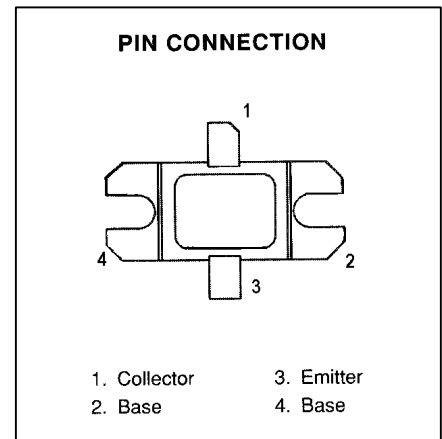
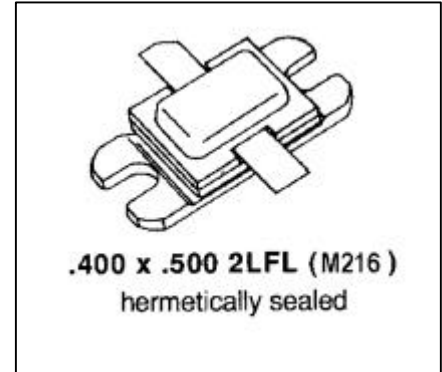


MS2210

**RF AND MICROWAVE TRANSISTORS
AVIONICS APPLICATIONS**

Features

- 255 MHz BANDWIDTH
- GOLD METALLIZATION
- EMITTER SITE BALLASTED
- P_{OUT} = 300W MINIMUM
- G_p = 7.0 dB
- LOW THERMAL RESISTANCE
- INPUT/OUTPUT MATCHING
- 15:1 VSWR CAPABILITY



DESCRIPTION:

The MS2210 avionics power transistor is a broadband, high peak pulse power device specifically designed for avionics applications requiring broad bandwidth with moderate duty cycle and pulse width constraints such as ground/ship DME/TACAN.

The MS2210 is also designed for specialized applications where reduced power is provided under pulse formats utilizing short pulse widths and high burst or overall duty cycles. This device is capable of withstanding 15:1 VSWR mismatch load conditions at any phase angle under full rated conditions.

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

Symbol	Parameter	Value	Unit
P _{DISS}	Power Dissipation*	940	W
I _C	Device Current*	24	A
V _{CC}	Collector-Supply Voltage*	50	
T _J	Junction Temperature (RF Pulsed Operation)	+200	°C
T _{STG}	Storage Temperature	- 65 to + 200	°C

THERMAL DATA

R _{TH(j-c)}	Junction-Case Thermal Resistance*	0.16	°C/W
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*Applies only to rated RF amplifier operation

ELECTRICAL SPECIFICATIONS ($T_{CASE} = 25^{\circ}C$)
STATIC

Symbol	Test Conditions		Value			Unit
			Min.	Typ.	Max.	
BV_{CBO}	I_C = 50 mA	I_E = 0 mA	65	----	----	V
BV_{EBO}	I_E = 15 mA	I_C = 0 mA	3.0	----	----	V
BV_{CER}	I_C = 50 mA	R_{BE} = 10 Ω	65	----	----	V
I_{CES}	V_{CE} = 50 V		----	----	30	mA
h_{FE}	V_{CE} = 5 V	I_C = 5A	10	----	---	----

