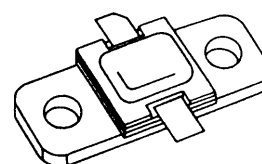


RF & MICROWAVE TRANSISTORS L-BAND RADAR APPLICATIONS

- REFRACTORY/GOLD METALLIZATION
- EMITTER SITE BALLASTED
- RUGGEDIZED VSWR $\infty:1$
- LOW THERMAL RESISTANCE
- INPUT/OUTPUT MATCHING
- OVERLAY GEOMETRY
- METAL/CERAMIC HERMETIC PACKAGE
- $P_{OUT} = 26$ W MIN. WITH 7.2 dB GAIN



.310 x .310 2LFL (S064)
hermetically sealed

ORDER CODE
AM81214-030

BRANDING
81214-30

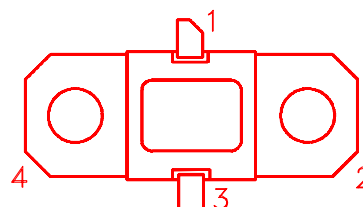
DESCRIPTION

The AM81214-030 device is a high power transistor specifically designed for L-Band Radar pulsed driver applications.

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

The AM81214-030 is supplied in the IMPAC™ Hermetic Metal/Ceramic package with internal Input/Output matching structures.

PIN CONNECTION



- | | |
|--------------|------------|
| 1. Collector | 3. Emitter |
| 2. Base | 4. Base |

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

Symbol	Parameter	Value	Unit
P _{DISS}	Power Dissipation* (T _C ≤ 100°C)	63	W
I _C	Device Current*	2.75	A
V _{CC}	Collector-Supply Voltage*	32	V
T _J	Junction Temperature (Pulsed RF Operation)	250	°C
T _{STG}	Storage Temperature	– 65 to +200	°C

THERMAL DATA

R _{TH(j-c)}	Junction-Case Thermal Resistance*	2.4	°C/W
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*Applies only to rated RF amplifier operation

