

GTMi, Inc.

Solution, Service, Performance, and Commitment

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Product Data Sheet

Model: GT1020-70

GaN/SiC High Efficiency Transistor

GaN Transistor Product Features

GT1020-70 is an internally pre-matched GaN on SiC HEMT, common source, class AB that capable of providing over 70 Watts pulsed RF output power with CW or pulse conditions with greater than 14.5 dB power gain, across the 1000 to 2000 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 >70W (CW)*
- *Ultra High Efficiency typical 55%*

Market Application

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

Case Outline

The following illustrations show the case outline of model GT1020-70



.550"x.160"x.150" (include lid)

Case 1: Case Outline T3

Absolute Maximum Ratings

Description	Test Condition	Max	Units
Maximum Power Dissipation	Transistor Dissipation at 25°C	150	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=2.5W Op-Freq=1000, 1500, 2000 MHz	70	80		Watts
Gp	Power Gain	Pin=2.5W Op-Freq=1000, 1500, 2000 MHz	14.5	15.1		dB
n_d	Drain Efficiency	Pin=2.5W Op-Freq=1000, 1500, 2000 MHz	50	55		%
VSWR-T	Mismatch Tolerance	Pin=2.5W Freq=1000MHz, 100μS, 10%			5:1	
θ_{jc}	Thermal Resistance	CW Condition			1.6	°C/W

• Bias Condition: Vdd = 50V, Idq = 30mA (Vgs = -2V to 4V Typical)

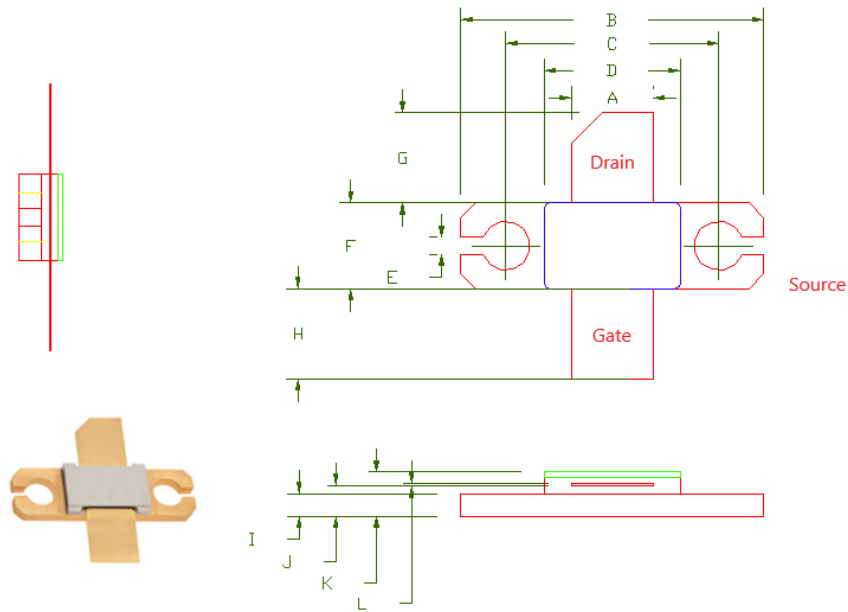
DC Characteristics, $T=25^0$ C

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

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 / 11-18-2020	-	Initial Preliminary Release