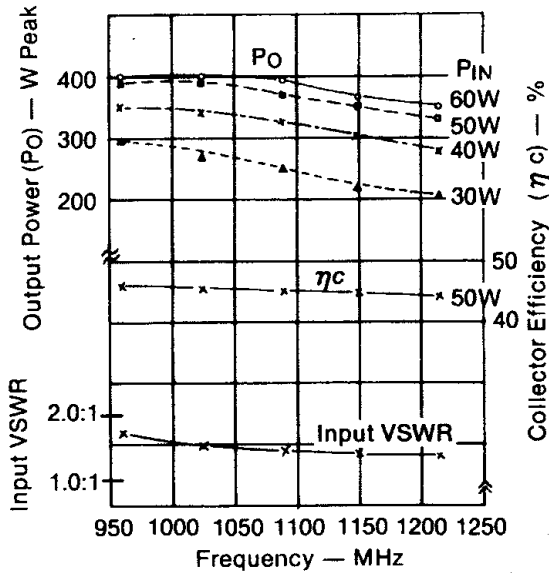
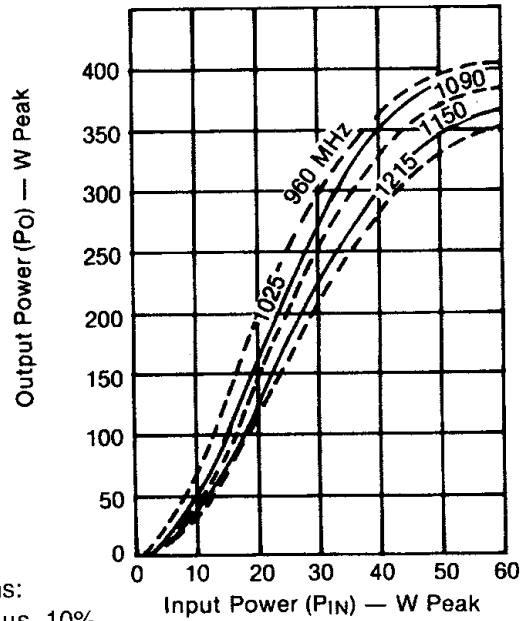
DYNAMIC

Symbol	Test Conditions			Value			Unit
				Min.	Typ.	Max.	
P_{OUT}	f = 960 - 1215 MHz	P_{IN} = 60 W	V_{CC} = 50 V	300	330	----	W
η_C	f = 960 - 1215 MHz	P_{IN} = 60 W	V_{CC} = 50 V	38	45	----	%
G_p	f = 960 - 1215 MHz	P_{IN} = 60 W	V_{CC} = 50 V	7.0	7.4	----	Db

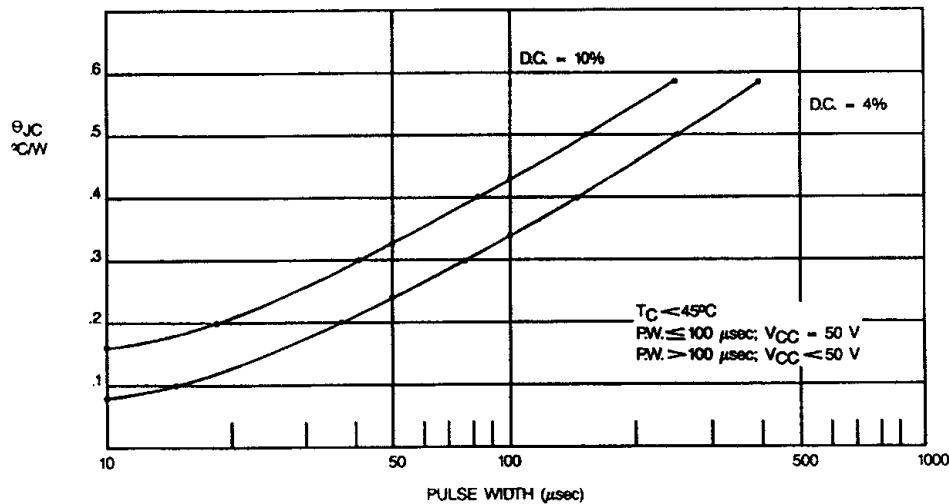
Note: Pulse Format: 10 μS
Duty Cycle: 10%

IMPEDANCE DATA

FREQ	Z _{IN} (Ω)	Z _{CL} (Ω)
960 MHz	2.0 + j3.6	1.7 - j2.2
1090 MHz	3.5 + j1.7	2.0 - j1.7
1215 MHz	1.6 + j0.5	1.8 - j2.0

