

# 1214-30

30 Watts, 28 Volts, Pulsed  
Radar 1200 - 1400 MHz

## GENERAL DESCRIPTION

The 1214-30 is an internally matched, COMMON BASE transistor capable of providing 30 Watts of pulsed RF output power at two milliseconds pulse width, twenty percent duty factor across the band 1200 to 1400 MHz. This hermetically solder-sealed transistor is specifically designed for long pulse radar applications. It utilizes gold metalization and diffused emitter ballasting to provide high reliability and supreme ruggedness.

## ABSOLUTE MAXIMUM RATINGS

Maximum Power Dissipation @ 25°C 88 Watts

### Maximum Voltage and Current

BVces Collector to Emitter Voltage 50 Volts

BVebo Emitter to Base Voltage 3.5 Volts

Ic Collector Current 4.0 Amps

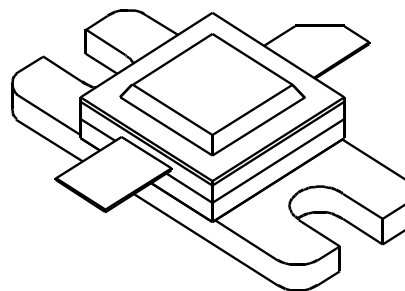
### Maximum Temperatures

Storage Temperature - 65 to + 200°C

Operating Junction Temperature + 200°C

## CASE OUTLINE

### 55AW, STYLE 1



## ELECTRICAL CHARACTERISTICS @ 25 °C

SYMBOL	CHARACTERISTICS	TEST CONDITIONS	MIN	TYP	MAX	UNITS
P <sub>out</sub>	Power Out	F = 1200-1400 MHz	30			Watts
P <sub>in</sub>	Power Input	V <sub>cc</sub> = 28 Volts			6.0	Watts
P <sub>g</sub>	Power Gain	Pulse Width = 2 ms	7.0	48		dB
η <sub>c</sub>	Collector Efficiency	Duty = 20%				%
VSWR	Load Mismatch Tolerance	Rated Conditions			3:1	

BVces	Collector to Emitter Breakdown	Ic = 50 mA	50			Volts
BVebo	Emitter to Base Breakdown	Ie = 5 mA	3.5			Volts
Hfe	DC Current Gain	Vce=5 V, Ic =500mA	20			
Cob	Output Capacitance*	F=1 MHz, Vcb=28V				pF
θjc	Thermal Resistance	Rated Pulse Condition			2.0	°C/W

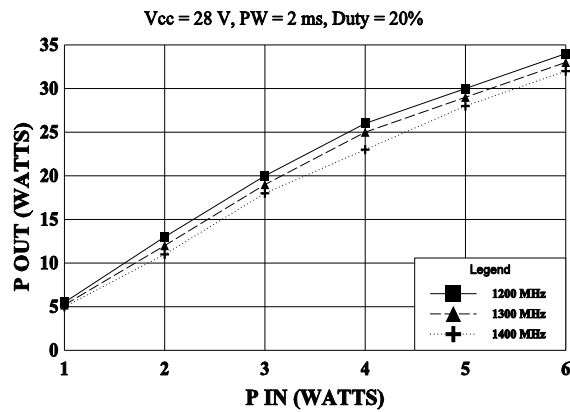
\* Not measureable due to internal prematch network

IssueA July 1997

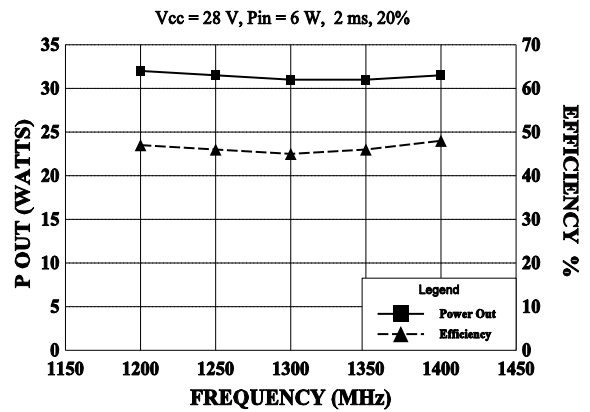
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**POWER OUTPUT vs POWER INPUT**

