



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!



Contact us

Tel: +86-755-8981 8866 Fax: +86-755-8427 6832

Email & Skype: info@chipsmall.com Web: www.chipsmall.com

Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China

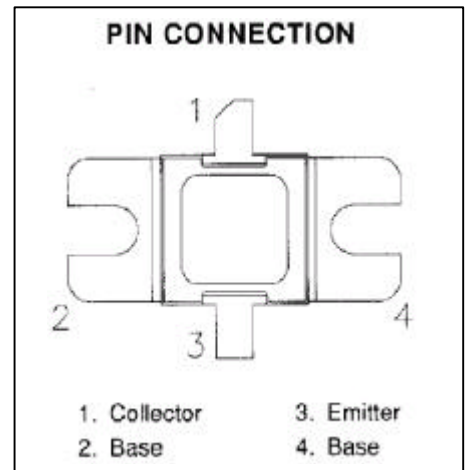
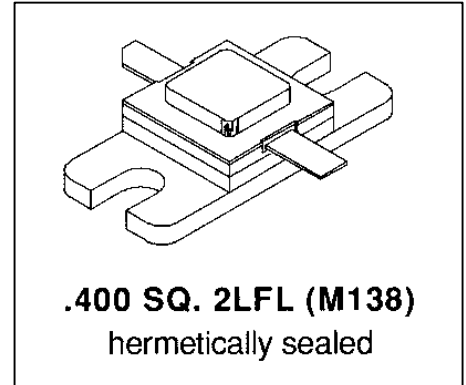


MS2393

RF AND MICROWAVE TRANSISTORS AVIONICS APPLICATIONS

Features

- **Designed For High Power Pulse IFF, DME, and TACAN Applications**
- **200 W (typ.) IFF 1030 – 1090 MHz**
- **150 W (min.) DME 1025 – 1150 MHz**
- **140 W (typ.) TACAN 960 – 1215 MHz**
- **8.2 dB Gain**
- **Refractory Gold Metallization**
- **Ballasting And Low Thermal Resistance For Reliability And Ruggedness**
- **20:1 Load VSWR At Specified Operating Conditions**
- **Input And Output Matched Common Base Configuration**



DESCRIPTION:

The MS2393 is a gold metallized, silicon NPN power transistor. The MS2393 is designed for applications requiring high peak power and low duty cycles such as IFF, DME and TACAN. The MS2393 is packaged in a metal/ceramic package with internal input/output matching, resulting in improved broadband performance and low thermal resistance.

ABSOLUTE MAXIMUM RATINGS (T_{case} = 25°C)

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage	65	V
V_{CES}	Collector-Emitter Voltage	65	V
V_{EBO}	Emitter-Base Voltage	3.5	V
I_C	Device Current	11	A
P_{DISS}	Power Dissipation	583	W
T_J	Junction Temperature	+200	°C
T_{STG}	Storage Temperature	-65 to +150	°C

Thermal Data

R_{TH(j-c)}	Junction-Case Thermal Resistance	0.30	°C/W
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ELECTRICAL SPECIFICATIONS (Tcase = 25 °C)

STATIC

Symbol	Test Conditions	Value			Units
		Min.	Typ.	Max.	
BV_{CBO}	$I_C = 10 \text{ mA}$ $I_E = 0 \text{ mA}$	65			V
BV_{CES}	$I_C = 25 \text{ mA}$ $V_{BE} = 0 \text{ V}$	65			V
BV_{EBO}	$I_E = 5 \text{ mA}$ $I_C = 0 \text{ mA}$	3.5			V
I_{CES}	$V_{CE} = 50 \text{ V}$ $I_E = 0 \text{ mA}$			10	mA
h_{FE}	$V_{CE} = 5 \text{ V}$ $I_C = 300 \text{ mA}$	5			

