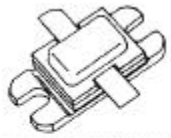
ADVANCED POWER TECHNOLOGY RF®

140 COMMERCE DRIVE
MONTGOMERYVILLE, PA
18936-1013
PHONE: (215) 631-9840
FAX: (215) 631-9855

MS2215

RF & MICROWAVE TRANSISTORS AVIONICS APPLICATIONS



.400 x .500 2LFL (M216)
hermetically sealed

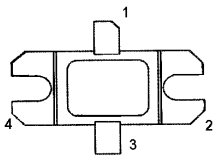
Features

- 960 – 1215 MHz
- 35 VOLTS
- INPUT/OUTPUT MATCHING
- P_{OUT} = 150 WATTS
- G_P = 7.5 dB MINIMUM
- COMMON BASE CONFIGURATION

DESCRIPTION:

The MS2215 is designed for specialized avionics applications, including Mode-S, TCAS and JTIDS where power is provided under pulse formats utilizing short pulse widths and high burst or overall duty cycles.

PIN CONNECTION



1. Collector
2. Base
3. Emitter
4. Base

ABSOLUTE MAXIMUM RATINGS (Tcase = 25°C)

Symbol	Parameter	Value	Unit
P_{DISS}	Power Dissipation	300	W
I_C	Device Current	16.5	A
V_{CC}	Collector - Supply Voltage	35	V
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	0.57	°C/W

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ELECTRICAL SPECIFICATIONS (Tcase = 25°C)

STATIC

Symbol	Test Conditions		Value			
			Min.	Typ.	Max.	Unit
BV_{CBO}	I_C = 60 mA	I_E = 0 mA	55	----	----	V
BV_{EBO}	I_E = 10 mA	I_C = 0 mA	3.5	----	----	V
BV_{CES}	I_C = 100 mA		55	----	----	V
I_{CES}	V_{CE} = 35 V		----	----	25	mA
h_{FE}	V_{CE} = 5V	I_C = 5 A	20	----	200	----

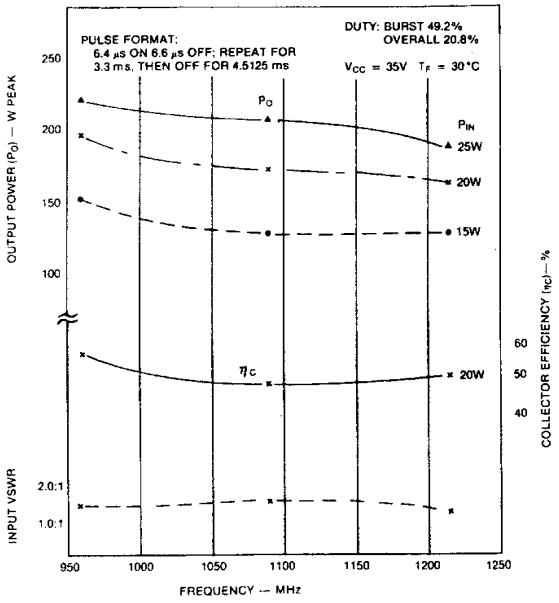
DYNAMIC

Symbol	Test Conditions			Value			
				Min.	Typ.	Max.	Unit
P_{OUT}	f = 960 - 1215 MHz	P_{IN} = 26.7 W	V_{CC} = 35 V	150	----	----	W
η_C	f = 960 - 1215 MHz	P_{IN} = 26.7 W	V_{CC} = 35 V	45	----	----	%
G_P	f = 960 - 1215 MHz	P_{IN} = 26.7 W	V_{CC} = 35 V	7.5	----	----	dB

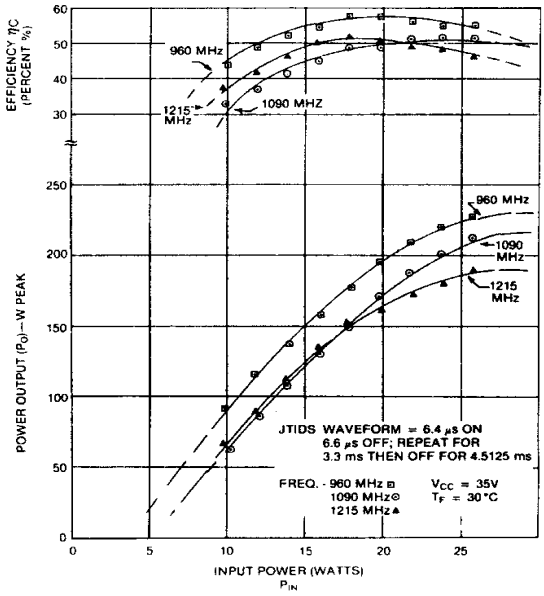
Conditions: **Pulse Format:** 6.4 µs on 6.6 µs off, repeat for 3.3 µs, then off for 4.5125 µs.
Duty Cycle: Burst 49.2%, Overall 20.8%

