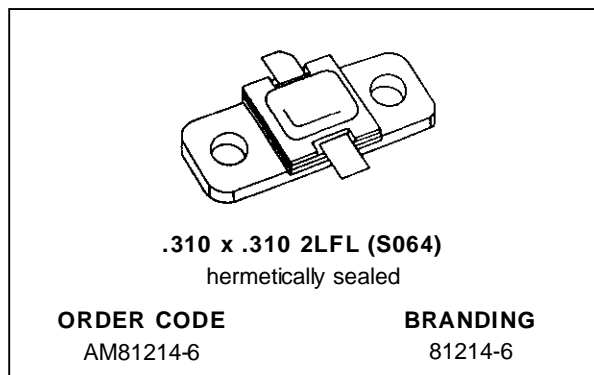


## RF & MICROWAVE TRANSISTORS L-BAND RADAR APPLICATIONS

- REFRACTORY/GOLD METALLIZATION
- EMITTER SITE BALLASTED
- 5:1 VSWR CAPABILITY
- LOW THERMAL RESISTANCE
- INPUT/OUTPUT MATCHING
- OVERLAY GEOMETRY
- METAL/CERAMIC HERMETIC PACKAGE
- P<sub>OUT</sub> = 5.5 W MIN. WITH 10 dB GAIN

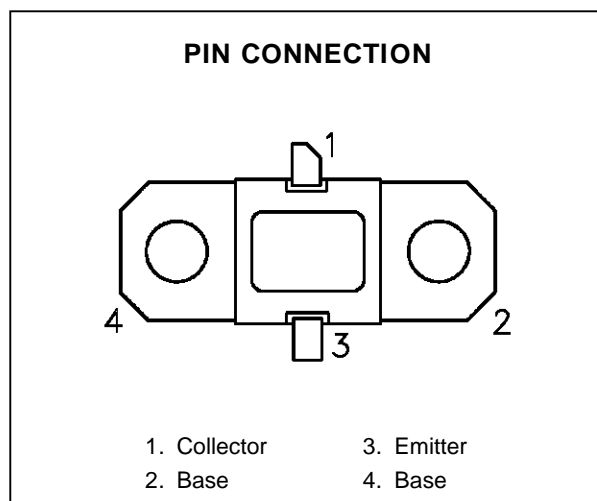


### DESCRIPTION

The AM81214-006 device is a high power Class C transistor specifically designed for L-Band Radar pulsed driver applications.

This device is capable of operation over a wide range of pulse widths, duty cycles, and temperatures and is capable of withstanding 5:1 output VSWR at rated RF conditions. Low RF thermal resistance and computerized automatic wire bonding techniques ensure high reliability and product consistency.

AM81214-006 is supplied in the grounded IM-PAC™ 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)	16.7	W
I <sub>C</sub>	Device Current*	0.82	A
V <sub>CC</sub>	Collector-Supply Voltage*	32	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*	9.0	°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.	
$BV_{CBO}$	$I_C = 1\text{ mA}$	$I_E = 0\text{ mA}$	48	—	—	V
$BV_{CER}$	$I_C = 5\text{ mA}$	$R_{BE} = 10\Omega$	48	—	—	V
$BV_{EBO}$	$I_E = 1\text{ mA}$	$I_C = 0\text{ mA}$	3.5	—	—	V
$I_{CES}$	$V_{BE} = 0\text{ V}$	$V_{CE} = 28\text{ V}$	—	—	500	$\mu A$
$h_{FE}$	$V_{CE} = 5\text{ V}$	$I_C = 500\text{ mA}$	15	—	300	—

