



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

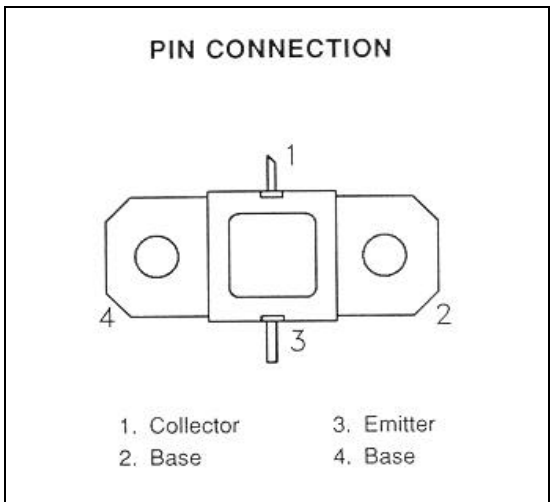
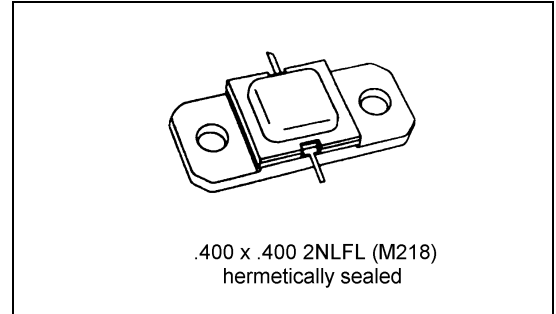
Email & Skype: info@chipsmall.com Web: www.chipsmall.com

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



**RF & MICROWAVE TRANSISTORS  
AVIONICS APPLICATIONS**
**Features**

- **GOLD METALLIZATION**
- **EMITTER SITE BALLASTED**
- **Pout = 85 W MINIMUM**
- **Gp = 7.5 dB**
- **OVERLAY GEOMETRY**
- **METAL/CERAMIC HERMETIC PACKAGE**
- **LOW THERMAL RESISTANCE**


**DESCRIPTION:**

The MS2214 is a silicon NPN bipolar transistor designed for avionics applications with high duty cycle requirements. Gold metallization and emitter ballasting provides long term reliability under JTIDS and similar pulse formats.

**ABSOLUTE MAXIMUM RATINGS      (Tcase = 25°C)**

Symbol	Parameter	Value	Unit
V <sub>CC</sub>	Collector-Supply Voltage*	40	V
I <sub>C</sub>	Device Current*	8.0	A
P <sub>DISS</sub>	Power Dissipation*	300	W
T <sub>J</sub>	Junction Temperature	+250	°C
T <sub>STG</sub>	Storage Temperature	- 65 to + 200	°C

**Thermal Data**

R <sub>TH(i-c)</sub>	Junction-Case Thermal Resistance*	0.75	°C/W
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\* Applies only to rated RF operation.

**ELECTRICAL SPECIFICATIONS (T<sub>case</sub> = 25 °C)**
**STATIC**

Symbol	Test Conditions		Value			Unit
			Min.	Typ.	Max.	
<b>BV<sub>CBO</sub></b>	<b>I<sub>C</sub> = 25mA</b>	<b>I<sub>E</sub> = 0 mA</b>	<b>55</b>	----	----	<b>V</b>
<b>BV<sub>CER</sub></b>	<b>I<sub>C</sub> = 25 mA</b>	<b>R<sub>BE</sub> = 10 Ω</b>	<b>55</b>	----	----	<b>V</b>
<b>BV<sub>EBO</sub></b>	<b>I<sub>E</sub> = 10 mA</b>	<b>I<sub>C</sub> = 0 mA</b>	<b>3.5</b>	----	----	<b>V</b>
<b>I<sub>CES</sub></b>	<b>V<sub>CE</sub> = 35 V</b>	<b>V<sub>BE</sub> = 0 V</b>	----	----	<b>20</b>	<b>mA</b>
<b>h<sub>FE</sub></b>	<b>V<sub>CE</sub> = 5 V</b>	<b>I<sub>C</sub> = 2A</b>	<b>20</b>	----	<b>200</b>	----

