



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



MS2211

RF & MICROWAVE TRANSISTORS AVIONICS APPLICATIONS

Features

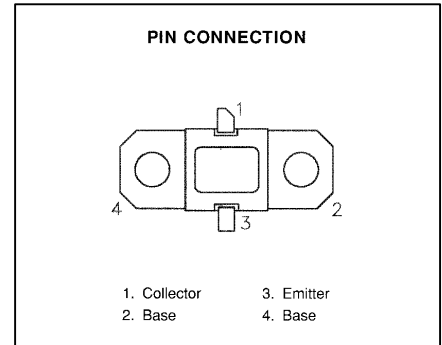
- 960-1215 MHz
- COMMON BASE
- GOLD METALLIZATION
- POUT = 6 W MIN. WITH 9.3 dB GAIN
- 5:1 VSWR CAPABILITY



DESCRIPTION:

The MS2211 is a silicon NPN bipolar device designed for specialized avionics applications, including JTIDS, utilizing pulse formats with short pulse widths and high burst rates or overall duty cycles.

The MS2211 is housed in a hermetic package and utilizes internal input impedance matching. Gold metallization and emitter ballasting assures high reliability under operating conditions.



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

Symbol	Parameter	Value	Unit
P _{DISS}	Power Dissipation* (T _C ≤ 75°C)	25	W
I _C	Device Current*	0.9	A
V _{CC}	Collector-Supply Voltage	32	V
T _J	Junction Temperature (Pulsed RF Operation)	+250	°C
T _{STG}	Storage Temperature	-65 to +200	°C

Thermal Data

R _{TH(J-C)}	Junction-case Thermal Resistance*	7.0	°C/W
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* Applies only to rated RF amplifier operation

ELECTRICAL SPECIFICATIONS (T_{case} = 25°C)
STATIC

Symbol	Test Conditions		Value			Unit
			Min.	Typ.	Max.	
BV_{CBO}	I_C = 1mA	I_E = 0mA	48	---	---	V
BV_{CER}	I_C = 5mA	R_{BE} = 10 Ω	48	---	---	V
BV_{EBO}	I_E = 1mA	I_C = 0 mA	3.5	---	---	V
I_{CES}	V_{CE} = 28 V	V_{BE} = 0 V	-----	---	0.5	mA
h_{FE}	V_{CE} = 5 V	I_C = 250mA	30	---	300	---

DYNAMIC

Symbol	Test Conditions			Value			Unit
				Min.	Typ.	Max.	
P_{OUT}	f = 960-1215 MHz	V_{CC} = 28V	P_{IN} = 0.7W	6.0	---	---	W
G_p	f = 960-1215 MHz	V_{CC} = 28V	P_{IN} = 0.7W	9.3	---	---	dB
η	f = 960-1215 MHz	V_{CC} = 28V	P_{IN} = 0.7W	45	---	---	%

Pulse Format: 6.4 μS ON/ 6.6 μS OFF, repeat for 3mS, then OFF for 4.5125mS.

Conditions Duty Cycle: Burst: 49.2%, overall 20.8%

IMPEDANCE DATA

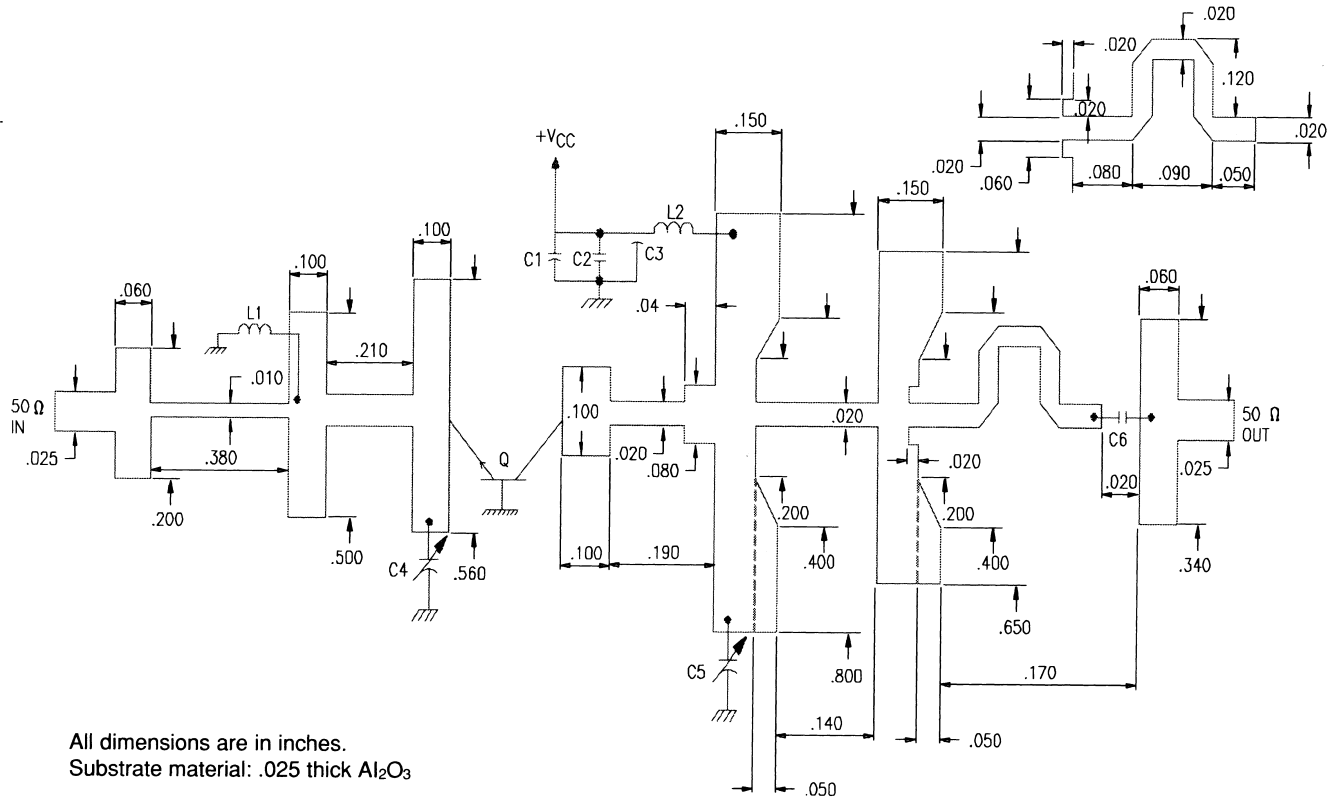
FREQ	Z _{IN} (Ω)	Z _{CL} (Ω)
960 MHz	8.2 + j8.5	10.5 + j12.9
1090 MHz	11.1 + j8.3	9.4 + j11.3
1215 MHz	15.6 + j6.8	9.0 + j8.3

