

***GTMi, Inc.***

*Solution, Service, Performance, and Commitment*

*- Your Trusted Partner*

***Product Data Sheet***

***Model: GT1214-200L***

***GaN/SiC High Efficiency Transistor***

## ***GaN Transistor Product Features***

*GT1214-200L is an internally pre-matched GaN on SiC HEMT, common source, class AB that capable of providing over 18dB gain, 200 Watts at 3mS pulse width, 30% duty factor across the 1200 to 1400 MHz band. This thermally enhanced transistor is designed for L-band Long Pulse Radar applications. It utilizes gold metallization and eutectic die attach to provide highest reliability and superior ruggedness.*

- *High Power >200W*
- *Ultra High Efficiency >60%*
- *3ms, 30%, Long Pulse and High Duty Condition*

## ***Market Application***

- *L-band Radar For Long Pulse High Duty Cycle Application*

## ***Case Outline***

*The following illustrations show the case outline of model GT1214-200L*



*1.032"x.390"x.135 (include lid)*

*Case Outline T4*

## Absolute Maximum Ratings

Description	Test Condition	Max	Units
Maximum Power Dissipation	Transistor Dissipation at 25°C	350	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, $T=25^{\circ}C$

Symbol	Description	Test Condition	Min	Typical	Max	Units
Po	Output Power	Pin=3.2W Freq=1200, 1300, 1400 MHz	200	235		Watts
Gp	Power Gain	Pin=3.2W Freq=1200, 1300, 1400 MHz	18.0	18.7		dB
$n_d$	Drain Efficiency	Pin=3.2W Freq=1200, 1300, 1400 MHz	50	60		%
IRL	Input Return Loss	Pin=3.2W Freq=1200, 1300, 1400 MHz		-9	-7	dB
VSWR-T	Mismatch Tolerance	Pin=3.2W Freq=1300MHz			3:1	
$\theta_{jc}$	Thermal Resistance	3mS, 30% Condition		.70		°C/W
Droop	Pulse Droop	Pin=3.2W Freq=1200, 1300, 1400 MHz		.7	1	dB

- Bias Condition: Vdd=+50V, Idq=80mA average current (Vgs= -2.0 ~ -4.0V typical)

## DC Characteristics, $T=25^{\circ}C$

Symbol	Description	Test Condition	Min	Typical	Max	Units
$I_{D(off)}$	Drain Leakage Current	$V_{GS} = -8V, V_{DD} = 150V$			9	mA
$I_{G(off)}$	Gate Leakage Current	$V_{GS} = -8V, V_{DD} = 0V$			3	mA

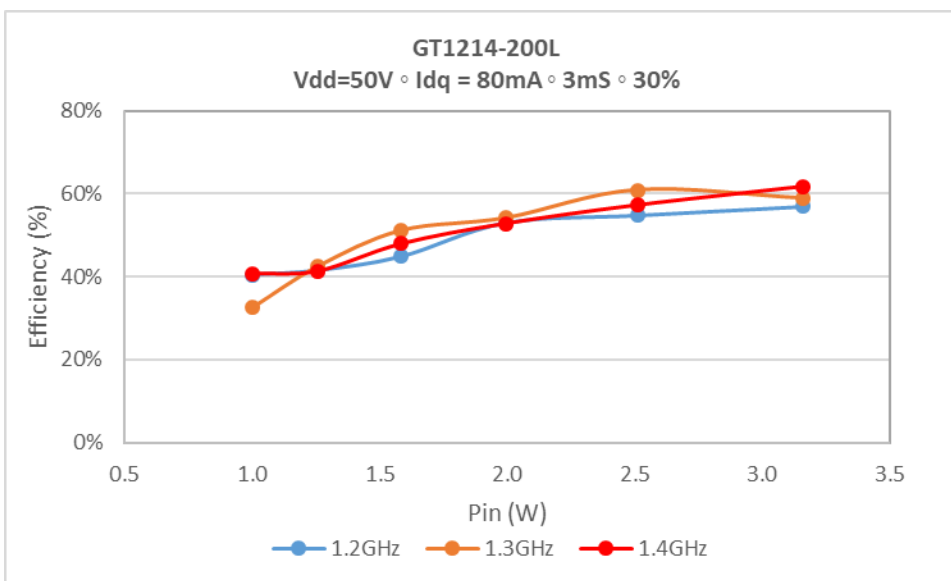
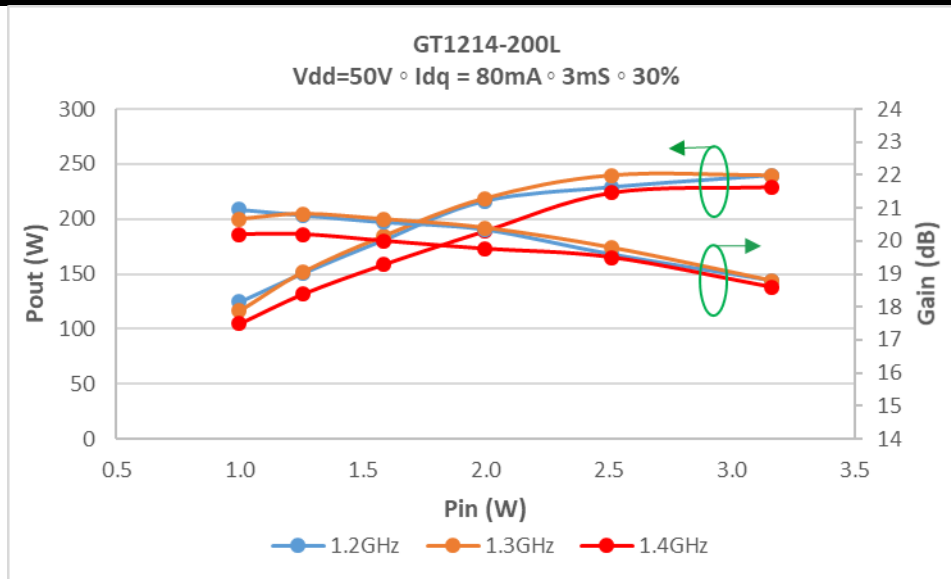
## Product Classification

