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***Product Data Sheet***

***Model: GT2729-120***

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

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

*GT2729-120 is an internally pre-matched GaN on SiC HEMT, common source, class AB that capable of providing over 120 Watts pulsed RF output power with greater than 14.8 dB power gain, under 100us, 10% pulse condition, across the 2700 to 2900 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 >120W*
- *Ultra High Efficiency >60%*

## ***Market Application***

- *S-Band Radar*
- *Communication*

## ***Case Outline***

*The following illustrations show the case outline of model GT2731-110*



*.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	200	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=4W Freq=2700, 2800, 2900MHz	120	130		Watts
Gp	Power Gain	Pin=4W Freq=2700, 2800, 2900MHz	14.8	15.1		dB
$n_d$	Drain Efficiency	Pin=4W Freq=2700, 2900, 2900MHz	55	60		%
VSWR-T	Mismatch Tolerance	Pin=4W Freq=2900MHz, 100μS, 10%			3:1	
$D_r$	Pulse Droop	Pin=4W Freq=2700, 2800, 2900MHz		0.15	0.3	dB
$\theta_{jc}$	Thermal Resistance	Pulse=100μS, DF=10%		1.05		°C/W
IRL	Input Return Loss	Pin=4W Freq=2700, 2900, 2900MHz		-10	-7	dB

- Bias Condition: Vdd = 50V, Idq = 25mA ( $V_{gs} = -2V$  to  $-4V$  typical)

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

Symbol	Description	Test Condition	Min	Typical	Max	Units
$I_{D(off)}$	Drain Leakage Current	$V_{GS} = -8V$ , $V_{DD} = 150V$			4	mA
$I_{G(off)}$	Gate Leakage Current	$V_{GS} = -8V$ , $V_{DD} = 50V$			2	mA

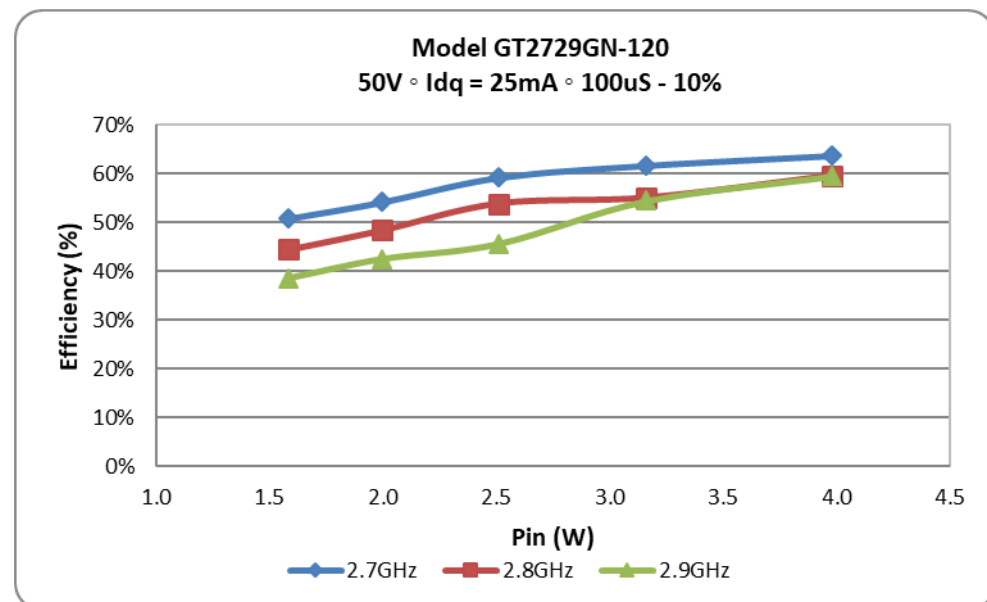
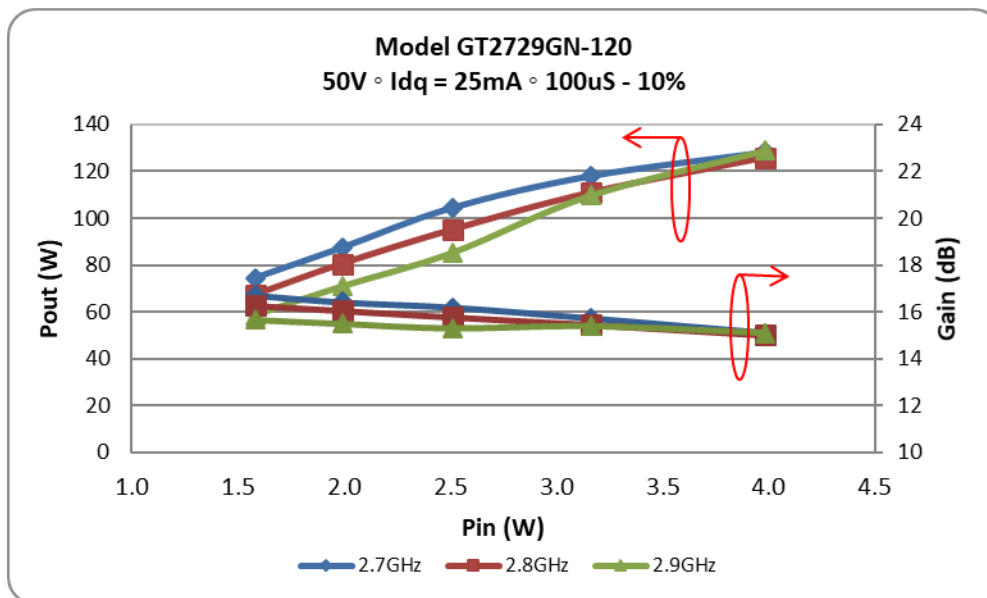
## Product Classification

