GTMi, Inc.

Solution, Service, Performance, and Commitment

- Your Trusted Partner

Product Data Sheet

Model: GT1214-16

GT1214-16E

GaN/SiC High Efficiency Transistor

GaN Transistor Product Features

GT1214-16 is an internally pre-matched GaN on SiC HEMT, common source, class AB that capable of providing over 16 Watts pulsed RF output power and CW conditions with greater than 19 dB power gain, across the 1200 to 1400 MHz band. This compact size, thermally enhanced hermetically sealed transistor is designed for Avionic, Radar, Communication, and Industrial applications. It utilizes gold metallization and eutectic die attach to provide highest reliability and superior ruggedness.

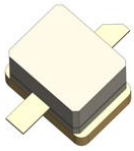
- *High Power >16W (Long Pulse 5mS/30%)*
- *Ultra High Efficiency >60%*
- *0.3dB Typical Flatness*

Market Application

- *Avionic*
- *Radar*
- *Industrial*
- *Communication*
- *General Purpose Driver Stage*

Case Outline

The following illustrations show the case outline of model GT1214-16 & -16E



GT1214-16	*GT1214-16E*
.550"x.160"x.150" (include lid)	*.250"x.160"x.150" (Earless Package)*
Case Outline T1	*Case Outline T1E*

GTMi, Inc. preserves the right to make changes without notice. Please contact us for the latest information. Contact Email: Sales@gtmii.com Website: www.gtmii.com Phone:408-228-7305

Absolute Maximum Ratings

Description	Test Condition	Max	Units
Maximum Power Dissipation	Transistor Dissipation at 25°C	25	W
MVI Maximum Voltage and Current	Drain Source Voltage (V_{DSS})	150	V
	Gate Source Voltage (V_{GS})	-8 to 0	V
MT Maximum Temperature	Storage Temperature	-55 to 125	°C
	Operating Junction Temperature	200	°C

RF Specifications, T=25^0 C

Symbol	Description	Test Condition	Min	Typical	Max	Units
Po	Output Power	Pin=.2W Freq=1200, 1300, 1400 MHz	16	18.5		Watts
Gp	Power Gain	Pin=.2W Freq=1200, 1300, 1400 MHz	19	19.7		dB
n_d	Drain Efficiency	Pin=.2W Freq=1200, 1300, 1400 MHz	55	63		%
VSWR-T	Mismatch Tolerance	Pin=.2W Freq=1300MHz, 5mS, 30%			3:1	
θ_{jc}	Thermal Resistance	5mS, 30% Condition		8		℃/W

• Bias Condition: Vdd = 50V, Idq = 20mA (Vgs = -2V to 4V Typical)

DC Characteristics, T=25^0 C

Symbol	Description	Test Condition	Min	Typical	Max	Units
$I_{D(off)}$	Drain Leakage Current	V_{GS}= -8V, V_{DD}= 150V			2	mA
$I_{G(off)}$	Gate Leakage Current	V_{GS}= -8V, V_{DD}= 0V			.5	mA

