



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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10502

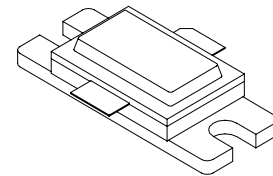
**500 Watts, 50 Volts, Pulsed
Avionics 1030 / 1090 MHz**

GENERAL DESCRIPTION

The 10502 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 MODE-S & 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

**55SM
Common Base**



ABSOLUTE MAXIMUM RATINGS

Maximum Power Dissipation

Device Dissipation @ 25°C¹ 1458 Watts

Maximum Voltage and Current

BV_{ces} Collector to Emitter Voltage 65 Volts

BV_{ebo} Emitter to Base Voltage 3.5 Volts

I_c Collector Current 40 Amps

Maximum Temperatures

Storage Temperature - 65 to + 200°C

Operating Junction Temperature + 230°C

ELECTRICAL CHARACTERISTICS @ 25 °C

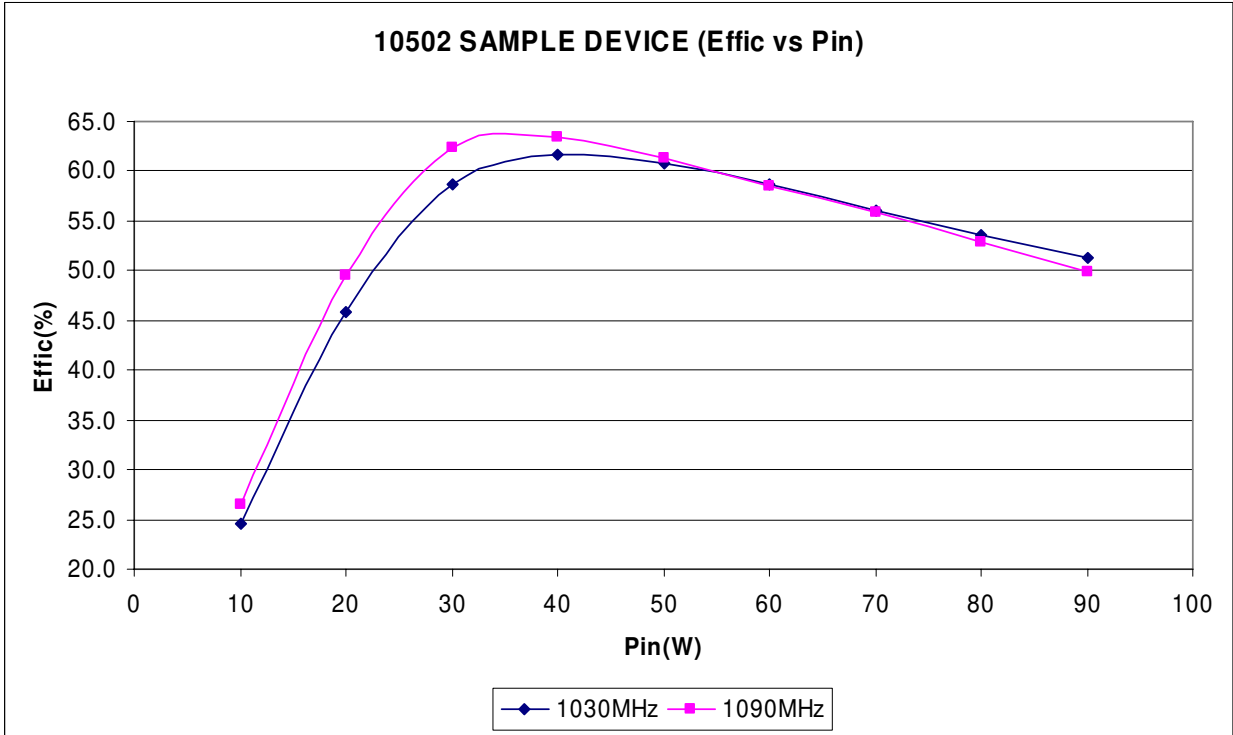
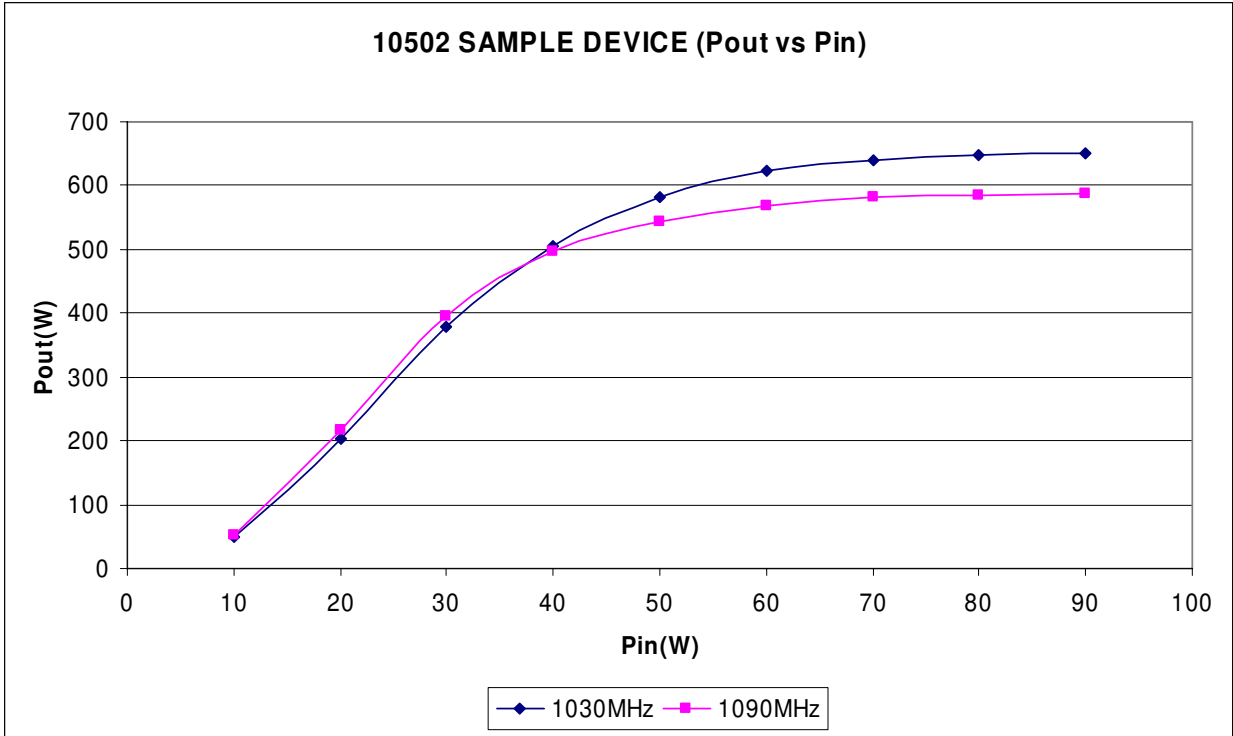
SYMBOL	CHARACTERISTICS	TEST CONDITIONS	MIN	TYP	MAX	UNITS
P _{OUT}	Output Power	F = 1030/1090 MHz	500			W
P _{IN}	Input Power	V _{CC} = 50 Volts			70	W
P _G	Power Gain	PW = 32 μsec, DF = 2%	8.5			dB
η _c	Collector Efficiency		40			%
RL	Return Loss		10			dB
VSWR	Load Mismatch Tolerance ¹	F = 1090 MHz	10:1			

