



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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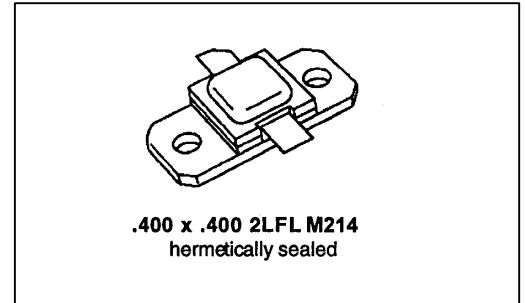


MS2213

RF & MICROWAVE TRANSISTORS AVIONICS/JTIDS APPLICATIONS

Features

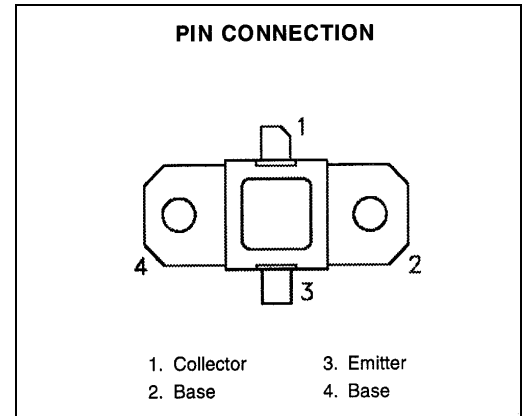
- 960-1215 MHz
- COMMON BASE
- GOLD METALLIZATION
- HERMETIC PACKAGE
- CLASS C OPERATION
- POUT = 30 W MIN. WITH 7.8 dB GAIN



DESCRIPTION:

The MS2213 is a silicon NPN bipolar device specifically designed for JTIDS pulsed power applications from 960-1215 MHz.

Gold metallization and emitter ballasting assure high reliability under Class C amplifier operation. This device operates over a wide range of pulse widths, duty cycles and temperatures, and can withstand a 15:1 VSWR mismatch under load.



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

Symbol	Parameter	Value	Unit
V _{CC}	Collector-Supply Voltage	40	V
I _C	Device Current	3.5	A
P _{DISS}	Power Dissipation	75	W
T _J	Junction Temperature (RF Pulsed Operation)	+250	°C
T _{STG}	Storage Temperature	-65 to +200	°C

Thermal Data

R _{TH(J-C)}	Junction-case Thermal Resistance	2.2	°C/W
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ELECTRICAL SPECIFICATIONS (T_{case} = 25°C)
STATIC

Symbol	Test Conditions	Value			Unit
		Min.	Typ.	Max.	
BV_{CBO}	I_C = 10mA	55	---	---	V
BV_{EBO}	I_E = 1mA	3.5	---	---	V
BV_{CER}	I_C = 20mA R_{BE} = 10Ω	55	---	---	V
I_{CES}	V_{CB} = 35 V	-----	---	5.0	mA
h_{FE}	V_{CE} = 5 V I_C = 1A	15	---	150	---

DYNAMIC

Symbol	Test Conditions	Value			Unit
		Min.	Typ.	Max.	
P_{OUT}	f = 960-1215 MHz V_{CC} = 35V P_{IN} = 5.0W	30	---	---	W
G_P	f = 960-1215 MHz V_{CC} = 35V P_{IN} = 5.0W	7.8	---	---	dB
η_C	f = 960-1215 MHz V_{CC} = 35V P_{IN} = 5.0W	40	---		%

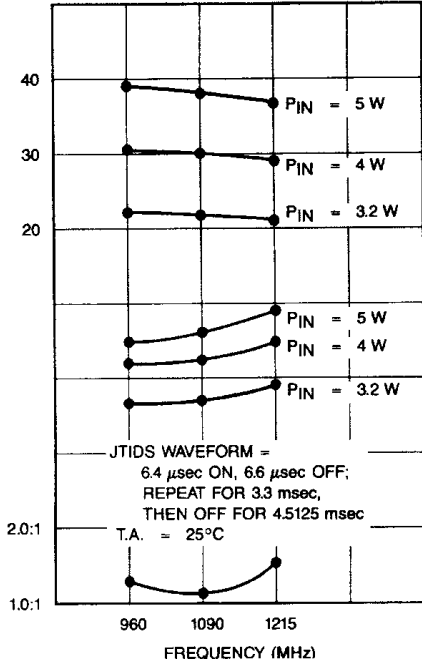
Pulse format: 6.4 us on 6.6 us off, repeat for 3.3ms, then off for 4.5125 ms.
Duty Cycle: Burst 49.2%, overall 20.8%.

