



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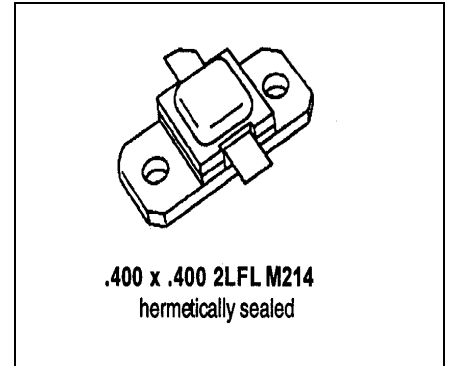
Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China



RF & MICROWAVE TRANSISTORS L-BAND RADAR APPLICATIONS

Features

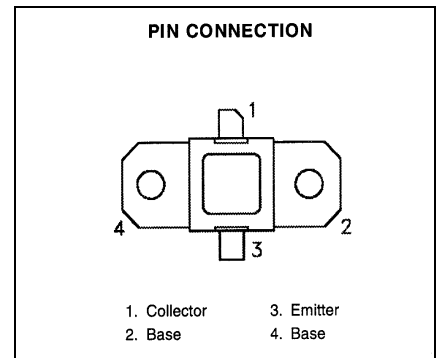
- 1090 MHz
- 50 VOLTS
- $P_{OUT} = 75$ WATTS
- $G_P = 9.2$ dB MINIMUM
- 10:1 VSWR CAPABILITY
- COMMON BASE CONFIGURATION



DESCRIPTION:

The MS2228 device is a high power Class C transistor specifically designed for L-Band Avionics transponder/interrogator pulsed output and driver applications.

This device is capable of operation over a wide range of pulse widths, duty cycles, and is capable of withstanding 10:1 output VSWR at rated RF conditions. Internal input and output matching provide optimum performance and product consistency.



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

| Symbol | Parameter | Value | Unit |
|------------|--------------------------|-------------|------|
| P_{DISS} | Power Dissipation | 175 | W |
| I_C | Device Current | 5.4 | A |
| V_{CC} | Collector-Supply Voltage | 55 | V |
| T_J | Junction Temperature | 200 | °C |
| T_{STG} | Storage Temperature | -65 to +200 | °C |

Thermal Data

| | | | |
|---------------|-----------------------------------|------|------|
| $R_{TH(J-C)}$ | Thermal Resistance Junction-case* | 0.86 | °C/W |
|---------------|-----------------------------------|------|------|

Revision A, October 2009

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

| Symbol | Test Conditions | Value | | | Unit |
|-------------------------|--|------------|------|----------|-----------|
| | | Min. | Typ. | Max. | |
| BV_{CBO} | I_C = 10 mA I_E = 0 mA | 65 | --- | --- | V |
| BV_{EBO} | I_E = 4 mA I_C = 0 mA | 3.5 | --- | --- | V |
| BV_{CER} | I_C = 20 mA R_{BE} = 10Ω | 65 | --- | --- | V |
| I_{CES} | V_{CE} = 50 V | --- | --- | 6 | mA |
| HFE | V_{CE} = 5 V I_C = 1 A | 10 | --- | --- | --- |