ELECTRICAL SPECIFICATIONS ($T_{\text{case}} = 25^{\circ}\text{C}$)**STATIC**

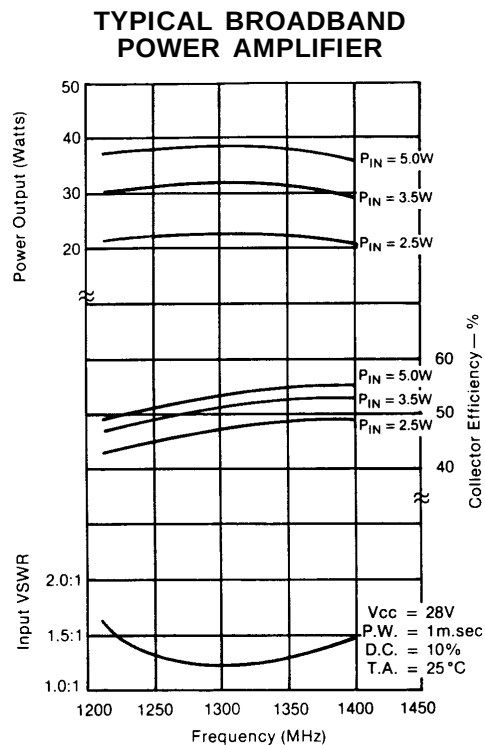
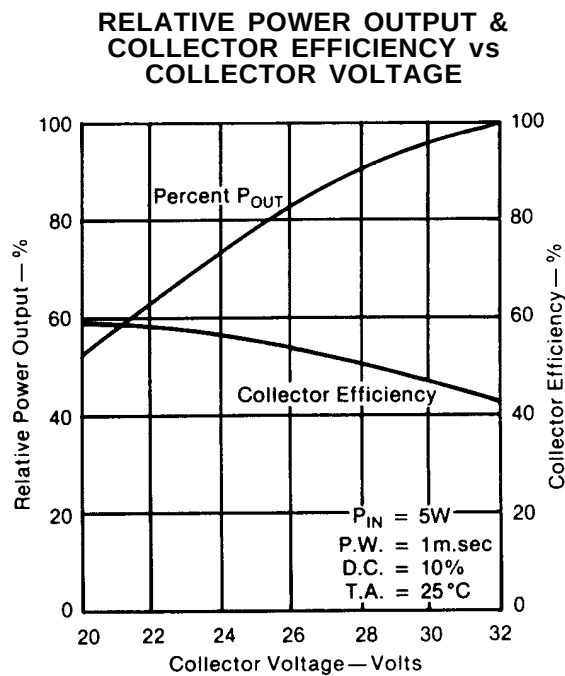
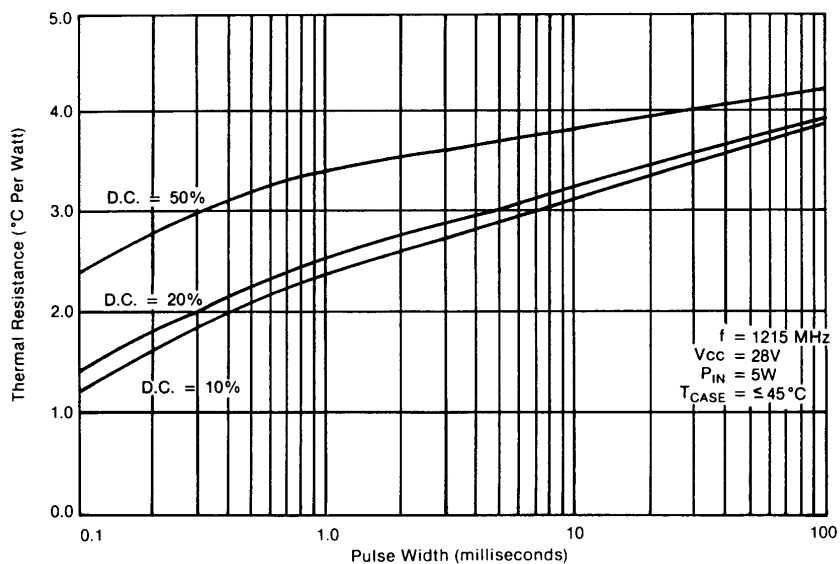
Symbol	Test Conditions		Value			Unit
			Min.	Typ.	Max.	
BV_{CBO}	$I_{\text{C}} = 10\text{mA}$	$I_{\text{E}} = 0\text{mA}$	55	—	—	V
BV_{EBO}	$I_{\text{E}} = 1\text{mA}$	$I_{\text{C}} = 0\text{mA}$	3.5	—	—	V
BV_{CER}	$I_{\text{C}} = 20\text{mA}$	$R_{\text{BE}} = 10\Omega$	55	—	—	V
I_{CES}	$V_{\text{BE}} = 0\text{V}$	$V_{\text{CE}} = 28\text{V}$	—	—	5	mA
h_{FE}	$V_{\text{CE}} = 5\text{V}$	$I_{\text{C}} = 1\text{A}$	15	—	150	—

DYNAMIC

Symbol	Test Conditions			Value			Unit
				Min.	Typ.	Max.	
P_{IN}	$f = 1215 - 1400\text{MHz}$	$P_{\text{IN}} = 5\text{W Peak}$	$V_{\text{CC}} = 28\text{V}$	26	36	—	W
η_{C}	$f = 1215 - 1400\text{MHz}$	$P_{\text{IN}} = 5\text{W Peak}$	$V_{\text{CC}} = 28\text{V}$	45	49	—	%
G_{P}	$f = 1215 - 1400\text{MHz}$	$P_{\text{IN}} = 5\text{W Peak}$	$V_{\text{CC}} = 28\text{V}$	7.2	8.5	—	dB

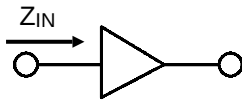
Note: Pulse Width = $1000\mu\text{s}$
Duty Cycle = 10%

