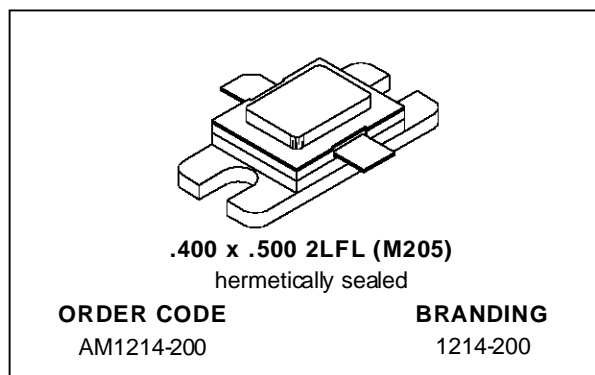


## RF & MICROWAVE TRANSISTORS L-BAND RADAR APPLICATIONS

PRELIMINARY DATA

- REFRACTORY/GOLD METALLIZATION
- EMITTER SITE BALLASTED
- LOW THERMAL RESISTANCE
- INPUT/OUTPUT MATCHING
- OVERLAY GEOMETRY
- METAL/CERAMIC HERMETIC PACKAGE
- P<sub>OUT</sub> = 200 W MIN. WITH 7.0 dB GAIN

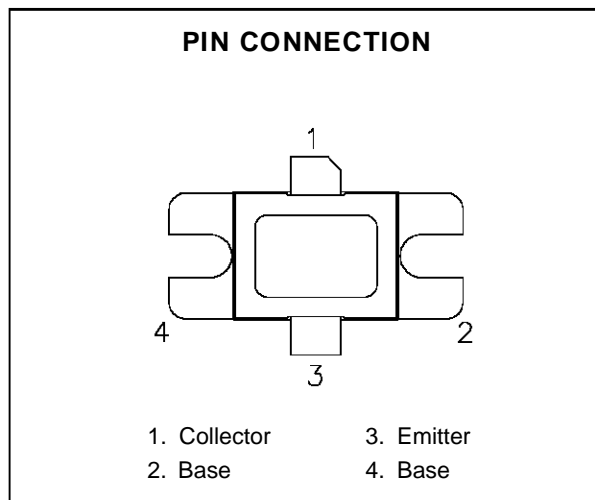


### DESCRIPTION

The AM1214-200 device is a high power Class C transistor specifically designed for L-Band Radar pulsed output and driver applications.

This device is capable of operation over a wide range of pulse widths, duty cycles and temperatures, and will tolerate severe mismatch and over-drive conditions. Low RF thermal resistance and computerized automatic wire bonding techniques ensure high reliability and product consistency.

AM1214-200 is supplied in the BIGPAC™ hermetic metal/ceramic package with internal input/output matching structures.



### ABSOLUTE MAXIMUM RATINGS (T<sub>case</sub> = 25°C)

Symbol	Parameter	Value	Unit
P <sub>DISS</sub>	Power Dissipation* (T <sub>c</sub> ≤ 100°C)	575	W
I <sub>c</sub>	Device Current*	16	A
V <sub>CC</sub>	Collector-Supply Voltage*	40	V
T <sub>J</sub>	Junction Temperature (Pulsed RF Operation)	250	°C
T <sub>STG</sub>	Storage Temperature	- 65 to +200	°C

### THERMAL DATA

R <sub>TH(j-c)</sub>	Junction-Case Thermal Resistance*	0.26	°C/W
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\*Applies only to rated RF amplifier operation

# AM1214-200

## ELECTRICAL SPECIFICATIONS (T<sub>case</sub> = 25°C)

### STATIC

Symbol	Test Conditions		Value			Unit
			Min.	Typ.	Max.	
BV <sub>CBO</sub>	I <sub>C</sub> = 50mA	I <sub>E</sub> = 0mA	70	—	—	V
BV <sub>EBO</sub>	I <sub>E</sub> = 30mA	I <sub>C</sub> = 0mA	3.0	—	—	V
BV <sub>CES</sub>	I <sub>C</sub> = 50mA	V <sub>BE</sub> = 0V	70	—	—	V
I <sub>CES</sub>	V <sub>BE</sub> = 0V	V <sub>CE</sub> = 40V	—	—	30	mA
h <sub>FE</sub>	V <sub>CE</sub> = 5V	I <sub>C</sub> = 500mA	10	—	—	—

