GHz TECHNOLOGY
RF·MICROWAVE SILICON POWER TRANSISTORS

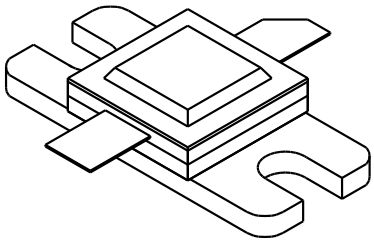
1416 - 200

200 Watts - 50 Volts, Pulsed
Radar 1400 - 1600 MHz

GENERAL DESCRIPTION

The 1416-200 is an internally matched, COMMON BASE transistor capable of providing 200 Watts of pulsed RF output power at one microsecond pulse width, ten percent duty factor across the band 1400-1600 MHz. This hermetically solder-sealed transistor is specifically designed for short pulse radar applications. It utilizes gold metalization and diffused emitter ballasting to provide high reliability and supreme ruggedness.

CASE OUTLINE
55AW STYLE 1



ABSOLUTE MAXIMUM RATINGS

Maximum Power Dissipation @ 25ºC 700 Watts

Maximum Voltage and Current

BVces	Collector to Emitter Voltage	55 Volts
BVebo	Emitter to Base Voltage	4.0 Volts
Ic	Collector Current	15 Amps

Maximum Temperatures

Storage Temperature	- 65 to + 200ºC
Operating Junction Temperature	+ 200ºC

ELECTRICAL CHARACTERISTICS @ 25 ^{O}C

SYMBOL	CHARACTERISTICS	TEST CONDITIONS	MIN	TYP	MAX	UNITS
Pout	Power Out	F = 1400-1600 MHz	200			Watts
Pin	Power Input	Vcc = 50 Volts			45	Watts
Pg	Power Gain	Pulse Width =1.0 µs	6.5	6.8		dB
η**c**	Collector Efficiency	Duty = 10%		40		%
VSWR	Load Mismatch Tolerance	F=1600MHz, Po=200W			10:1	

BVces	Collector to Emitter Breakdown	Ic = 10 mA	55			Volts
BVebo	Emitter to Base Breakdown	Ie = 10 mA	4.0			Volts
BVcbo	Emitter to Base Breakdown	Ic = 10 mA	65			Volts
Hfe	DC Current Gain	Vce = 5 V, Ic = 1.0 A	10			
θ**jc**	Thermal Resistance	Rated Pulse Condition			0.25	ºC/W

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CHz TECHNOLOGY
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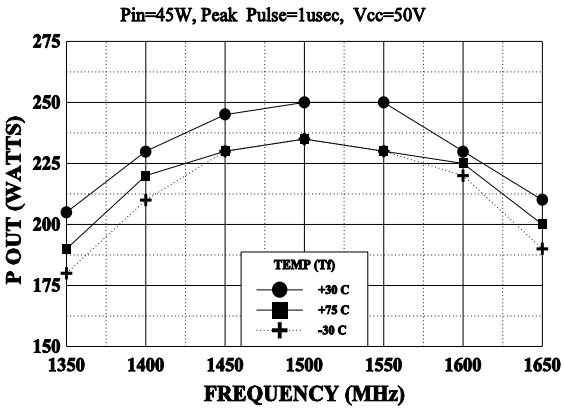
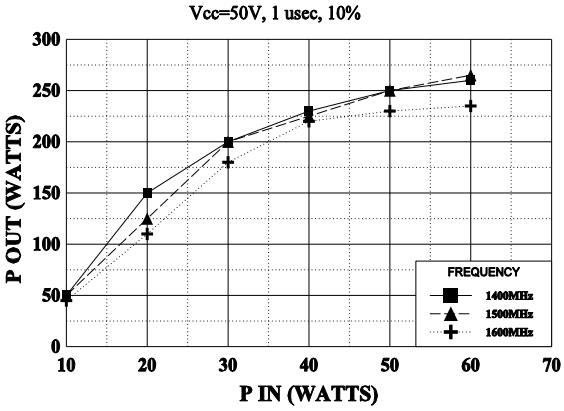
1416-200