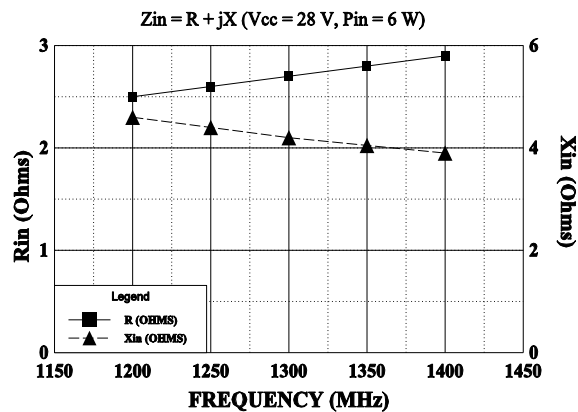


**POWER OUTPUT AND EFF. vs FREQUENCY**

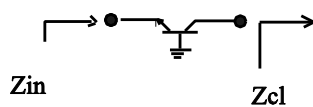
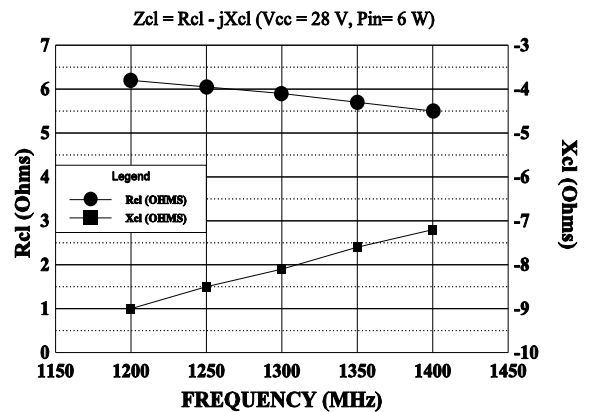


**Typical Impedances**

**INPUT IMPEDANCE vs FREQUENCY**

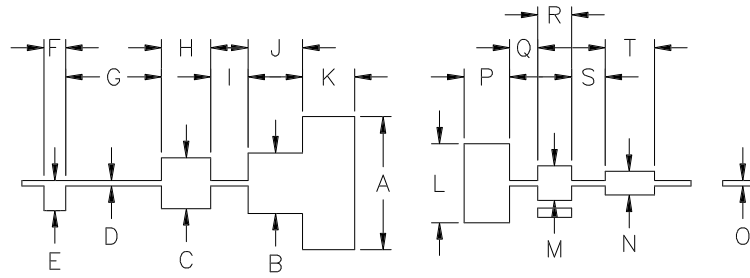


**LOAD IMPEDANCE vs FREQUENCY**



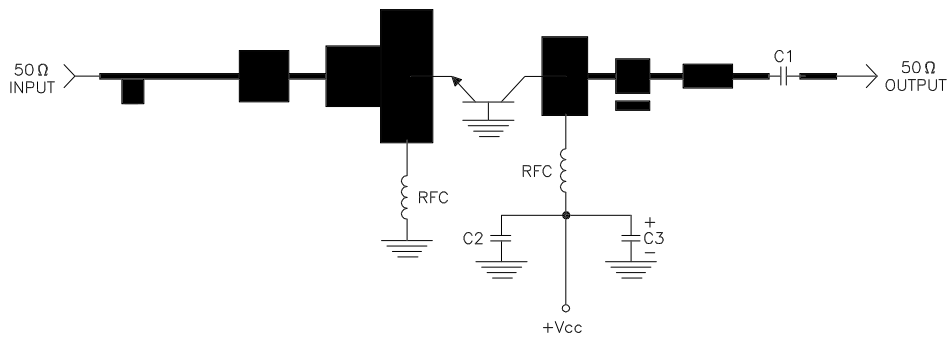
REVISIONS

ZONE	REV	DESCRIPTION	DATE	APPROVED
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DIM	INCHES
A	.730
B	.332
C	.280
D	.030
E	.165
F	.120
G	.525
H	.270
I	.205
J	.300
K	.285
L	.433
M	.190
N	.130
O	.030
P	.250
Q	.155
R	.185
S	.185
T	.270

1214-30 TEST CIRCUIT



DIELECTRIC = 10 MIL THICK  
 DUROID,  $\epsilon_r = 2.3$   
 C1, C2 = 82pF CHIP ATC "A"  
 C3 = 100MFD @ 35V  
 RFC = 5 turns #22 wire 1/16" I.D.



CAGE OPJR2	DWG NO. 1214-30	REV A
SCALE 1/1	SHEET	