

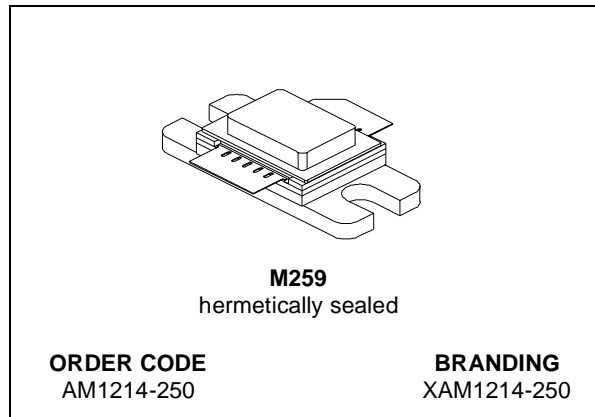


# AM1214-250

## RF POWER TRANSISTORS L-BAND RADAR APPLICATIONS

### TARGET DATA

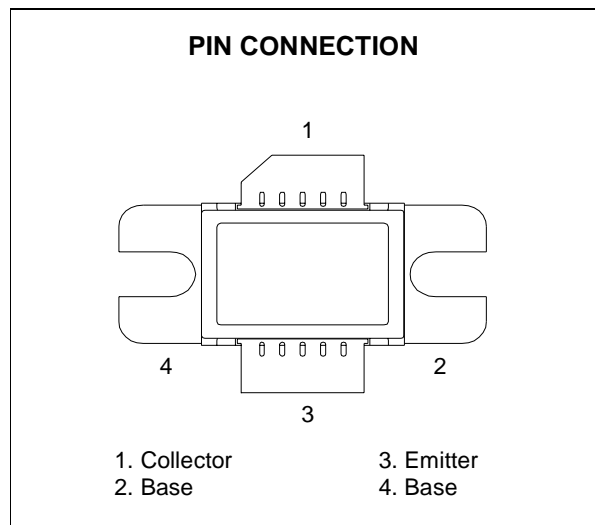
- REFRACTORY /GOLD METALLIZATION
- EMITTER SITE BALLASTING
- LOW RF THERMAL RESISTANCE
- INPUT/OUTPUT MATCHING
- OVERLAY GEOMETRY
- METAL/CERAMIC HERMETIC PACKAGE
- P<sub>OUT</sub> = 300 W MIN. WITH 8.0 dB GAIN
- 1215-1400 MHz OPERATION



### DESCRIPTION

The AM1214-250 is a rugged, Class C common base device designed for new L - Band medium & long pulse radar applications.

Minimal amplitude droop over a long pulse of 500 microsec. is guaranteed by a thermal design incorporating an overlay site-ballasted die geometry.



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

Symbol	Parameter	Value	Unit
P <sub>DISS</sub>	Power Dissipation (T <sub>C</sub> ≤ 85°C)*	786	W
I <sub>C</sub>	Device Current*	21	A
V <sub>CBO</sub>	Collector-Base Voltage	70	V
T <sub>J</sub>	Operating Junction Temperature	+250	°C
T <sub>STG</sub>	Storage Temperature	-65 to +200	°C

### THERMAL DATA

R <sub>th(j-c)</sub>	Junction -Case Thermal Resistance*	0.21	°C/W
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\* Applies only to rated RF amplifier operation: 150 microsec / 10%

ELECTRICAL SPECIFICATION ( $T_{CASE} = 25^{\circ}C$ )

## STATIC

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
$BV_{CBO}$	$I_C = 50 \text{ mA}$	$I_E = 0 \text{ mA}$	70			V
$BV_{CES}$	$I_C = 50 \text{ mA}$	$V_{BE} = 0 \text{ V}$	70			V
$BV_{EBO}$	$I_E = 20 \text{ mA}$	$I_C = 0 \text{ mA}$	3.5			V
$I_{CES}$	$V_{CE} = 40 \text{ V}$	$V_{BE} = 0 \text{ V}$			10	mA
$h_{FE}$	$V_{CE} = 5 \text{ V}$	$I_C = 0.5 \text{ A}$	10			

## DYNAMIC @ 150 MICROSEC / 10 %

Symbol	Test Conditions			Min.	Typ.	Max.	Unit
$P_{OUT}$	$f = 1215 - 1400 \text{ MHz}$	$P_{IN} = 40 \text{ W}$	$V_{CC} = 50 \text{ V}$	300	350		W
$\eta_C$	$f = 1215 - 1400 \text{ MHz}$	$P_{IN} = 40 \text{ W}$	$V_{CC} = 50 \text{ V}$	40	45		%
$G_P$	$f = 1215 - 1400 \text{ MHz}$	$P_{IN} = 40 \text{ W}$	$V_{CC} = 50 \text{ V}$	8.75	9.4		dB