**DYNAMIC**

Symbol	Test Conditions			Value			Unit
				Min.	Typ.	Max.	
<b>P<sub>OUT</sub></b>	<b>f = 960 - 1215 MHz</b>	<b>P<sub>IN</sub> = 15 W</b>	<b>V<sub>CC</sub> = 35 V</b>	<b>85</b>	----	----	<b>W</b>
<b>η<sub>C</sub></b>	<b>f = 960 - 1215 MHz</b>	<b>P<sub>IN</sub> = 15 W</b>	<b>V<sub>CC</sub> = 35 V</b>	<b>40</b>	----	----	<b>%</b>
<b>G<sub>P</sub></b>	<b>f = 960 - 1215 MHz</b>	<b>P<sub>IN</sub> = 15 W</b>	<b>V<sub>CC</sub> = 35 V</b>	<b>7.5</b>	----	----	<b>dB</b>
<b>Note:</b>	<b>Pulse Format: 6.4 μS on 6.6 μS off, repeat for 3.3 ms. Duty Cycle: Burst 49.2%, overall 20.8%</b>						

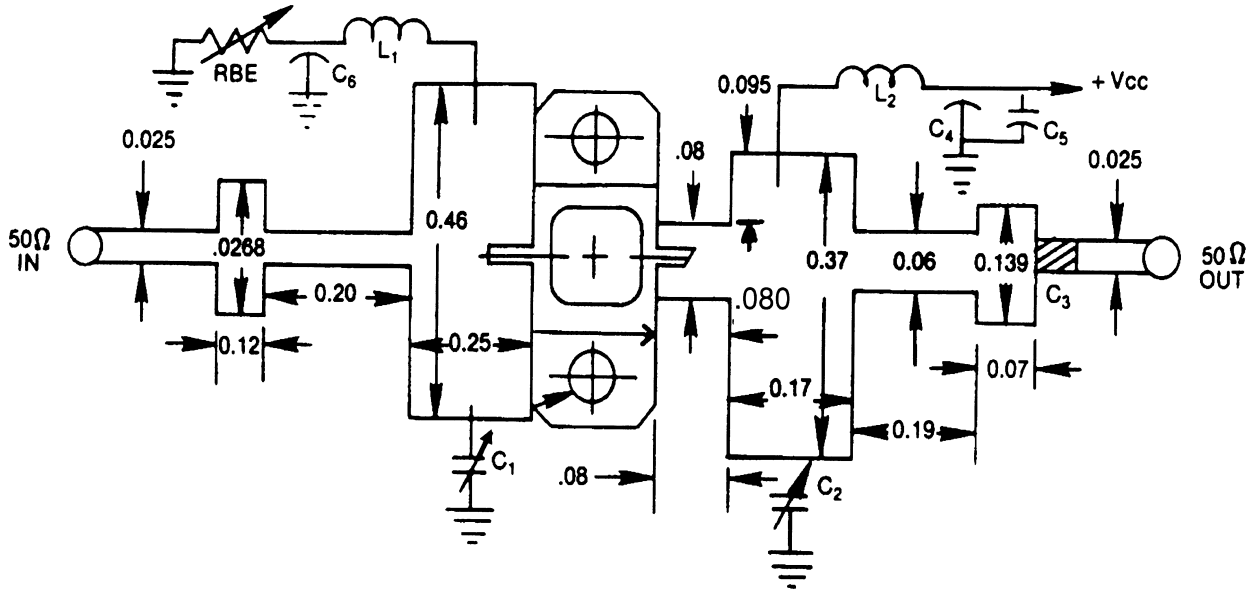
**IMPEDANCE DATA:**

<b>FREQUENCY</b>	<b>Z<sub>in</sub></b>	<b>Z<sub>cl</sub></b>
<b>960 MHz</b>	<b>3.0 + j5.0</b>	<b>7.0 - j5.0</b>
<b>1090 MHz</b>	<b>5.5 + j5.5</b>	<b>3.7 - j1.8</b>
<b>1215 MHz</b>	<b>5.3 + j4.5</b>	<b>3.0 - j2.5</b>