TYPICAL PERFORMANCE

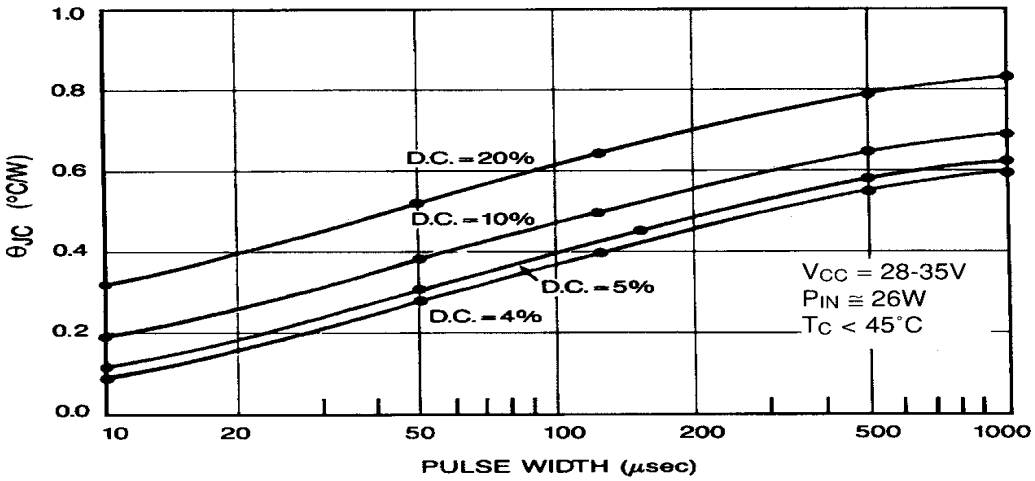
TYPICAL POWER INPUT, POWER OUTPUT & COLLECTOR EFFICIENCY vs FREQUENCY



POWER OUTPUT & COLLECTOR EFFICIENCY vs POWER INPUT



MAXIMUM THERMAL RESISTANCE vs PULSE WIDTH & DUTY CYCLE



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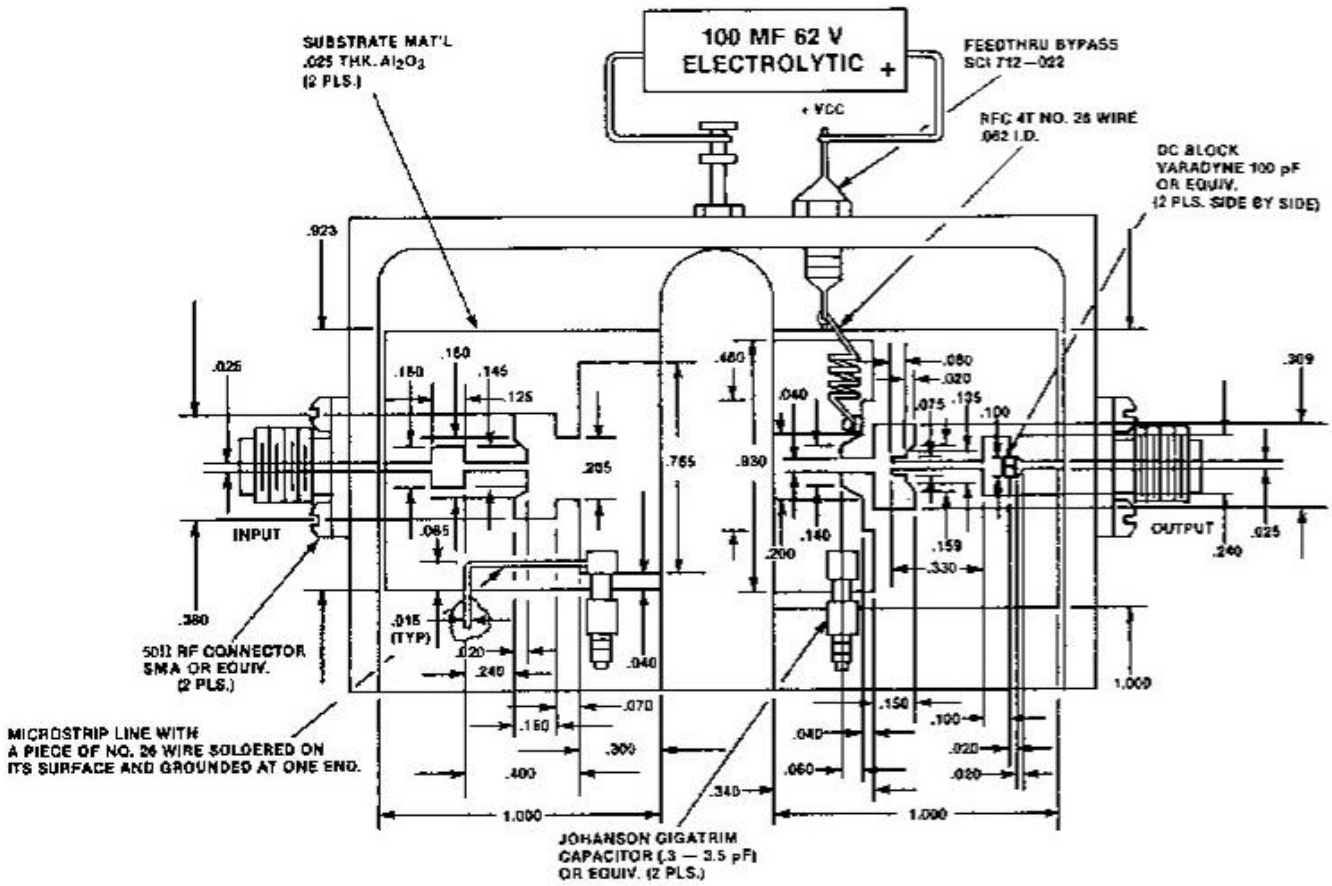
IMPEDANCE DATA:

FREQUENCY	Z_{IN}	Z_{CL}
960 MHz	2.1 + j3.8	3.8 – j3.6
1050 MHz	1.2 + j2.5	2.5 – j2.0
1215 MHz	1.7 + j2.4	2.0 – j2.5

Pin = 26.7 W
Vcc = 35V

TEST CIRCUIT



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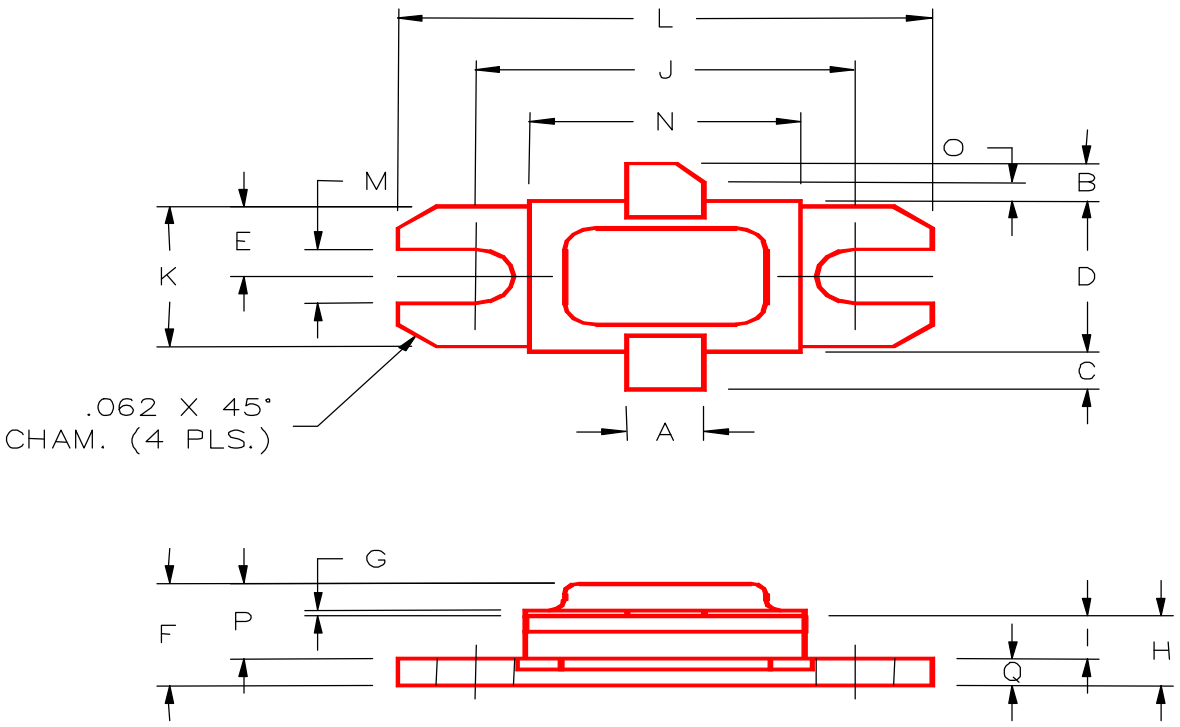
PACKAGE MECHANICAL DATA

PACKAGE STYLE M216



	MINIMUM INCHES/MM	MAXIMUM INCHES/MM		MINIMUM INCHES/MM	MAXIMUM INCHES/MM
A	.140/3,56		J	.700/17,78	
B	.110/2,80		K	.386/9,80	
C	.110/2,80		L	.900/22.86	
D	.395/10,03	.407/10,34	M	.120/3,05	
E	.193/4,90		N	.500/12,70	
F		.230/5,84	O	.050/1,27	
G	.003/0,08	.006/0,15	P		.170/4,32
H	.118/3,00	.131/3,33	Q	.062/1,58	
I	.063/1,60				