TYPICAL PERFORMANCE

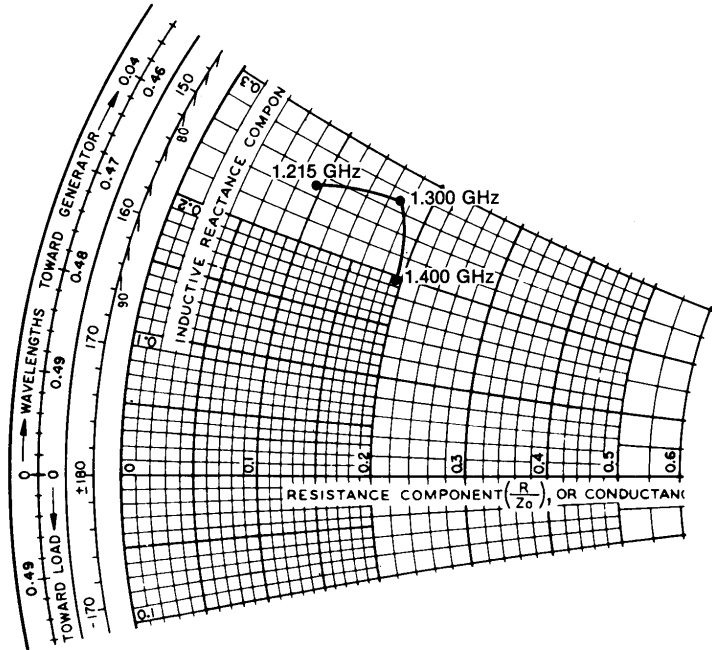
MAXIMUM THERMAL RESISTANCE
vs PULSE WIDTH

IMPEDANCE DATA

TYPICAL INPUT
IMPEDANCE

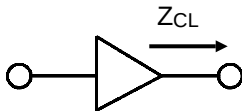


$P_{IN} = 5.0 \text{ W}$
 $V_{CC} = 28 \text{ V}$
 $Z_O = 50 \text{ Ohms}$

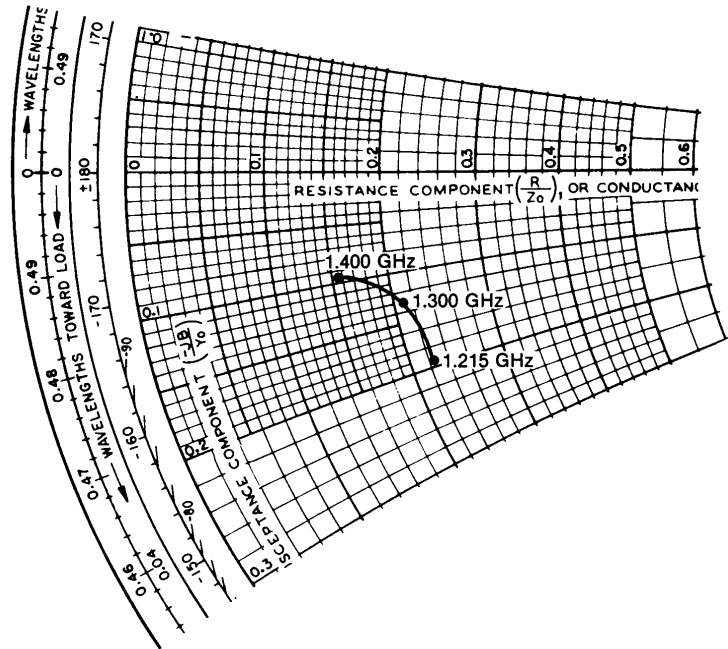


FREQ.	$Z_{IN} (\Omega)$	$Z_{CL} (\Omega)$
L = 1.215 GHz	$4.5 + j 12.5$	$11.0 - j 10.0$
M = 1.300 GHz	$8.5 + j 13.5$	$10.5 - j 6.5$
H = 1.400 GHz	$9.5 + j 10.0$	$8.0 - j 5.0$

TYPICAL COLLECTOR
LOAD IMPEDANCE



$P_{IN} = 5.0 \text{ W}$
 $V_{CC} = 28 \text{ V}$
 $Z_O = 50 \text{ Ohms}$



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