**P<sub>in</sub> = 15W    V<sub>cc</sub> = 35V**

**TEST CIRCUIT**

Ref. Dwg. No. J-313119



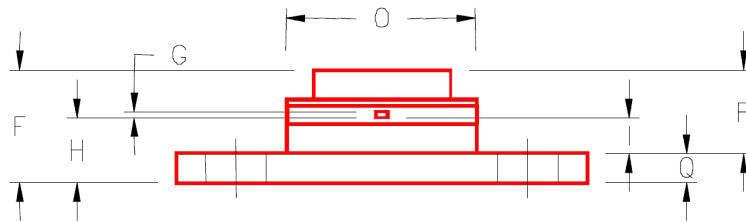
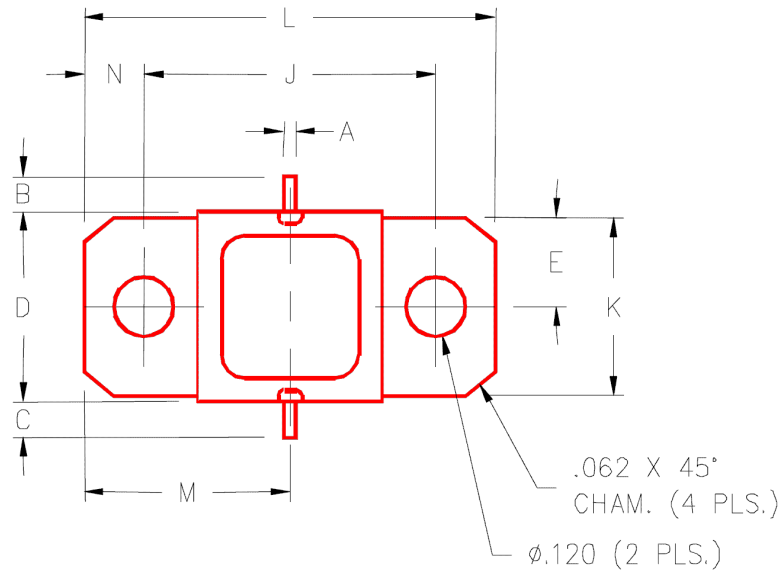
All dimensions are in inches.

Substrate material: .025 thick  $Al_2O_3$  ( $Er = 9.6$ )

- |    |  |    |  |
|----|--|----|--|
| C1 | : 0.3—3.5 pF Variable Johanson Capacitor or Equiv. | C5 | : 100 MF, Electrolytic Capacitor, 50V    |
| C2 | : 0.3—3.5 pF Variable Johanson Capacitor or Equiv. | C6 | : 1500 pF Erie RF Feedthrough, or Equiv. |
| C3 | : 100 pF Chip Capacitor                            | L1 | : No. 32 Wire, 4 Turns 1/16" I.D.        |
| C4 | : 1500 pF Erie RF Feedthrough, or Equiv.           | L2 | : No. 32 Wire, 4 Turns 1/16" I.D.        |

**PACKAGE MECHANICAL DATA**

PACKAGE STYLE M218



	MINIMUM INCHES/MM	MAXIMUM INCHES/MM		MINIMUM INCHES/MM	MAXIMUM INCHES/MM
A	.025/0,64		J	.650/16,51	
B	.100/2,54		K	.386/9,80	
C	.100/2,54		L	.900/22,86	
D	.395/10,03	.407/10,34	M	.450/11,43	
E	.193/4,90		N	.125/3,18	
F		.230/5,84	O	.405/10,29	
G	.004/0,10	.007/0,18	P		.170/4,32
H	.118/3,00	.131/3,33	Q	.062/1,58	
I	.063/1,60				