GTMi, Inc.

Solution, Service, Performance, and Commitment

- Your Trusted Partner

Product Data Sheet

Model: GT2731-100

GaN/SiC High Efficiency Transistor

GaN Transistor Product Features

GT2731-100 is an internally pre-matched GaN on SiC HEMT, common source, class AB that capable of providing over 100 Watts pulsed RF output power with greater than 14.4 dB power gain, under 200us, 10% pulse condition, across the 2700 to 3100 MHz band. This thermally enhanced transistor is designed for Avionics applications. It utilizes gold metallization and eutectic die attach to provide highest reliability and superior ruggedness.

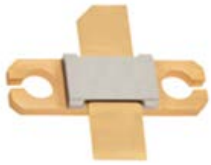
- *High Power >100W*
- *Ultra High Efficiency >55%*

Market Application

- *S-Band Radar*
- *Communication*

Case Outline

The following illustrations show the case outline of model GT2731-100



.550”x.160”x.150” (include lid)

Case Outline T3

Absolute Maximum Ratings

Description	Test Condition	Max	Units
Maximum Power Dissipation	Transistor Dissipation at 25°C	190	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=4W Freq=2700, 2900, 3100MHz	100	116		Watts
Gp	Power Gain	Pin=4W Freq=2700, 2900, 3100MHz	14	14.6		dB
n_d	Drain Efficiency	Pin=4W Freq=2700, 2900, 3100MHz	50	60		%
VSWR-T	Mismatch Tolerance	Pin=4W Freq=2900MHz, 100µS, 10%			3:1	
D_r	Pulse Droop	Pin=4W Freq=2700, 2900, 3100MHz		0.2	0.5	dB
θ_{jc}	Thermal Resistance	Pulse=200µS, DF=10%		1.15		$℃/W$
IRL	Input Return Loss	Pin=4W Freq=2700, 2900, 3100MHz		-9	-7	dB

- Bias Condition: Vdd = 50V, Idq = 25mA (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			4	mA
$I_{G(off)}$	Gate Leakage Current	V_{GS}= -8V, V_{DD}= 50V			2	mA