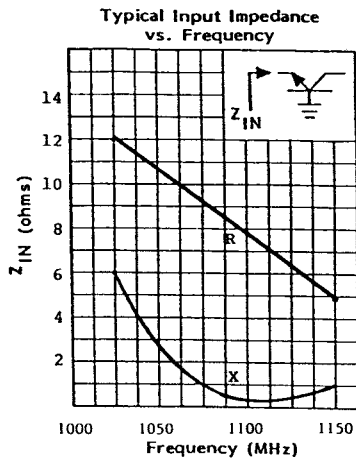
DYNAMIC

Symbol	Test Conditions	Value			Units
		Min.	Typ.	Max.	
P_{OUT}	$f = 1025 - 1150 \text{ MHz}$ $P_{IN} = 25 \text{ W}$ $V_{CE} = 50 \text{ V}$	150			W
G_P	$f = 1025 - 1150 \text{ MHz}$ $P_{IN} = 25 \text{ W}$ $V_{CE} = 50 \text{ V}$	8.2			dB

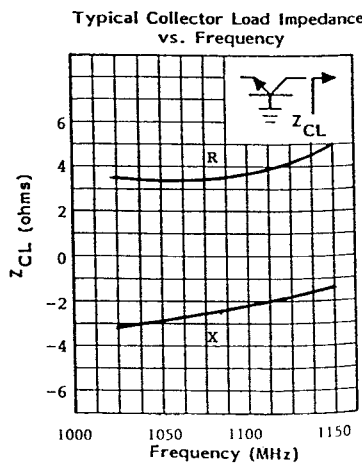
Condition: Pulse Width = 10µS, Duty Cycle = 1%

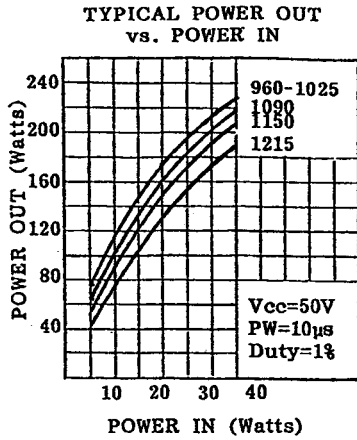
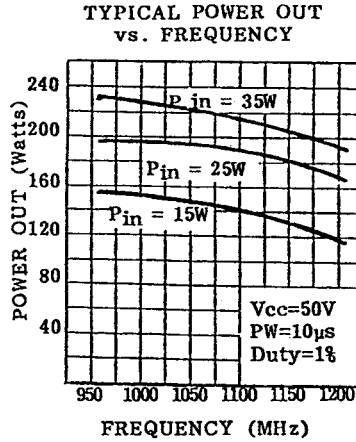
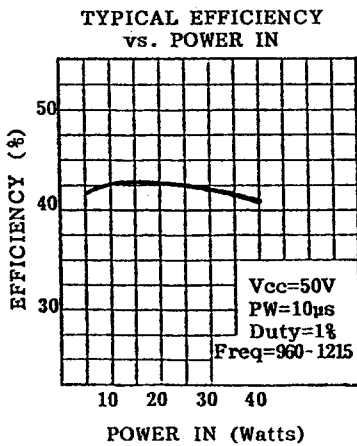
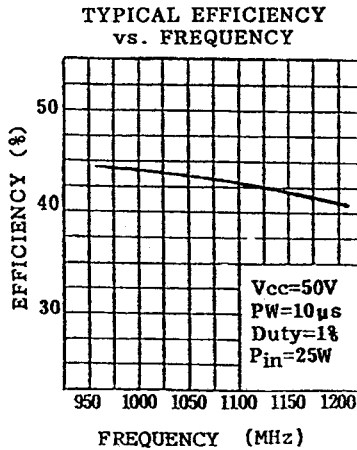
IMPEDANCE DATA