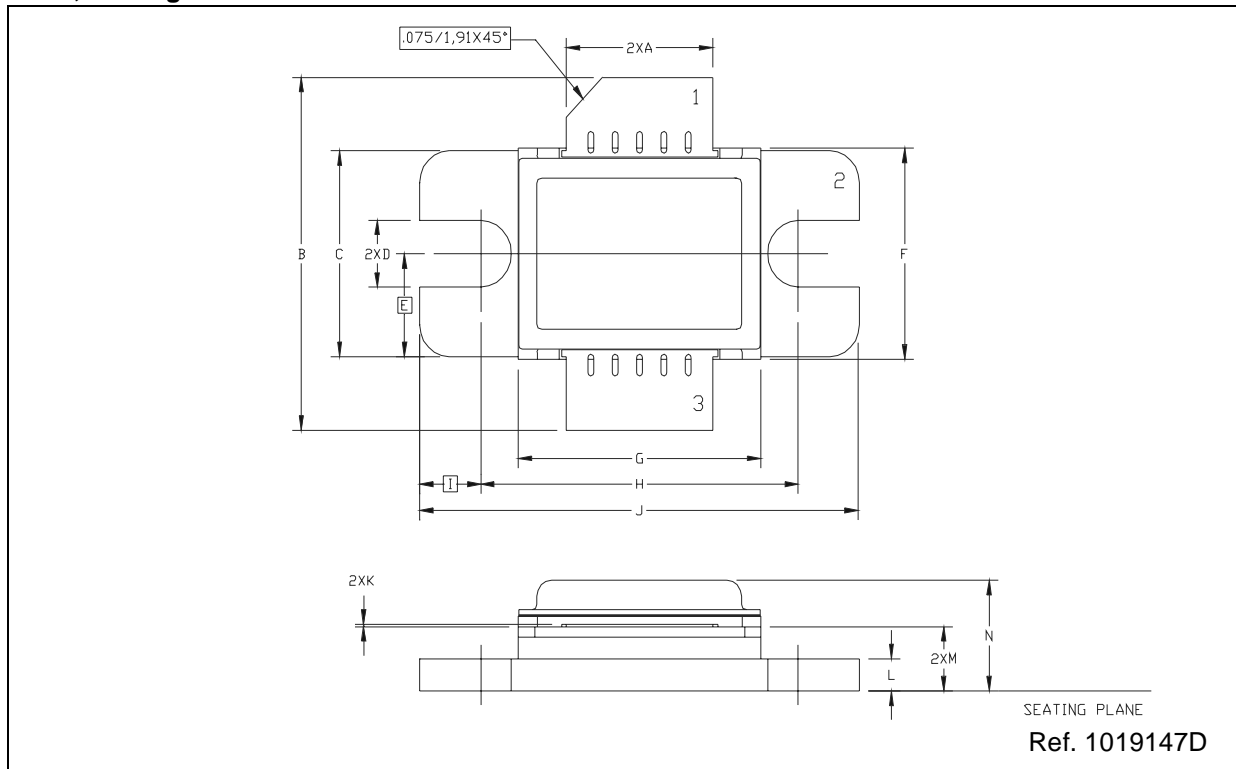
## DYNAMIC @ 500 MICROSEC / 10 %

Symbol	Test Conditions			Min.	Typ.	Max.	Unit
$P_{OUT}$	$f = 1215 - 1400 \text{ MHz}$	$P_{IN} = 40 \text{ W}$	$V_{CC} = 42 \text{ V}$	225	250		W
$\eta_C$	$f = 1215 - 1400 \text{ MHz}$	$P_{IN} = 40 \text{ W}$	$V_{CC} = 42 \text{ V}$	40	45		%
$G_P$	$f = 1215 - 1400 \text{ MHz}$	$P_{IN} = 40 \text{ W}$	$V_{CC} = 42 \text{ V}$	7.5	8.0		dB

**M259 (.400 x .500 SUPER WIDE 2/L HERM. W/FLG) MECHANICAL DATA**

DIM.	mm			Inch		
	MIN.	TYP.	MAX	MIN.	TYP.	MAX
A	7.49		7.75	.295		.305
B	19.56		21.08	.770		.830
C	9.65		9.91	.380		.390
D	3.18		3.43	.125		.135
E		4.90			.193	
F	10.03		10.34	.395		.407
G	12.45		12.95	.490		.510
H	16.38		16.64	.645		.655
I		3.18			.125	
J	22.61		23.11	.890		.910
K	0.05		0.15	.002		.006
L	1.40		1.65	.055		.065
M	2.79		3.30	.110		.130
N			5.84			.230

**M259, Package Outline**



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