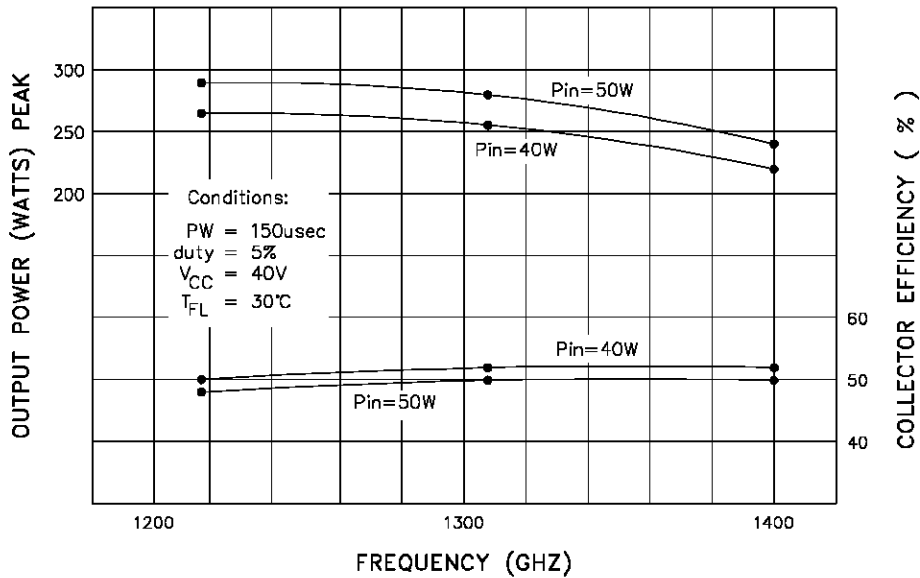
### DYNAMIC

Symbol	Test Conditions			Value			Unit
				Min.	Typ.	Max.	
P <sub>OUT</sub>	f = 1215 — 1400MHz	P <sub>IN</sub> = 40W	V <sub>CC</sub> = 40V	200	—	—	W
η <sub>C</sub>	f = 1215 — 1400MHz	P <sub>IN</sub> = 40W	V <sub>CC</sub> = 40V	45	—	—	%
G <sub>P</sub>	f = 1215 — 1400MHz	P <sub>IN</sub> = 40W	V <sub>CC</sub> = 40V	7.0	—	—	dB

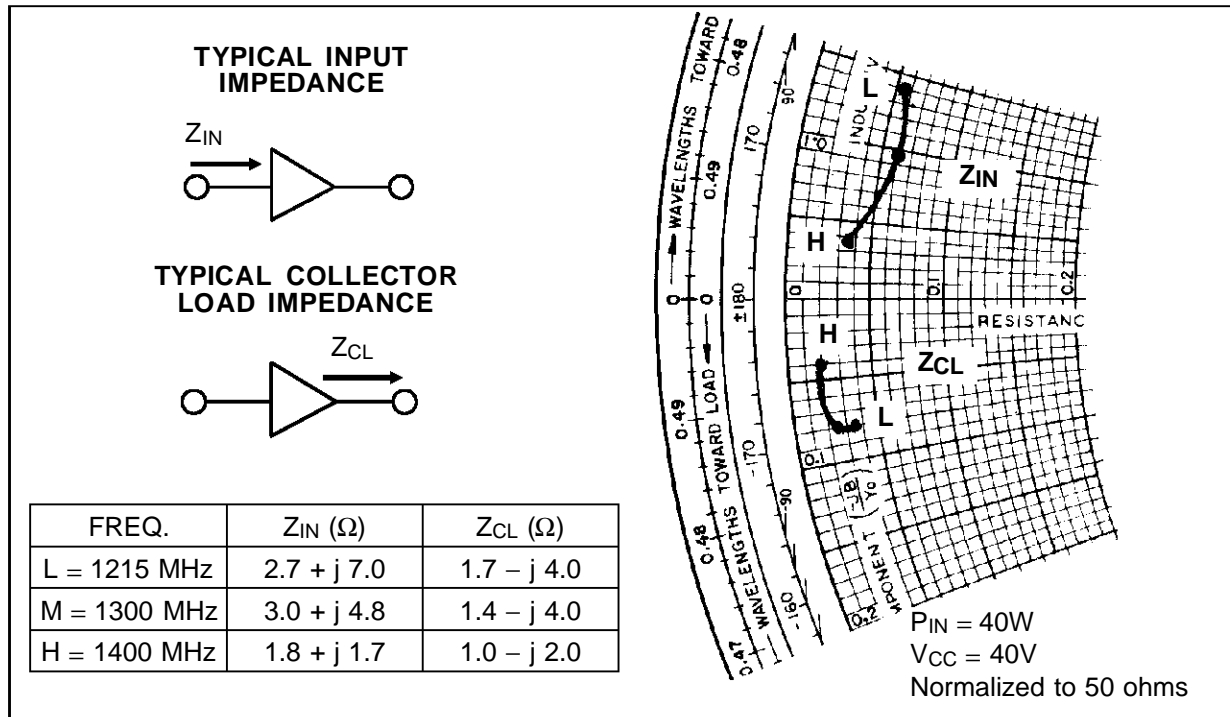
Note: Pulse Width = 150μSec  
Duty Cycle = 5%