IMPEDANCE DATA

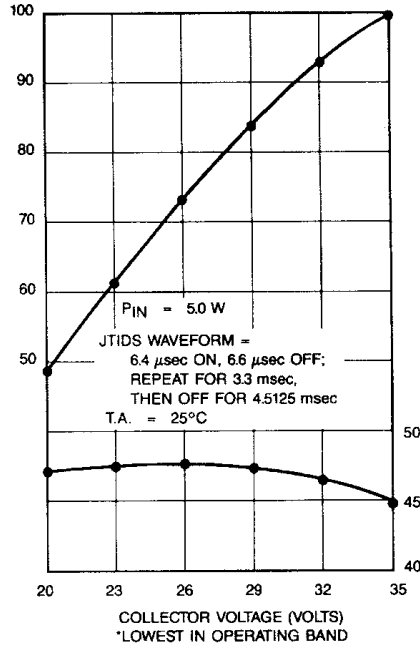
Freq. (MHz)	Z _{IN} (Ω)	Z _{OUT} (Ω)
960	4.5 + j 6.0	11.0 + j 0.5
1090	5.5 + j 6.3	12.0 - j 2.0
1215	5.0 + j 5.0	12.5 - j 5.0

TYPICAL PERFORMANCE

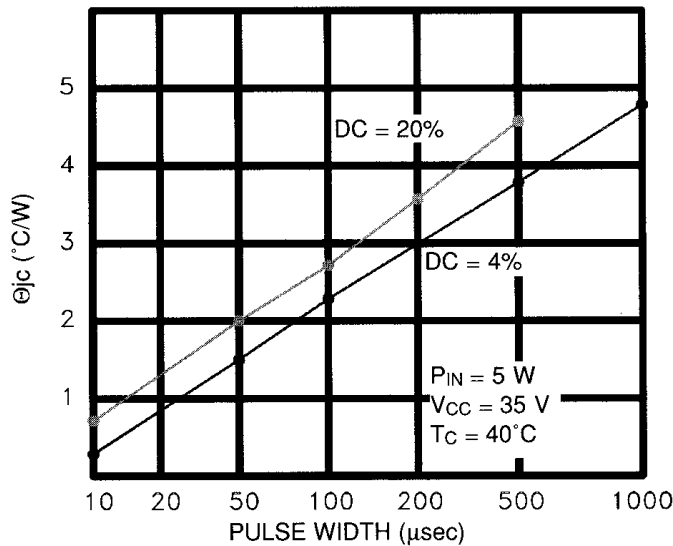
**TYPICAL BROADBAND
POWER AMPLIFIER**