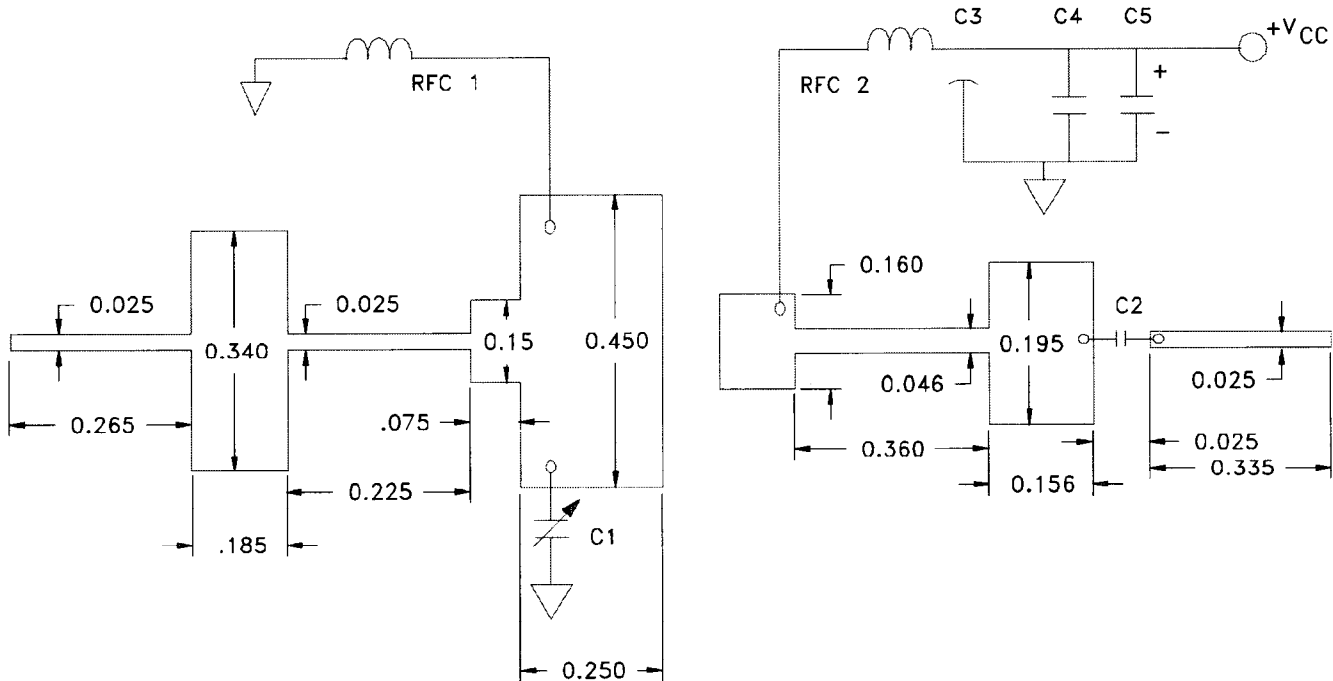
DYNAMIC

| Symbol | Test Conditions | Value | | | Unit |
|------------------------|--|------------|------|------|-----------|
| | | Min. | Typ. | Max. | |
| P_{OUT} | f = 1090 MHz P_{IN} = 9W V_{CC} = 50V | 75 | --- | --- | W |
| G_p | f = 1090 MHz P_{IN} = 9W V_{CC} = 50V | 9.2 | --- | --- | dB |
| η_C | f = 1090 MHz P_{IN} = 9W V_{CC} = 50V | 48 | --- | --- | % |

Conditions: **Pulse Width = 32 μsec** **Duty Cycle = 2%**

IMPEDANCE DATA

| FREQ | $Z_{IN}(\Omega)$ | $Z_{CC}(\Omega)$ |
|----------|------------------|------------------|
| 1030 MHz | $7.0 + j3.0$ | $12.5 - j4.5$ |
| 1090 MHz | $11.0 + j1.5$ | $13.0 - j3.0$ |

 $P_{IN} = 9.0W$
 $V_{CC} = 50V$
TEST CIRCUIT


All dimensions are in inches.