EAR-99

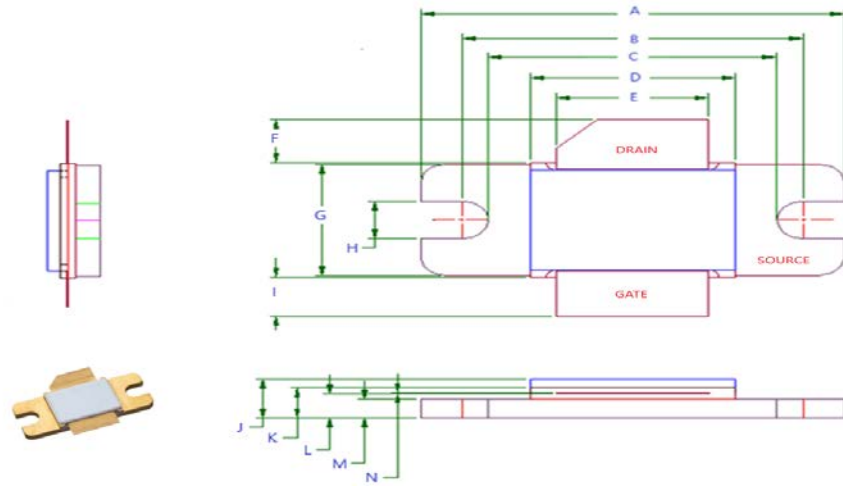
**Product Typical Performance**

**3mS – 30% Pulsing**

Frequency (MHz)	Pin (W)	Pout (W)	Id (A)	RTL(dB)	Nd (%)	Gp (dB)	Drop (dB)
1200	3.2	240	2.58	-7.2	57	18.8	0.80
1300	3.2	239	2.50	-8.5	60	18.8	0.65
1400	3.2	230	2.28	-14.0	66	18.6	0.60



**Package Dimensions**



Label	Inches	Tolerance	Millimeter	Tolerance
A	1.03	.010	26.18	.25
B	.830	.004	21.10	.10
C	.700	.004	17.82	.10
D	.498	.002	12.60	.05
E	.370	.002	9.42	.05
F	.152	.002	3.86	.05
G	.385	.004	8.82	.10
H	.130	.004	3.34	.10
I	.152	.004	3.86	.10
J	.136	.002	3.48	.02
K	.105	.002	2.70	.02
L	.086	.002	2.20	.02
M	.065	.002	1.68	.02
N	.004	.001	0.12	.05

## ***Test Circuit Information***

(Contact GTMi for Details)

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### ***Revision History***

<b>Revision Level / Date</b>	<b>Para. Affected</b>	<b>Description</b>
Rev 1 / 08-01-2020	-	Initial Preliminary Release