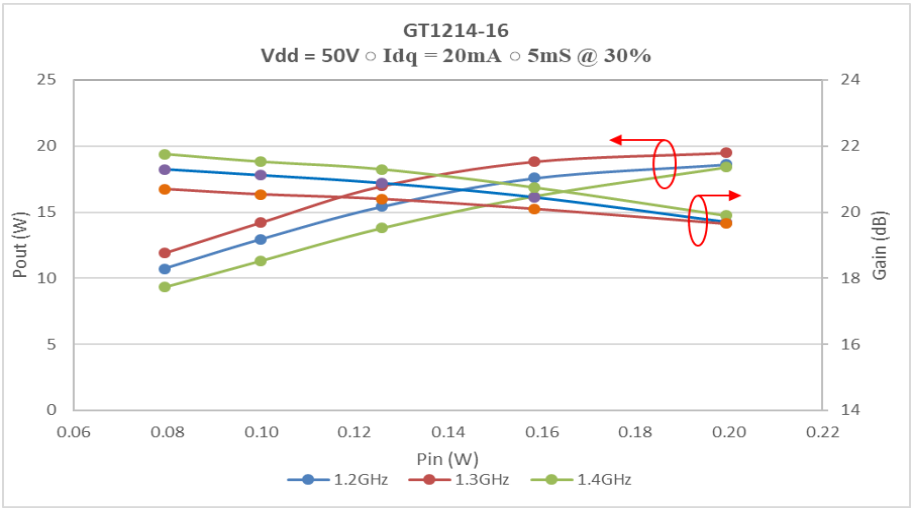
Product Classification

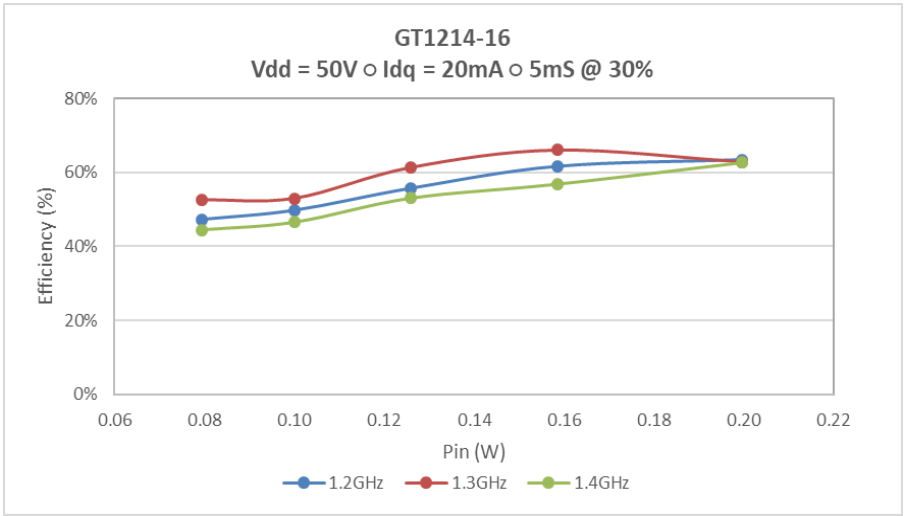
EAR-99

Typical Performance Data

5mS – 30% Pulsing

Frequency (MHz)	Pin (W)	Pout (W)	Id (A)	Nd (%)	Gp (dB)
1200	.20	18.6	.190	63	19.7
1300	.20	19.9	.200	63	19.9
1400	.20	18.4	.190	63	19.7





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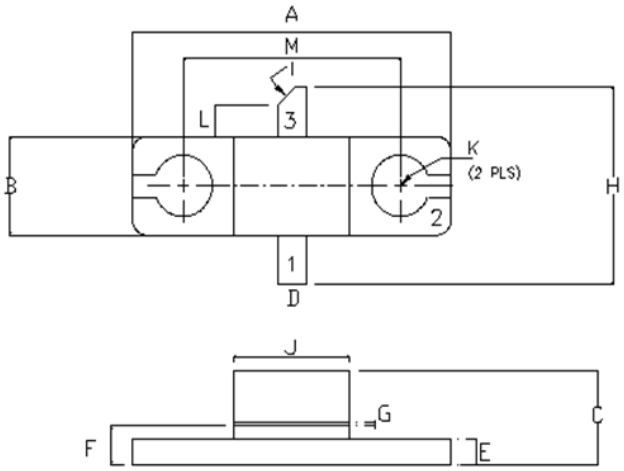
Package Dimensions (GT1214-16)

1 - Gate
2 - Source
3 - Drain



Label	Inches	Tolerance	Millimeter	Tolerance
A	0.550	.010	14.0	.250
B	0.160	.010	4.60	.250
C	0.150	.002	3.18	.050
D	0.050	.004	1.27	.130
E	0.040	.004	1.03	.130
F	0.062	.004	1.58	.130
G	0.005	.001	.130	.020
H	0.320	.010	8.12	.250
I	45 Degree	-	-	-
J	0.200	.010	5.08	.250
K	0.100 Dia	-	2.54 Dia	-
L	0.050	.004	1.27	.120
M	0.376	.004	9.52	.120

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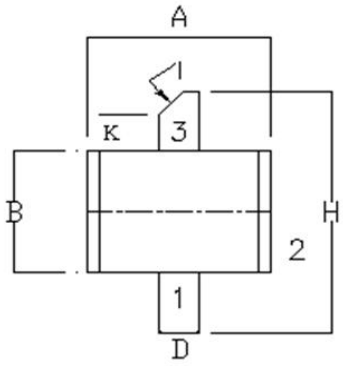
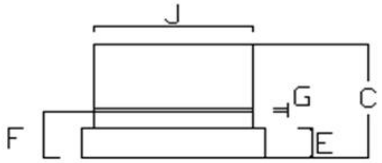
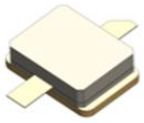
Earless Package (GT1214-16E)







1 - Gate
2 - Source
3 - Drain

Label	Inches	Tolerance	Millimeter	Tolerance
A	0.230	.010	5.85	.250
B	0.160	.010	4.60	.250
C	0.150	.002	3.18	.050
D	0.050	.004	1.27	.130
E	0.040	.004	1.03	.130
F	0.062	.004	1.58	.130
G	0.005	.001	.130	.020
H	0.320	.010	8.12	.250
I	45 Degree	-	-	-
J	0.200	.010	5.08	.250
K	0.055	.004	1.40	.120

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Test Circuit Information

(Contact GTMi for Details)

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Revision History

Revision Level / Date	Para. Affected	Description
Rev 2 / 05-10-2020	-	Initial Preliminary Release