TYPICAL INPUT IMPEDANCE

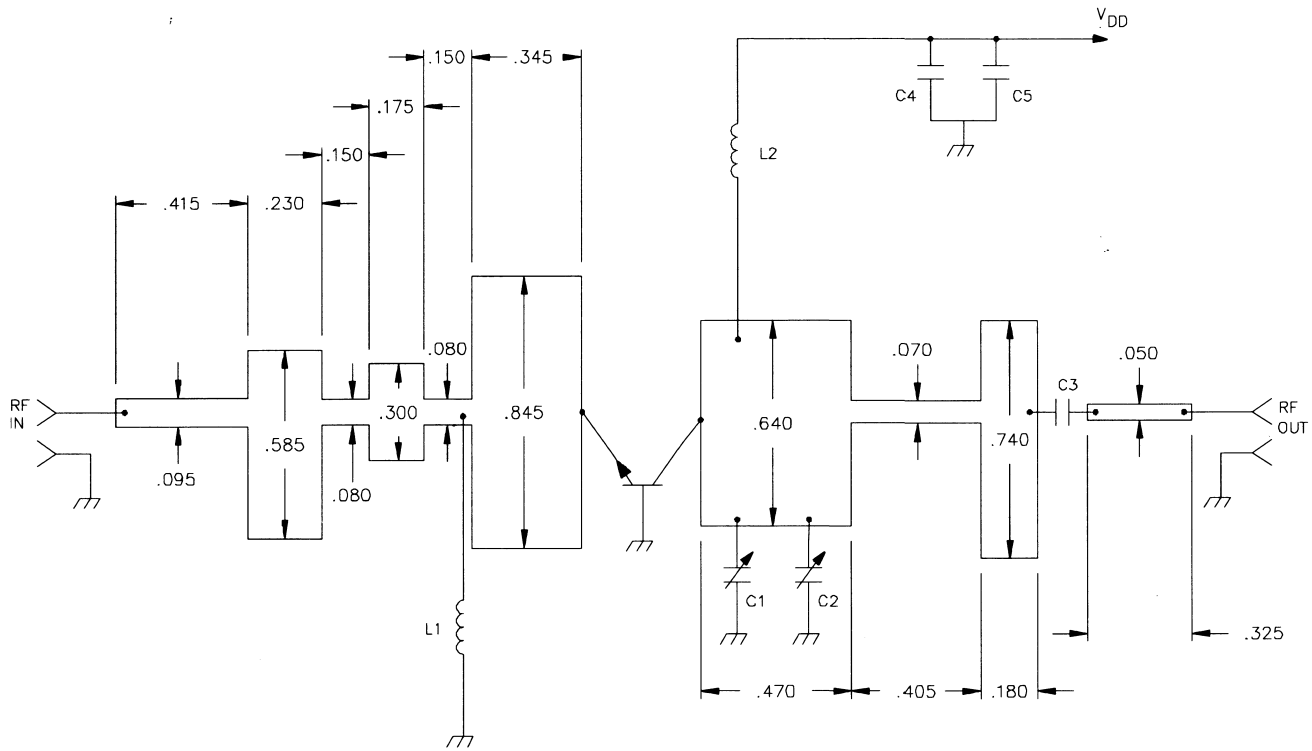


TYPICAL COLLECTOR LOAD IMPEDANCE



TYPICAL PERFORMANCE
POWER OUTPUT vs POWER INPUT

POWER OUTPUT vs FREQUENCY

EFFICIENCY vs POWER INPUT

EFFICIENCY vs FREQUENCY


TEST CIRCUIT

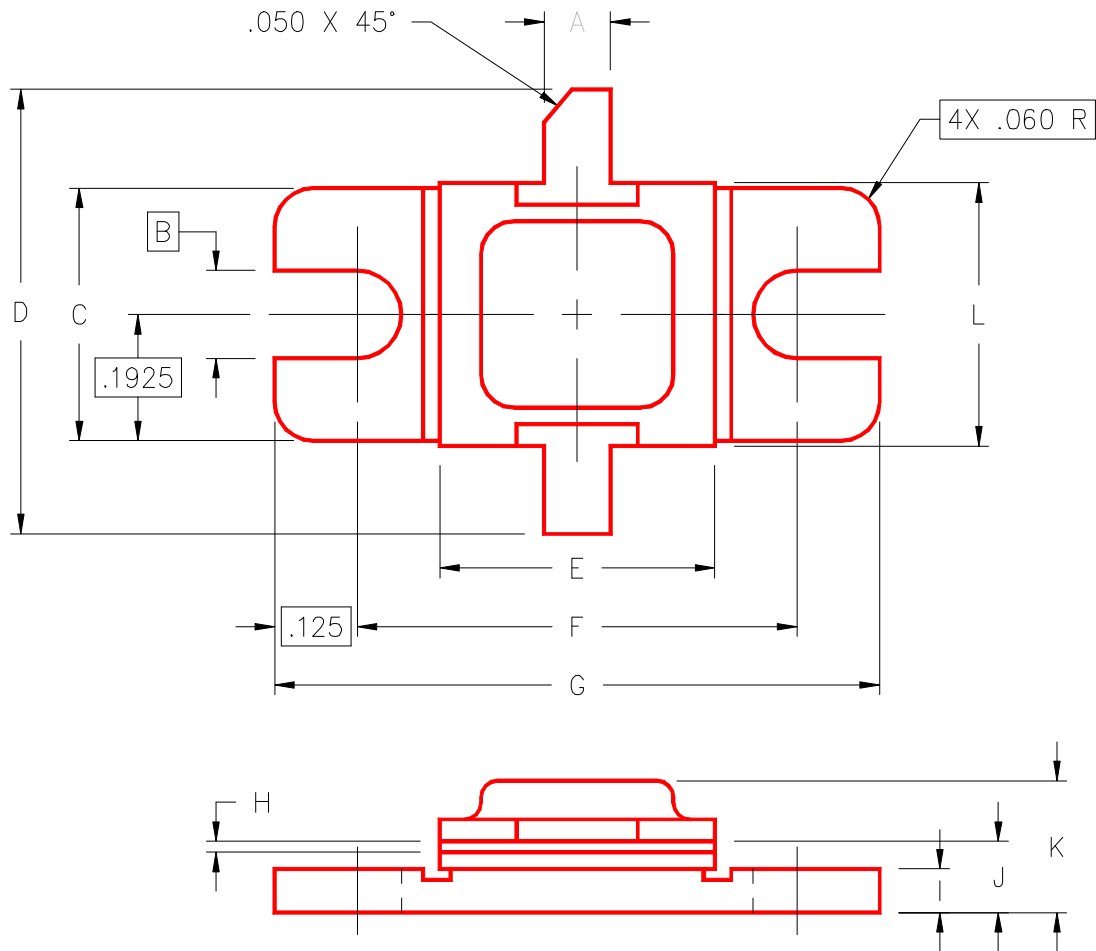


- C1, C2 : .6 - 4.5pF Gigatrim
- C3 : .100 x .100 120pF Chip Capacitor
- C4 : .100 x .100 470pF Chip Capacitor
- C5 : 100 μ F Electrolytic

- L1 : #20 AWG
- L2 : 3 Turns, #20 AWG Wound on #32 Drill Bit

PACKAGE MECHANICAL DATA

PACKAGE STYLE M138



	MINIMUM INCHES/MM	MAXIMUM INCHES/MM		MINIMUM INCHES/MM	MAXIMUM INCHES/MM
A	.095/2,41	.105/2,67	I	.055/1,40	.065/1,65
B	.125/3,18		J	.105/2,67	.125/3,18
C	.380/9,65	.390/9,91	K		.230/5,84
D	.790/20,07		L	.392/9,96	.402/10,21
E	.392/9,96	.402/10,21			
F	.645/16,38	.655/16,64			
G	.895/22,73	.905/22,99			
H	.002/0,05	.006/0,15			