**TYPICAL RELATIVE POWER
OUTPUT & COLLECTOR
EFFICIENCY* vs COLLECTOR
VOLTAGE**

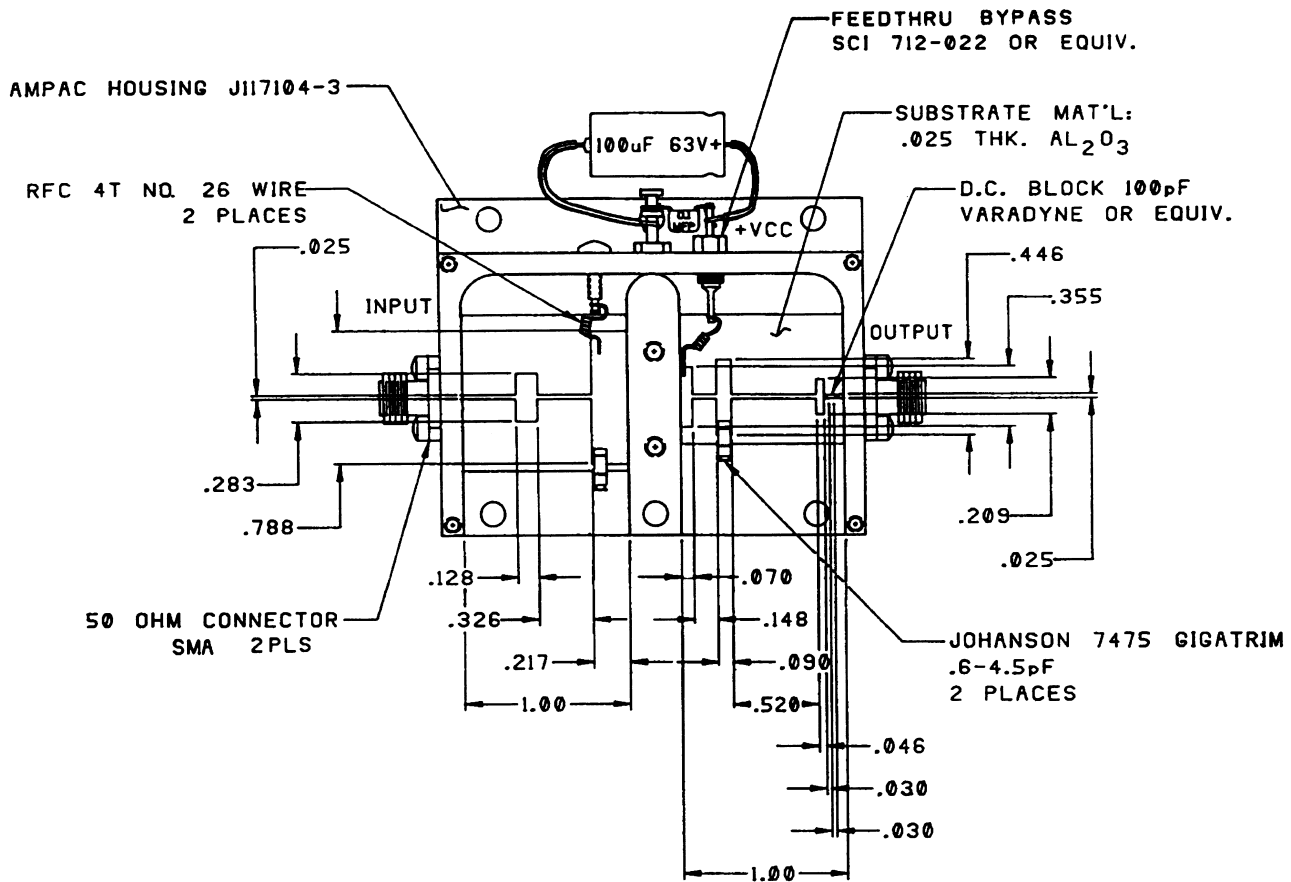


**MAXIMUM THERMAL RESISTANCE vs PULSE
WIDTH & DUTY CYCLE**



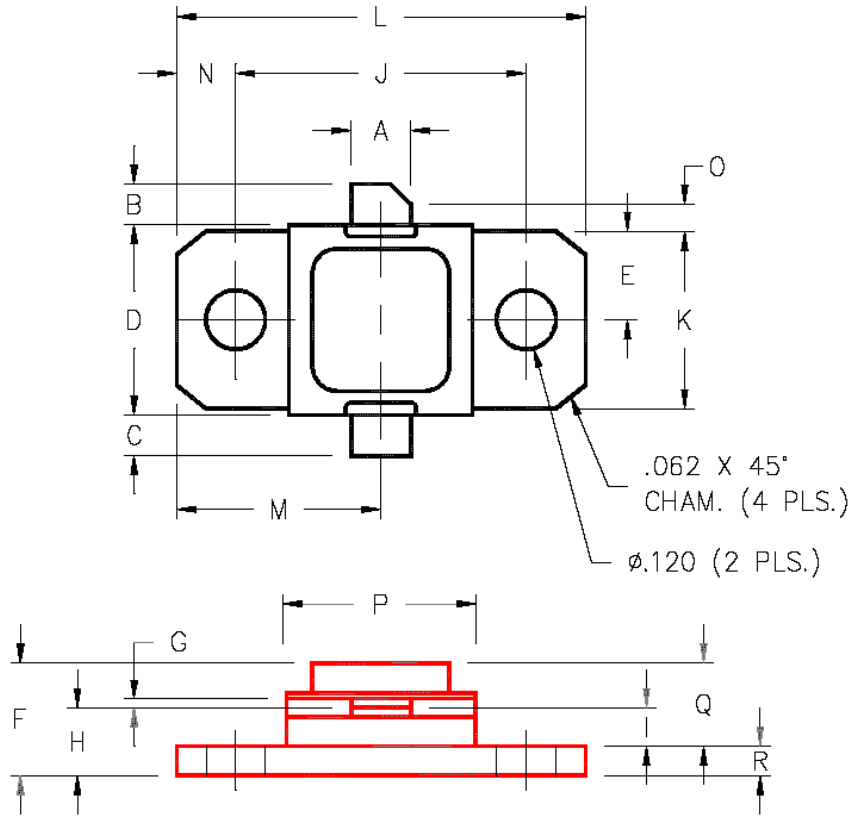
MS2213

TEST CIRCUIT



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	