GHz TECHNOLOGY
RF·MICROWAVE SILICON POWER TRANSISTORS

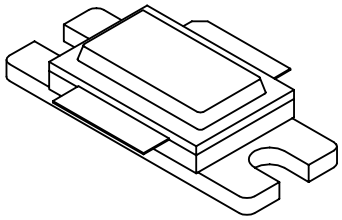
TCS600

600 Watts, 50 Volts, Pulsed
Avionics 1030 MHz

GENERAL DESCRIPTION

The TCS600 is a high power COMMON BASE bipolar transistor. It is designed for pulsed systems in the frequency band 1030/1090 MHz, with the pulse width and duty required for TCAS applications. 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
55ST Style 1



ABSOLUTE MAXIMUM RATINGS

Maximum Power Dissipation

Device Dissipation @25°C	1458	W

Maximum Voltage and Current

Collector to Base Voltage (BV_{ces})	65	V
Emitter to Base Voltage (BV_{ebo})	3.5	V
Collector Current (I_c)	40	A

Maximum Temperatures

Storage Temperature	-65 to +200	°C
Operating Junction Temperature	+230	°C

ELECTRICAL CHARACTERISTICS @ 25°C

SYMBOL	CHARACTERISTICS	TEST CONDITIONS	MIN	TYP	MAX	UNITS
P_{out}	Power Out	F = 1030 MHz	600			W
P_{in}	Power Input	V_{CC} = 50 Volts			80	W
P_g	Power Gain	PW = 32 μsec	8.7			dB
η_c	Collector Efficiency	DF = 1%		50		
Pd	Pulse Droop			0.5		dB
VSWR	Load Mismatch Tolerance	F = 1030 MHz			4:1	

FUNCTIONAL CHARACTERISTICS @ 25°C

BV_{ebo}*	Emitter to Base Breakdown	Ie = 50 mA	3.5			V
BV_{ces}	Collector to Emitter Breakdown	Ic = 100 mA	65			V
h_{FE}*	DC – Current Gain	Vce = 5V, Ic = 5A	20			
θjc^1	Thermal Resistance				0.12	°C/W

NOTE 1: At rated output power and pulse conditions.
*: Not measureable due to internal EB returns.

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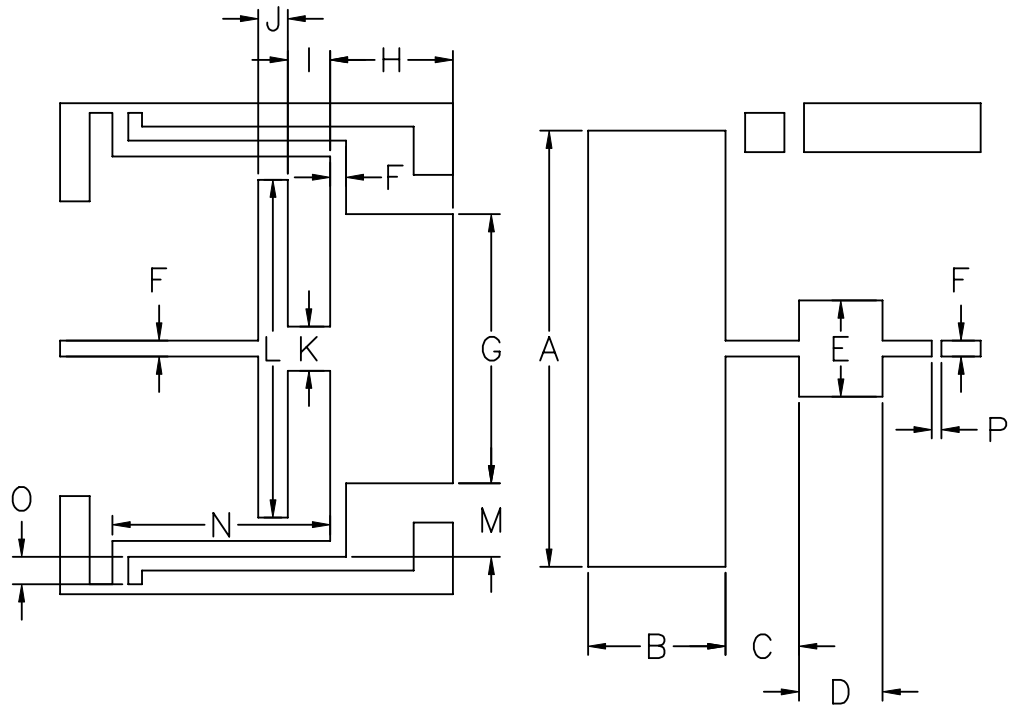
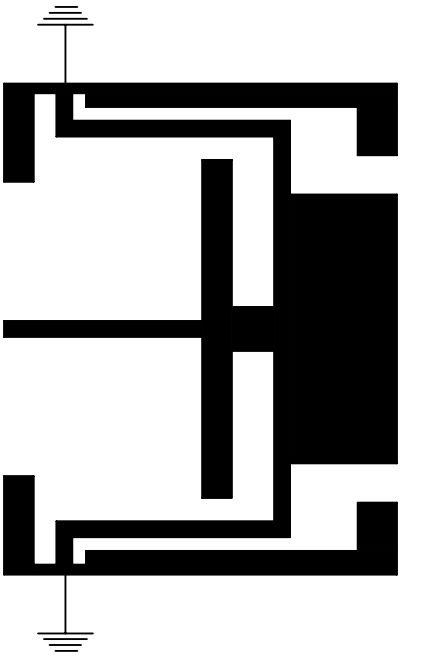
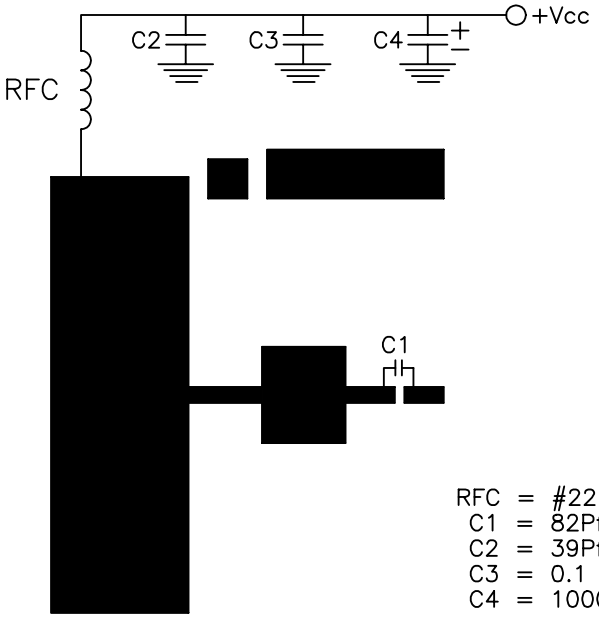
REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED



DIM	INCHES
A	2.220
B	.700
C	.375
D	.425
E	.490
F	.081
G	1.370
H	.625
I	.216
J	.150
K	.225
L	1.720
M	.375
N	1.108
O	.140
P	.050

MATERIAL = TEFLON FIBRE GLASS
DIELECTRIC THICKNESS = 0.030"
Er = 2.55





RFC = #22 WIRE 0.5" LONG
C1 = 82Pf ATC B
C2 = 39Pf ATC B
C3 = 0.1 MFD
C4 = 1000 MFD @ 63V

CHz TECHNOLOGY	DWG NO. TCS600