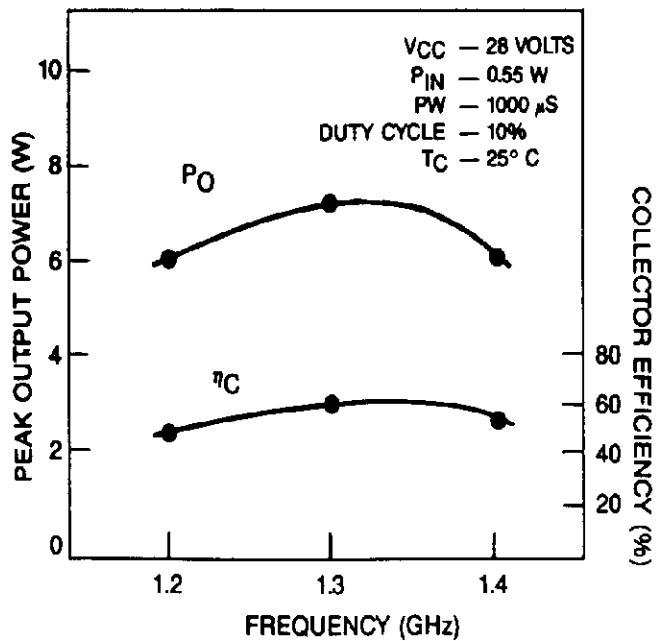
DYNAMIC

Symbol	Test Conditions			Value			Unit
				Min.	Typ.	Max.	
$P_{OUT}$	$f = 1.2 - 1.4\text{ GHz}$	$P_{IN} = 0.5\text{ W}$	$V_{CC} = 28\text{ V}$	—	5.5	6.2	W
$\eta_C$	$f = 1.2 - 1.4\text{ GHz}$	$P_{IN} = 0.5\text{ W}$	$V_{CC} = 28\text{ V}$	47	52	—	%
$G_P$	$f = 1.2 - 1.4\text{ GHz}$	$P_{IN} = 0.5\text{ W}$	$V_{CC} = 28\text{ V}$	10	10.5	—	dB

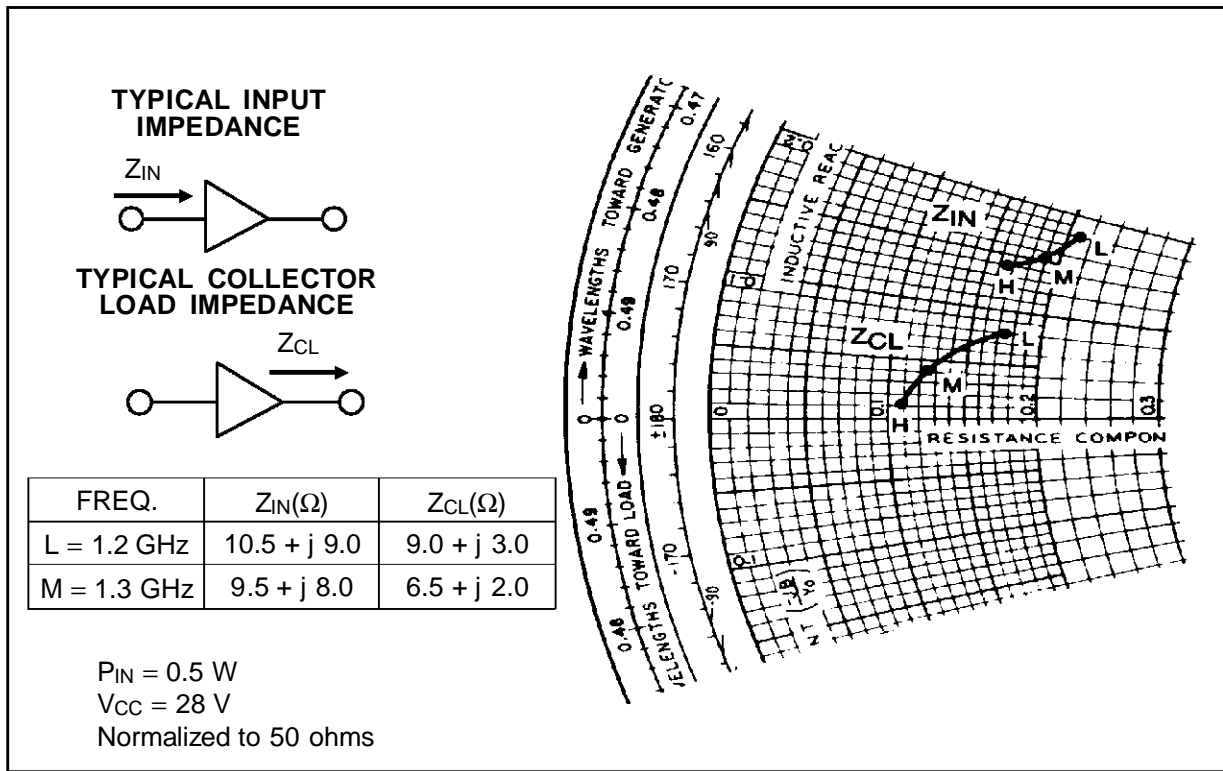
Note: Pulse Width = 1000 $\mu$ S  
 Duty Cycle = 10%