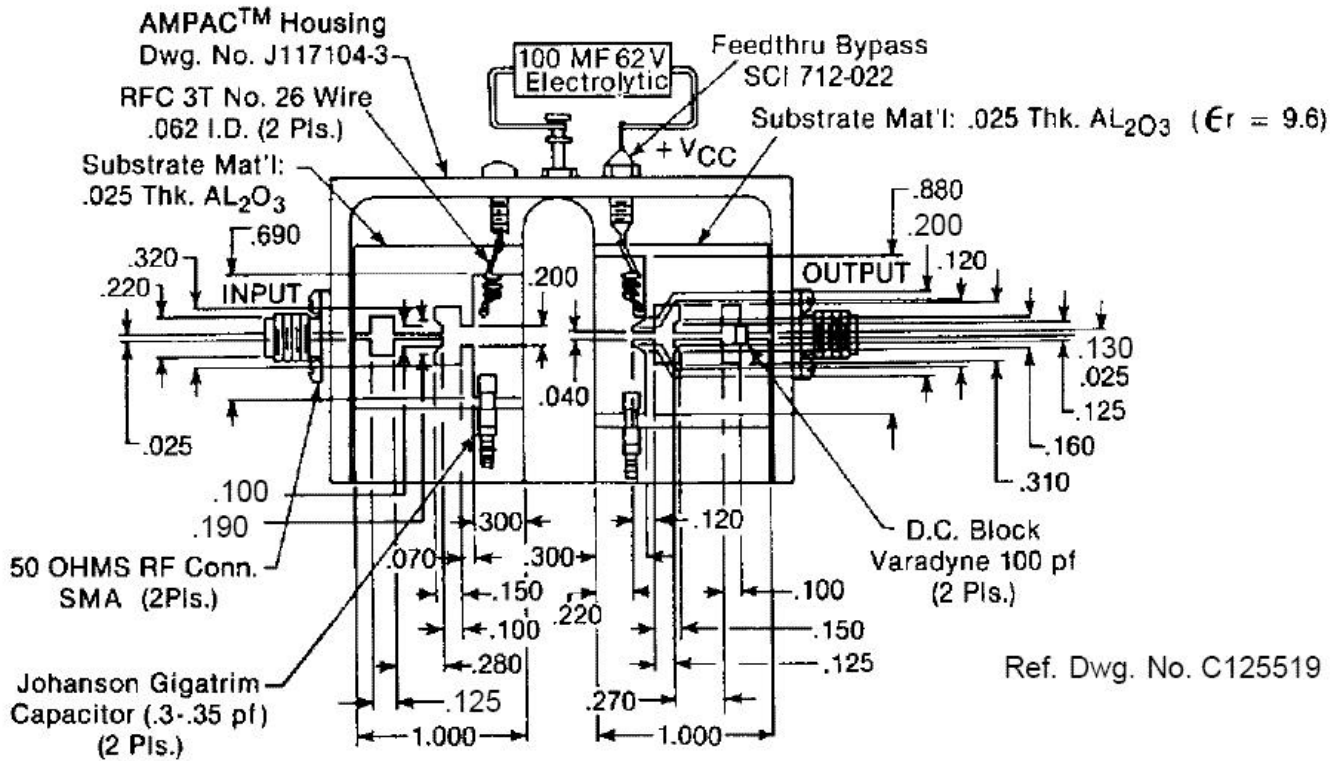
TYPICAL PERFORMANCE
TYPICAL BROADBAND RESPONSE

TYPICAL POWER OUTPUT vs POWER INPUT


Conditions:
 PW = 10 μ s, 10%
 V_{CC} = 50 V

MAXIMUM THERMAL RESISTANCE vs PULSE WIDTH & DUTY CYCLE


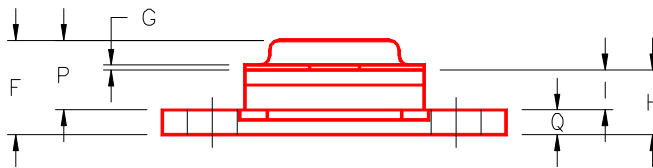
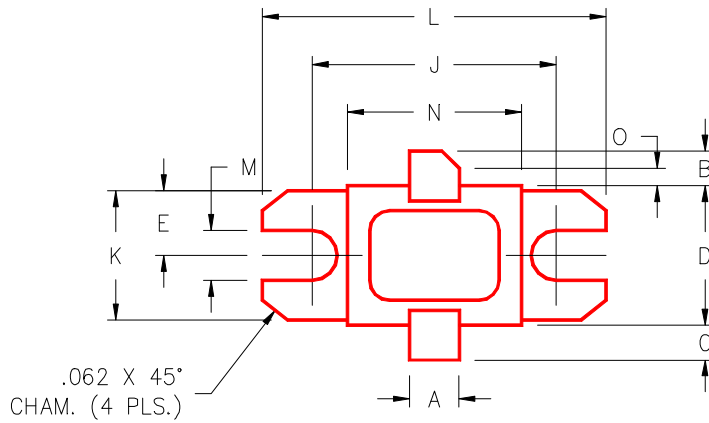
MS2210

TEST CIRCUIT



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				