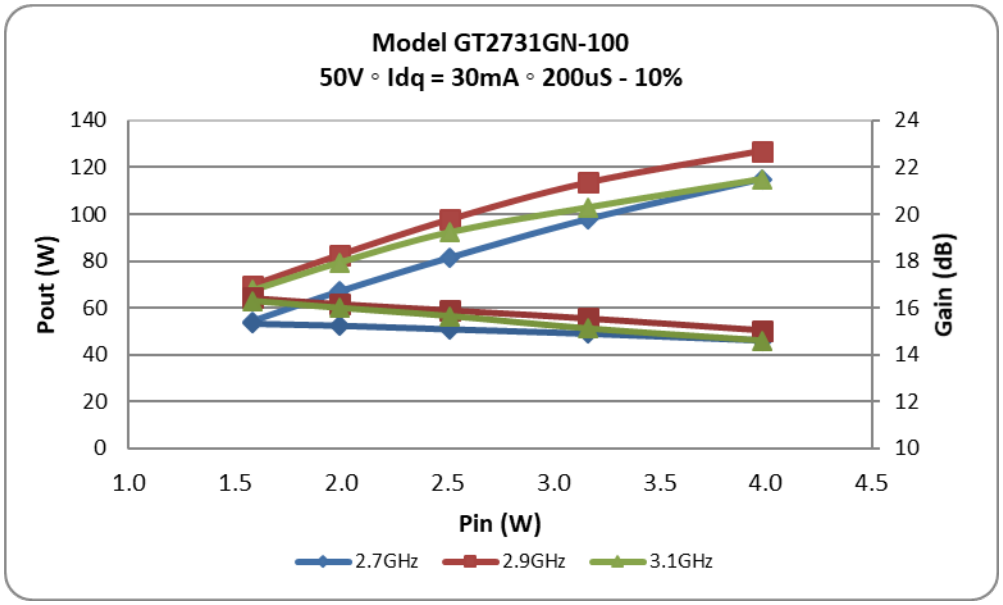
Product Classification

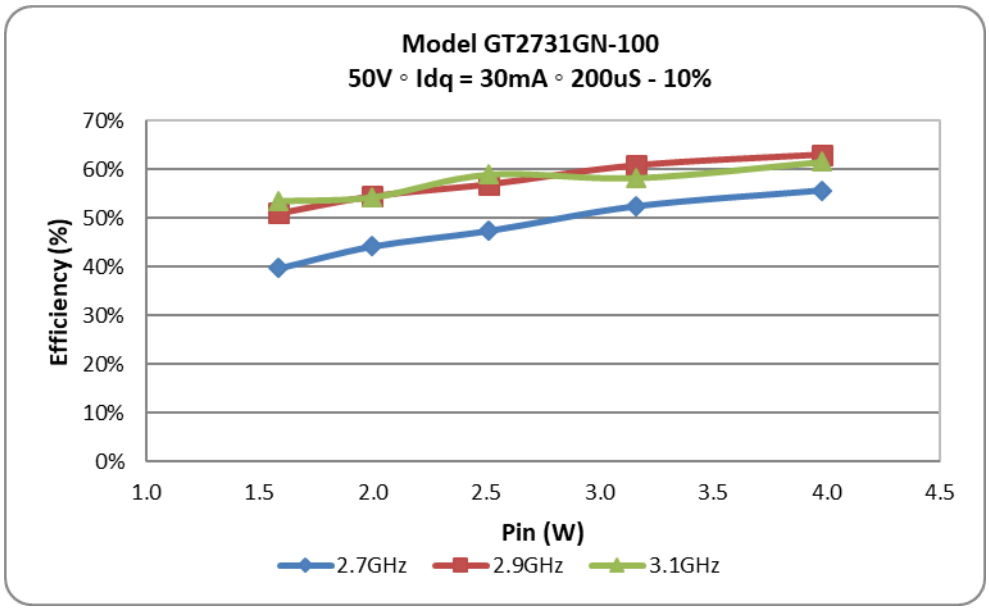
EAR-99

Product Typical Performance

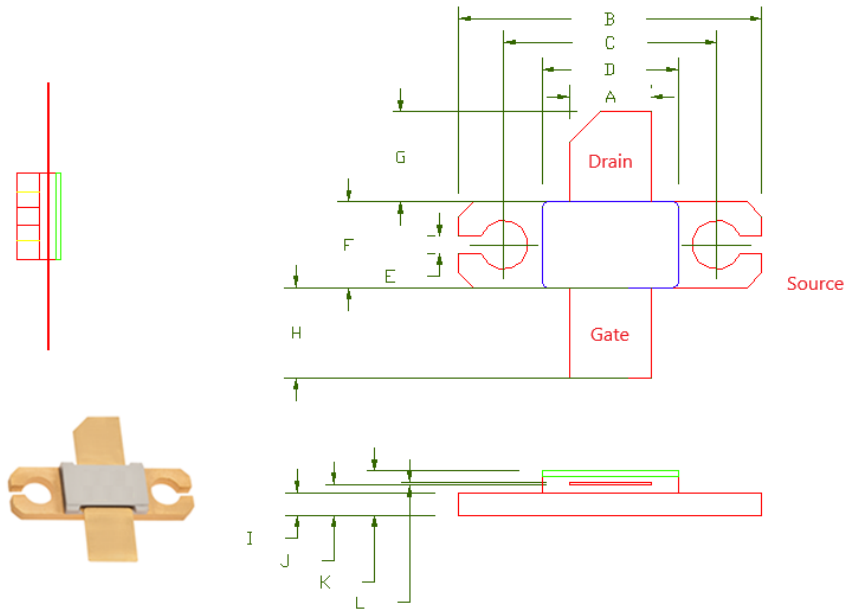
200µS – 10% Pulsing

Frequency (MHz)	Pin (W)	Pout (W)	Id (A)	RTL(dB)	Nd (%)	Gp (dB)	Droop (dB)
2700	4	115	.44	-10.6	56	14.6	0.25
2900	4	127	.43	-8.5	63	15.0	0.25
3100	4	115	.40	-8.4	62	14.6	0.20





Package Dimensions



Label	Inches	Tolerance	Millimeter	Tolerance
A	.216	.002	5.48	.05
B	.800	.005	20.32	.13
C	.562	.002	14.28	.05
D	.260	.002	6.60	.05
E	.046	.001	1.17	.03
F	.228	.002	5.79	.05
G	.240	.001	6.09	.03
H	.240	.001	6.09	.03
I	.062	.001	1.57	.03
J	.082	.001	2.08	.03
K	.116	.001	2.95	.03
L	.004	-	.102	-

Test Circuit Information

(Contact GTMi for Details)

Revision History

Revision Level / Date	Para. Affected	Description
Rev 2 / 08-01-2020	-	Initial Preliminary Release