**TYPICAL PERFORMANCE**

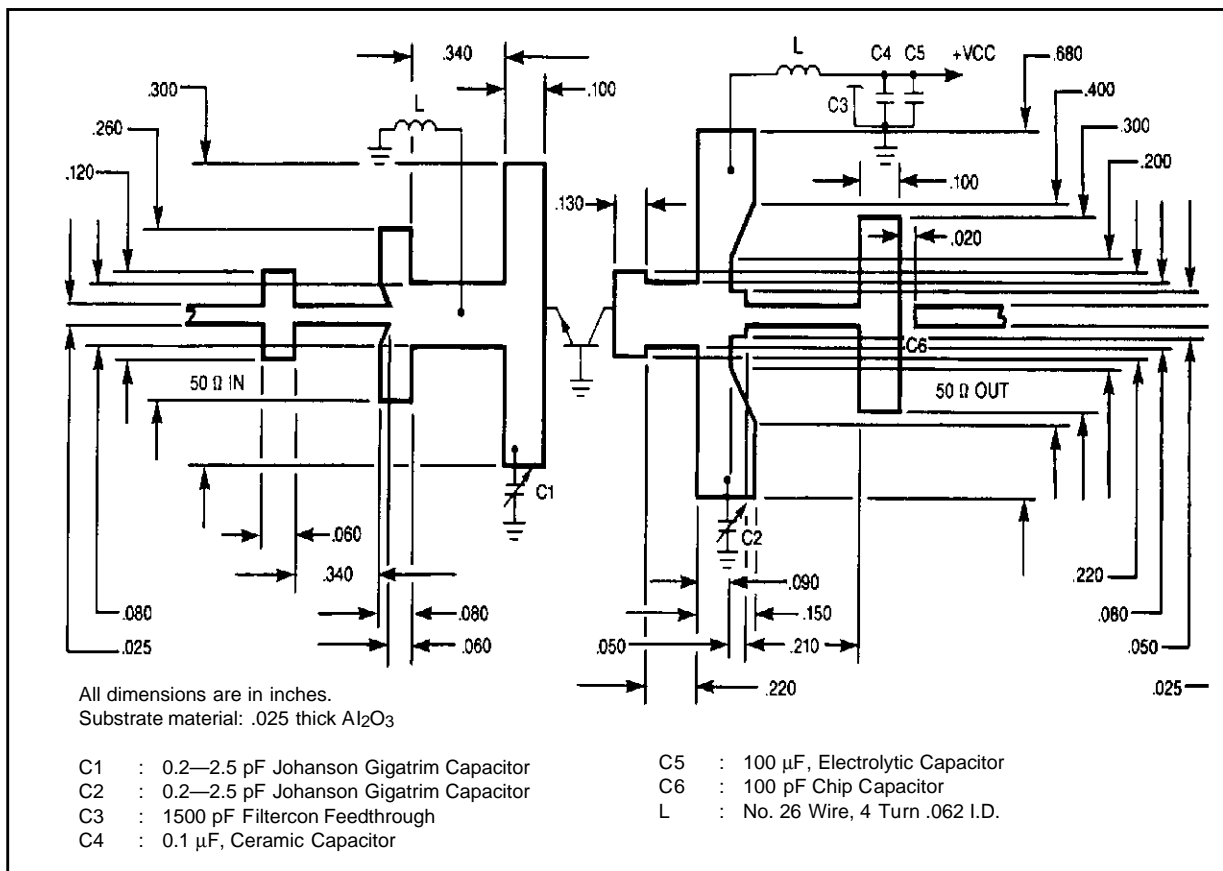
**TYPICAL BROADBAND PERFORMANCE**



IMPEDANCE DATA

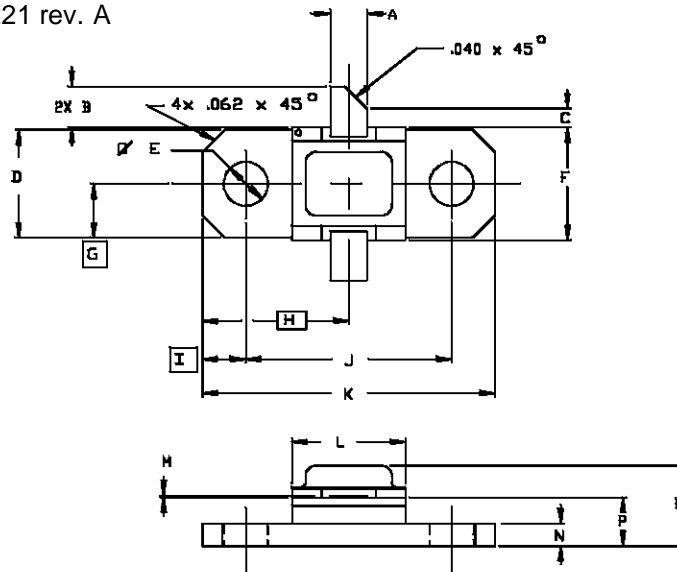


TEST CIRCUIT



PACKAGE MECHANICAL DATA

Ref.: Dwg. No. 12-0221 rev. A



SGS-THOMSON MICROELECTRONICS		CONT'D		
	MINIMUM Inches/mm	MAXIMUM Inches/mm	MINIMUM Inches/mm	MAXIMUM Inches/mm
A	.095/2,41	.105/2,67	K	.790/20,07
B	.100/2,54	.120/3,05	L	.300/7,62
C	.050/1,27		M	.003/0,08
D	.286/7,26	.306/7,77	N	.052/1,32
E	.110/2,79	.130/3,30	P	.118/3,00
F	.306/7,77	.318/8,08	R	.230/5,84
G	.148/3,76			
H	.400/10,16			
I	.119/3,02			
J	.552/14,02	.572/14,53		

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