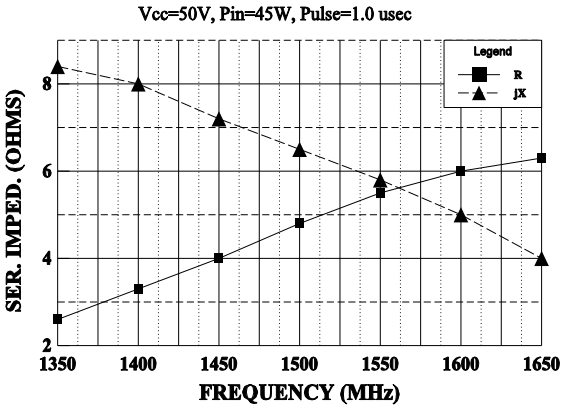
POUT vs TEMPERATURE AND FREQUENCY



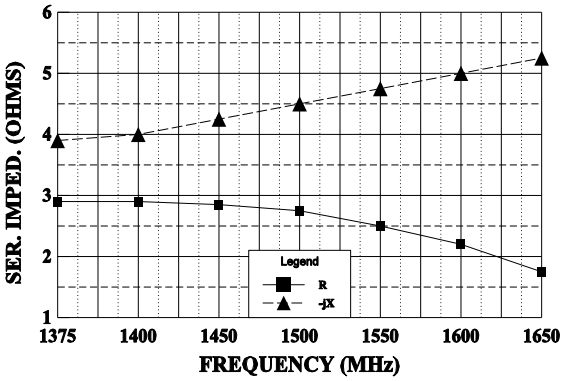
POWER OUPUT vs POWER INPUT



SERIES INPUT IMPEDANCE vs FREQUENCY



SERIES LOAD IMPEDANCE vs FREQUENCY



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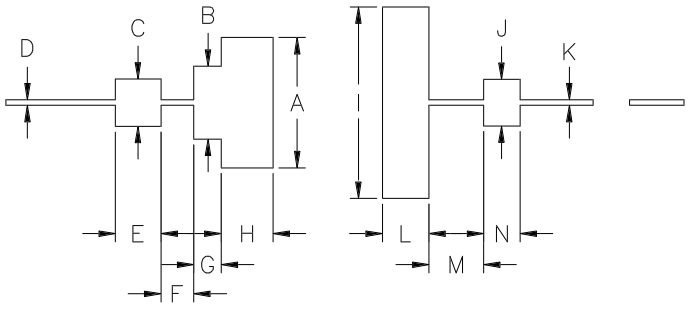
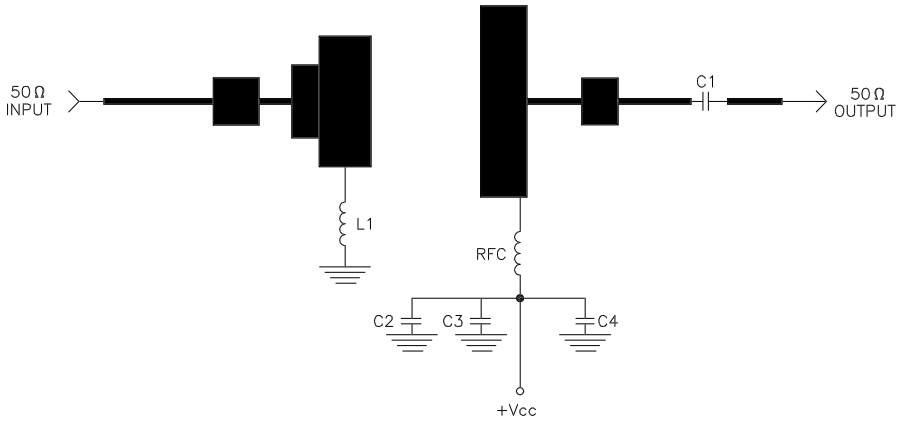
REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED



DIM	INCHES
A	.715
B	.400
C	.260
D	.030
E	.250
F	.180
G	.150
H	.285
I	1.050
J	.255
K	.030
L	.255
M	.300
N	.200

1416-200 TEST CIRCUIT



= Microstrip on 0.010" Duroid, Er=2.25
C1 = 82pF CHIP
C2 = 150pF CHIP
C3 = 1.0 MFD
C4 = 100 MFD
L1 = 2 pieces copper wire 0.022" dia., 0.5" long

GHz TECHNOLOGY	CAGE 0PJR2	DWG NO. 1416-200	REV A
		SCALE 1/1	SHEET