### TYPICAL PERFORMANCE

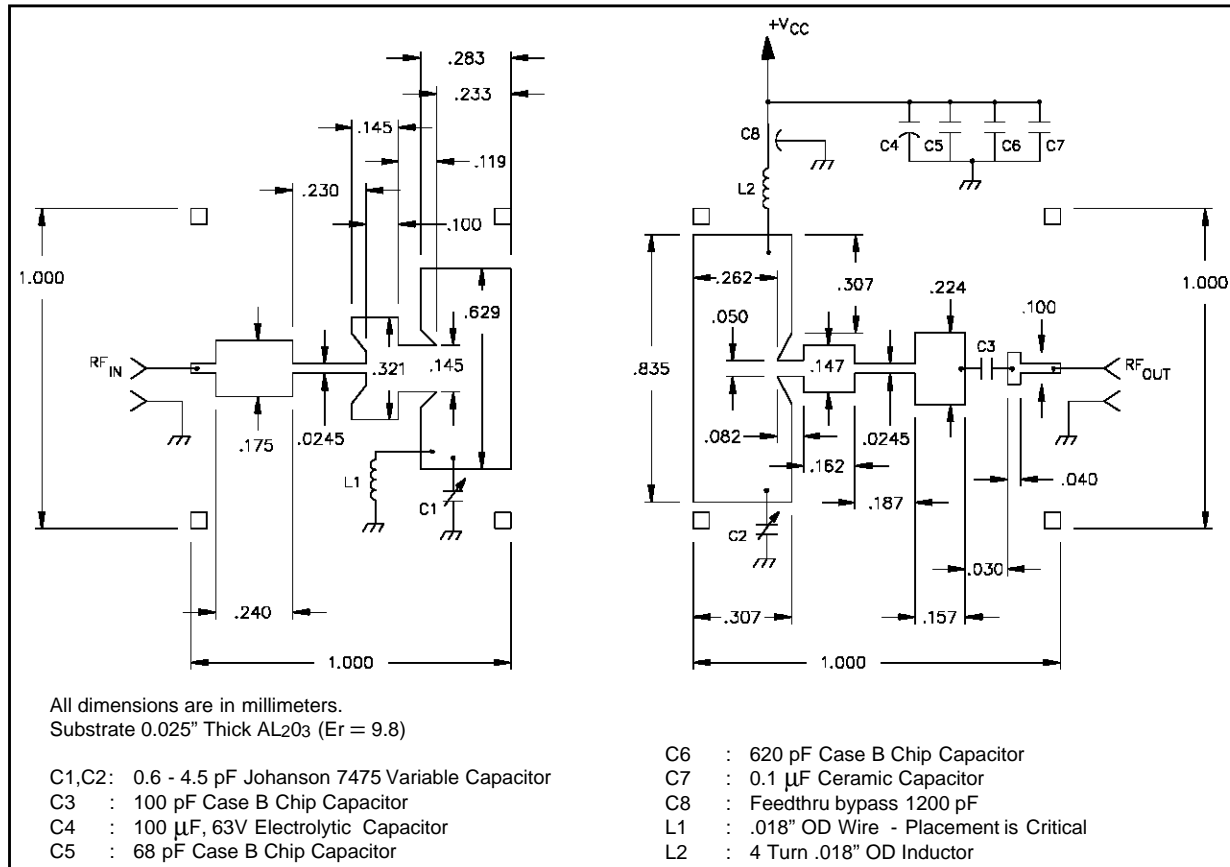
#### POWER OUTPUT & COLLECTOR EFFICIENCY vs FREQUENCY



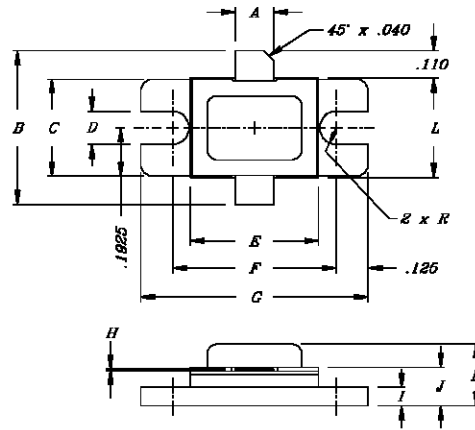
IMPEDANCE DATA



TEST CIRCUIT



PACKAGE MECHANICAL DATA



SGS-THOMSON MICROELECTRONICS		
	MINIMUM Inches / mm	MAXIMUM Inches / mm
A	.145 / 3.68	.155 / 3.93
B	.600 / 15.24	
C	.380 / 9.65	.390 / 9.91
D	.130 / 3.30	
E	.495 / 12.57	.507 / 12.88
F	.640 / 16.26	.655 / 16.64
G	.890 / 22.61	.910 / 23.11
H	.002 / 0.05	.006 / 0.15
I	.055 / 1.40	.065 / 1.65
J	.115 / 2.92	.135 / 3.43
K		.230 / 5.84
L	.395 / 10.03	.407 / 10.34

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