Substrate material: .025 thick Al₂O₃

C1 : 0.8—8.0 pF Johanson Gigatrim Capacitor

C2 : 100 pF Chip Capacitor

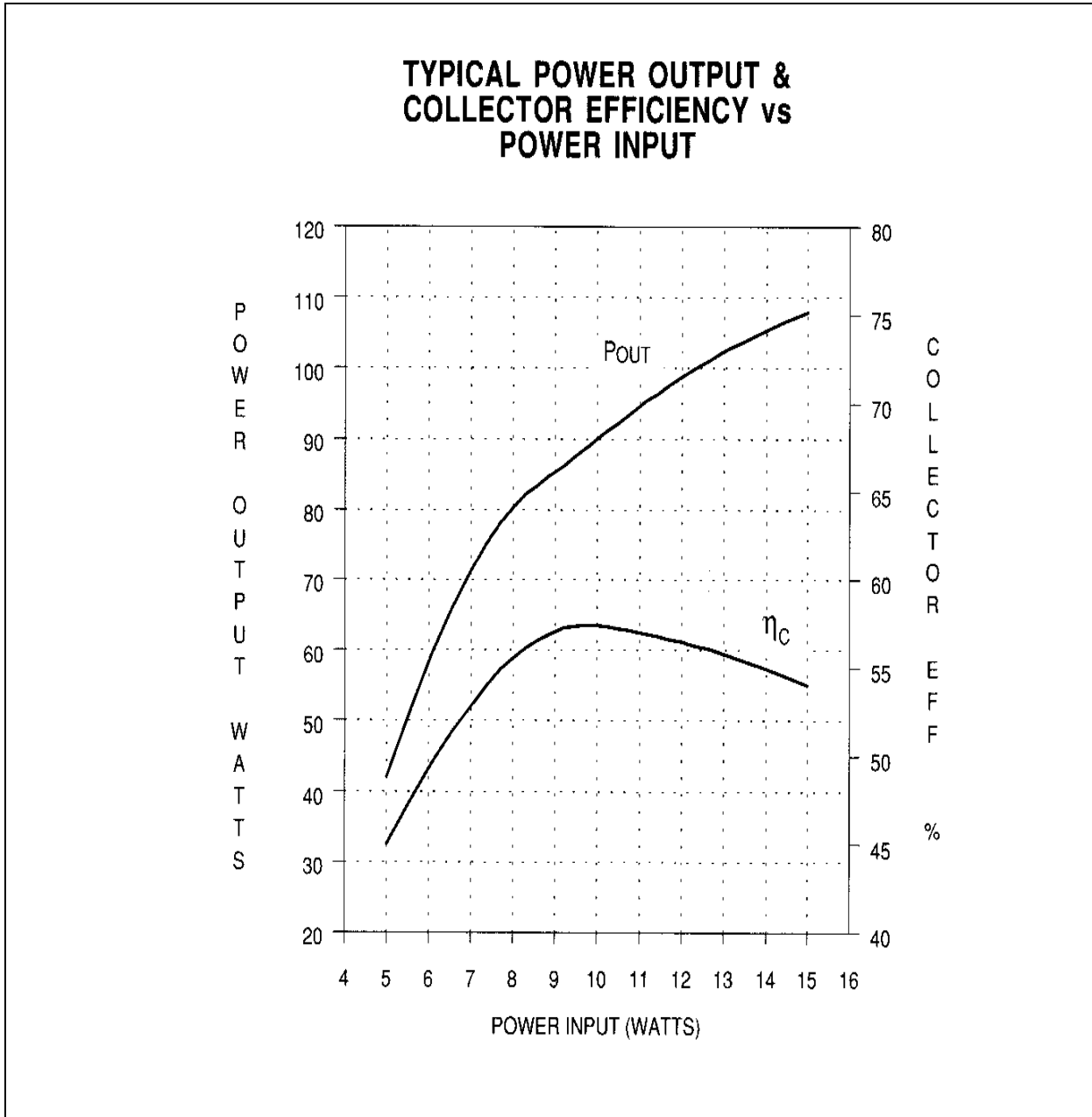
C3 : 1500 pF Filtercon Feedthru

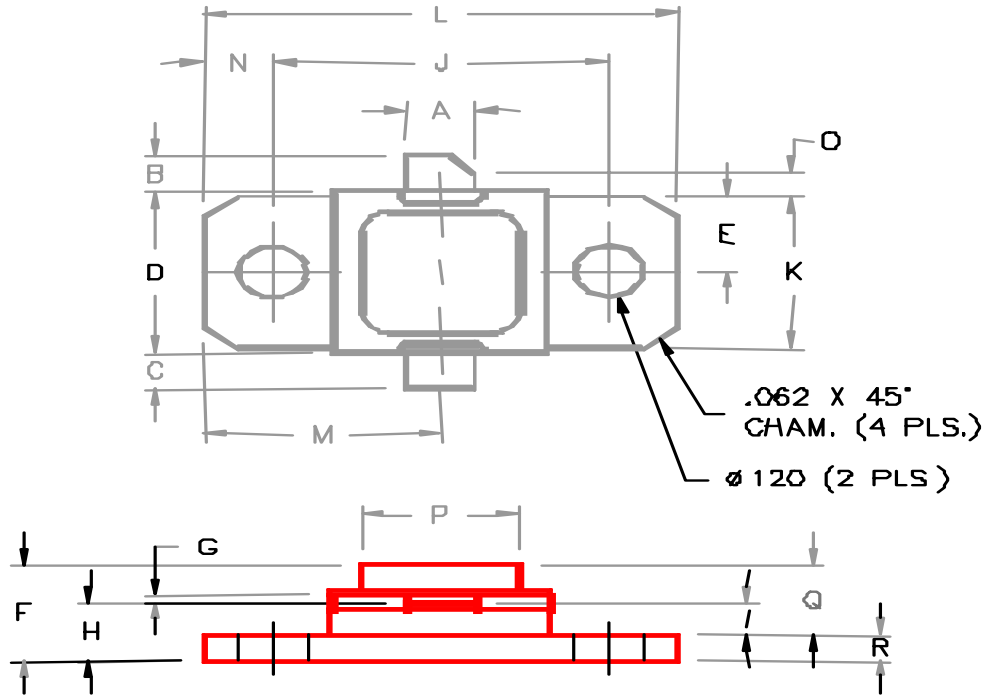
C4 : 1 μF, Ceramic Capacitor

C5 : 100 μF, Electrolytic Capacitor

RFC 1: Au Plated Ni Strap
0.280 Long x 0.035 Wide x 0.005 Thick

RFC 2: #26 Wire, 4 Turn 1/16 I.D.

TYPICAL PERFORMANCE

PACKAGE MECHANICAL DATA
PACKAGE STYLE M214


| | MINIMUM INCHES/MM | MAXIMUM INCHES/MM | | MINIMUM INCHES/MM | MAXIMUM INCHES/MM |
|---|----------------------|----------------------|---|----------------------|----------------------|
| A | .140/3,56 | | J | .650/16,51 | |
| B | .110/2,80 | | K | .386/9,80 | |
| C | .110/2,80 | | 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 | .050/1,27 | |
| G | .003/0,08 | .006/0,15 | P | .405/10,29 | |
| H | .118/3,00 | .131/3,33 | Q | .170/4,32 | |
| I | .063/1,60 | | R | .062/1,58 | |