EAR-99

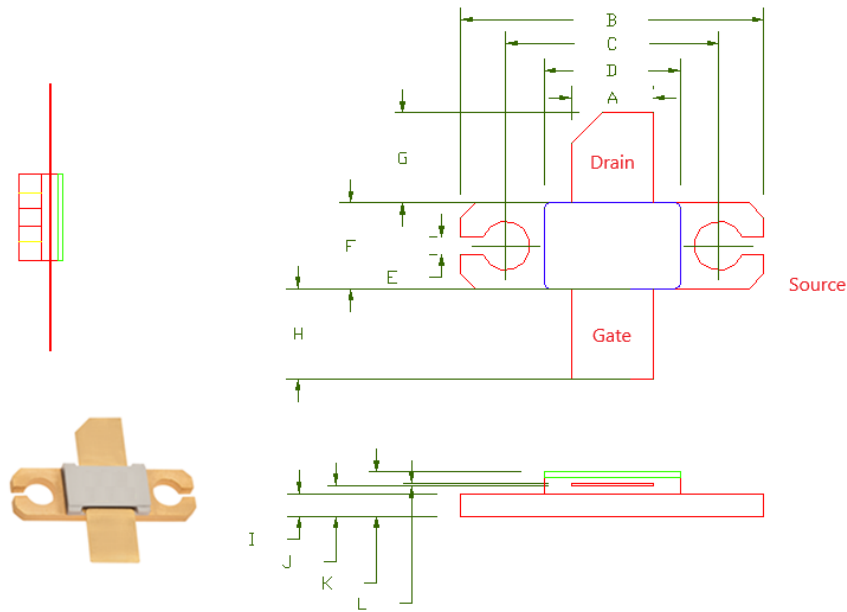
## Product Typical Performance

100μS – 10% Pulsing

Frequency (MHz)	Pin (W)	Pout (W)	Id (A)	RTL(dB)	Nd (%)	Gp (dB)	Droop (dB)
2700	4	128	.43	-10.0	64	15.1	0.15
2800	4	127	.44	-9.6	60	15.0	0.15
2900	4	129	.46	-10.0	60	15.1	0.15



## 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)

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### Revision History

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