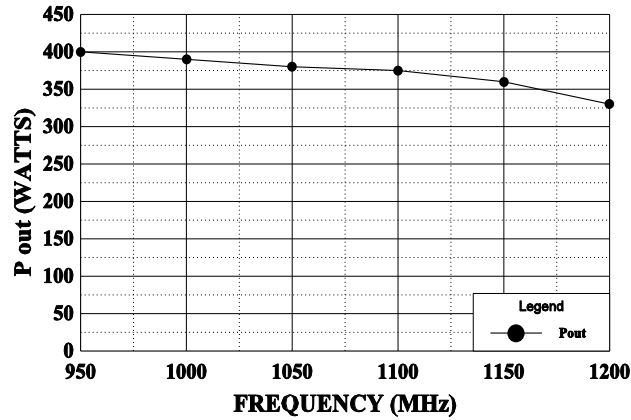
2: At rated pulse conditions

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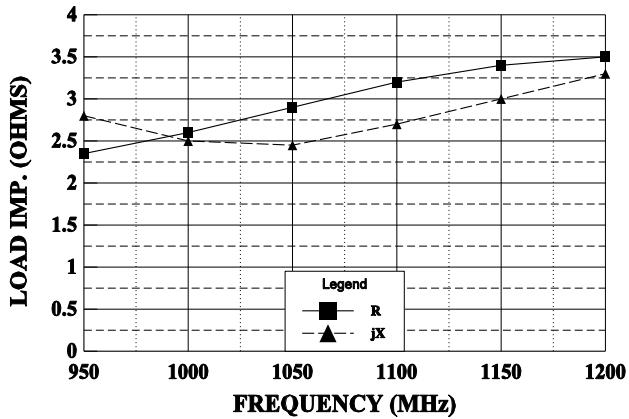
BROADBAND POWER OUTPUT vs FREQUENCY

Vcc = 50 V, Pin = 60 W



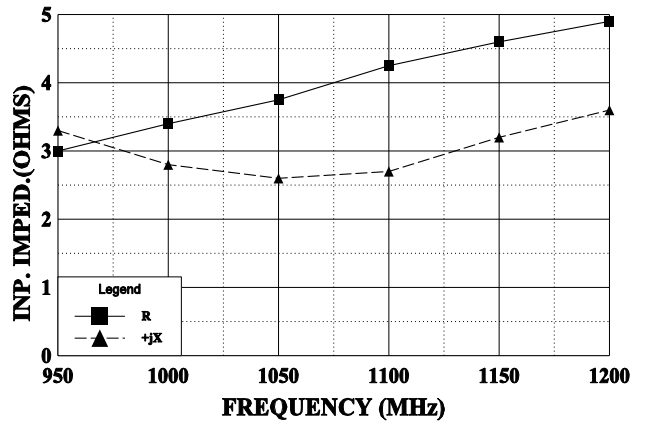
SERIES COLLECTOR LOAD IMPEDANCE

Vcc = 50 V, Pin = 60 W



SERIES INPUT IMPEDANCE vs FREQUENCY

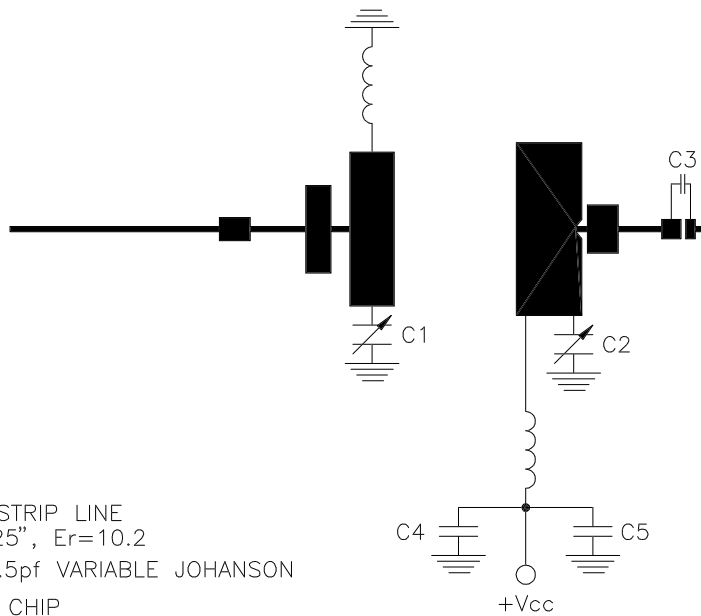
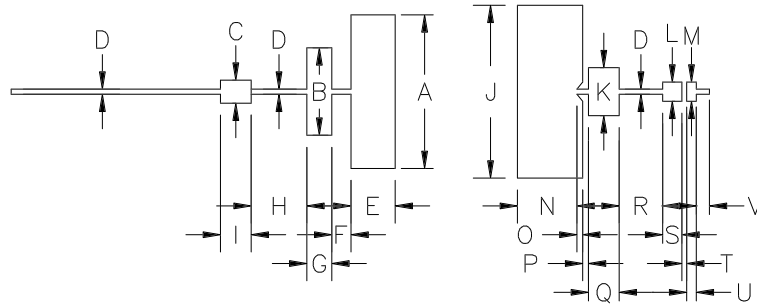
Vcc = 50 V, Pin = 60 W



REVISIONS

ZONE	REV	DESCRIPTION	DATE	APPROVED
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DIM	INCHES
A	.800
B	.455
C	.120
D	.026
E	.230
F	.100
G	.130
H	.290
I	.160
J	.900
K	.250
L	.100
M	.100
N	.310
O	.030
P	.030
Q	.160
R	.227
S	.100
T	.025
U	.050
V	.068



- MICROSTRIP LINE
t=0.025", Er=10.2
- C1,C2 = 0.3-3.5pf VARIABLE JOHANSON
- C3 = 100pf CHIP
- C4 = 0.1μfd
- C5 = 220μfd @ 65V