P_{IN} = 0.7W

V_{CC} = 28V

MS2211

TEST CIRCUIT

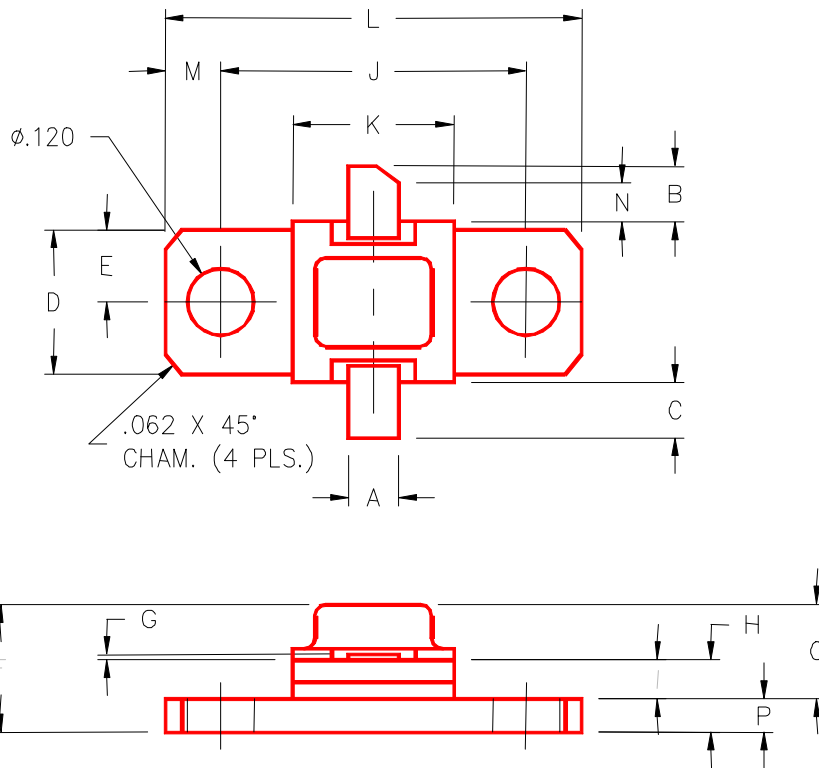


All dimensions are in inches.
Substrate material: .025 thick Al₂O₃

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|----|---------------------------------------------------|----|---------------------------------------------------|
| C1 | : 100 μF Electrolytic Capacitor, 63V | C5 | : .6 — 4.5 pF, 2 pls, Johanson Gigatrim Capacitor |
| C2 | : .1 μF Ceramic Capacitor | C6 | : 100 pF Chip Capacitor |
| C3 | : Feedthrough Bypass SCI 712-022 | L1 | : No. 26 Wire, 4 Turn |
| C4 | : .6 — 4.5 pF, 2 pls, Johanson Gigatrim Capacitor | L2 | : No. 26 Wire, 4 Turn |

PACKAGE MECHANICAL DATA

PACKAGE STYLE M222



	MINIMUM INCHES/MM	MAXIMUM INCHES/MM		MINIMUM INCHES/MM	MAXIMUM INCHES/MM
A	.100/2,54		J	.562/14,28	
B	.110/2,80		K	.310/7,87	
C	.110/2,80		L	.800/20,32	
D	.296/7,52		M	.119/3,02	
E	.148/3,76		N	.050/1,27	
F		.230/5,84	O		.170/4,32
G	.003/0,08	.006/0,15	P	.062/1,58	
H	.118/3,00	.131/3,33			
I	.059/1,50				