BV _{EBO}	Emitter to Base Breakdown	I _e = 15 mA	3.5			Volts
BV _{CES}	Collector to Emitter Breakdown	I _c = 60 mA	65			Volts
I _{CBO}	Collector to Base Leakage	V _{CB} = 36V			25	mA
h _{FE}	DC - Current Gain	I _c = 5 A, V _{ce} = 5 V	20			
θ _{jc} ¹	Thermal Resistance				0.12	°C/W

Note 1: At rated output power and pulse conditions

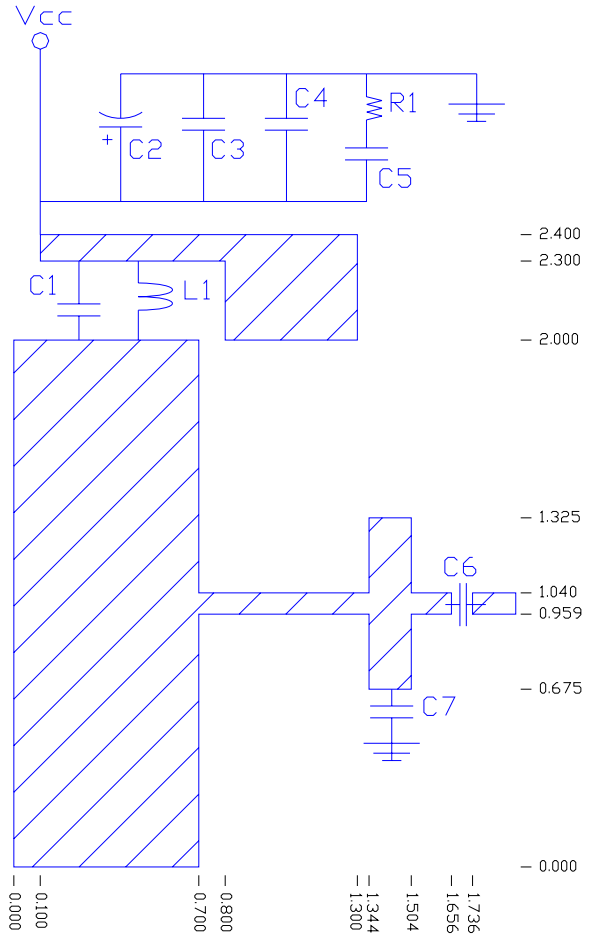
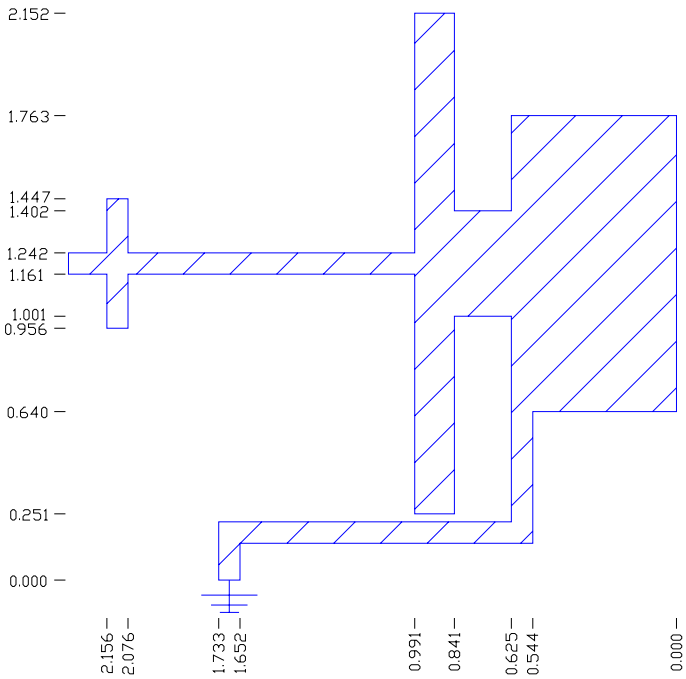
Rev. C: August 2010

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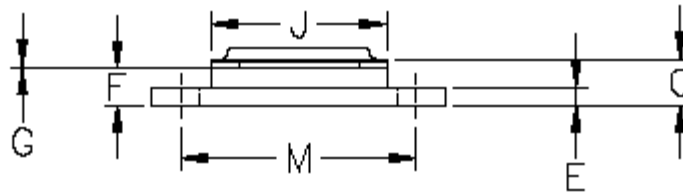
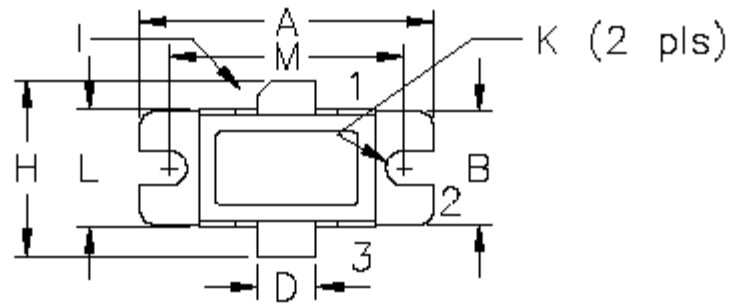
C1=1.5pF ATC Chip Cap; Size B
 C2=4700uF Electrolytic; 63V
 C3=47pF ATC Chip Cap; Size B
 C4=C6=100pF ATC Chip Cap; Size B
 C5=0.1uF ATC Chip Cap; Size B
 C7=0.5pF ATC Chip Cap; Size B
 R1=1ohm Chip Resistor; Size 1206
 L1=18 AWG; 2 Turns; I.D.=0.1"; L=1.4"
 Substrate: Er=2.55; H=31mils



DIMENSIONS IN INCHES

 POWER PRODUCTS GROUP	10502 TEST CIRCUIT	Er=2.55; H=31mils
	Casey Tou	7/13/09

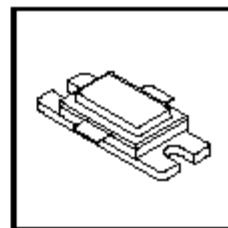
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DIM	MILLIMETER	TOL	INCHES	TOL
A	25.40	.25	1.000	.010
B	9.78	.25	.385	.010
C	4.87	.19	.192	.007
D	5.08	.13	.200	.005
E	1.53	.13	.060	.005
F	3.18	.13	.125	.005
G	0.08	$+.00/-00$.003	$+.002/-000$
H	19.05	0.51	.750	.020
I	45°	5°	45°	5°
J	15.24	.25	.600	.010
K	3.05 DIA	.13	.120 DIA	.005
L	10.15	.13	.400	.005
M	20.32	.25	.800	.010

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

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



DWG NO.

55SM