

GTMi, Inc.

Solution, Service, Performance, and Commitment

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Product Data Sheet

Model: GT0510-25CW

GaN/SiC High Efficiency Transistor

Surface Mount General Purpose Drive Stage

GaN Transistor Product Features

GT0510-25 is an internally pre-matched GaN on SiC HEMT, common source, class AB that capable of providing over 25 Watts pulsed RF output power and CW conditions with greater than 15 dB power gain, across the 50 to 1000 MHz band. This thermally enhanced SMT package transistor is designed for Radar, Avionic, Communication, and Industrial applications. It utilizes gold metallization and eutectic die attach to provide highest reliability and superior ruggedness.

- *High Power >25W (CW)*
- *Ultra High Efficiency >55%*
- *Excellent Bandwidth*

Market Application

- *General Purpose Drive Stage on Surface Mount Package*
- *Avionics*
- *Radar*
- *Industrial*
- *Communication*

Case Outline

The following illustrations show the case outline of model GT0510-25CW



.200"x.160"x.09" (include lid)

Case Outline – S1

Absolute Maximum Ratings

Description	Test Condition	Max	Units
Maximum Power Dissipation	Transistor Dissipation at 25°C	40	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=.8W Freq=50, 500, 1000 MHz	25	30		Watts
Gp	Power Gain	Pin=.8W Freq=50, 500, 1000 MHz	15	15.74		dB
n_d	Drain Efficiency	Pin=.8W Freq=50, 500, 1000 MHz	50	65		%
IRL	Input Return Loss	Pin=.8W Freq=50, 500, 1000 MHz		-10		dB
VSWR-T	Mismatch Tolerance	Pin=.8W Freq=1000MHz, 100μS, 10%			10:1	
θ_{jc}	Thermal Resistance	CW Condition		3.5		°C/W

• Bias Condition: Vdd = 50V, Idq = 60mA (Vgs = -2V to 4V Typical)

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

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

Product Classification

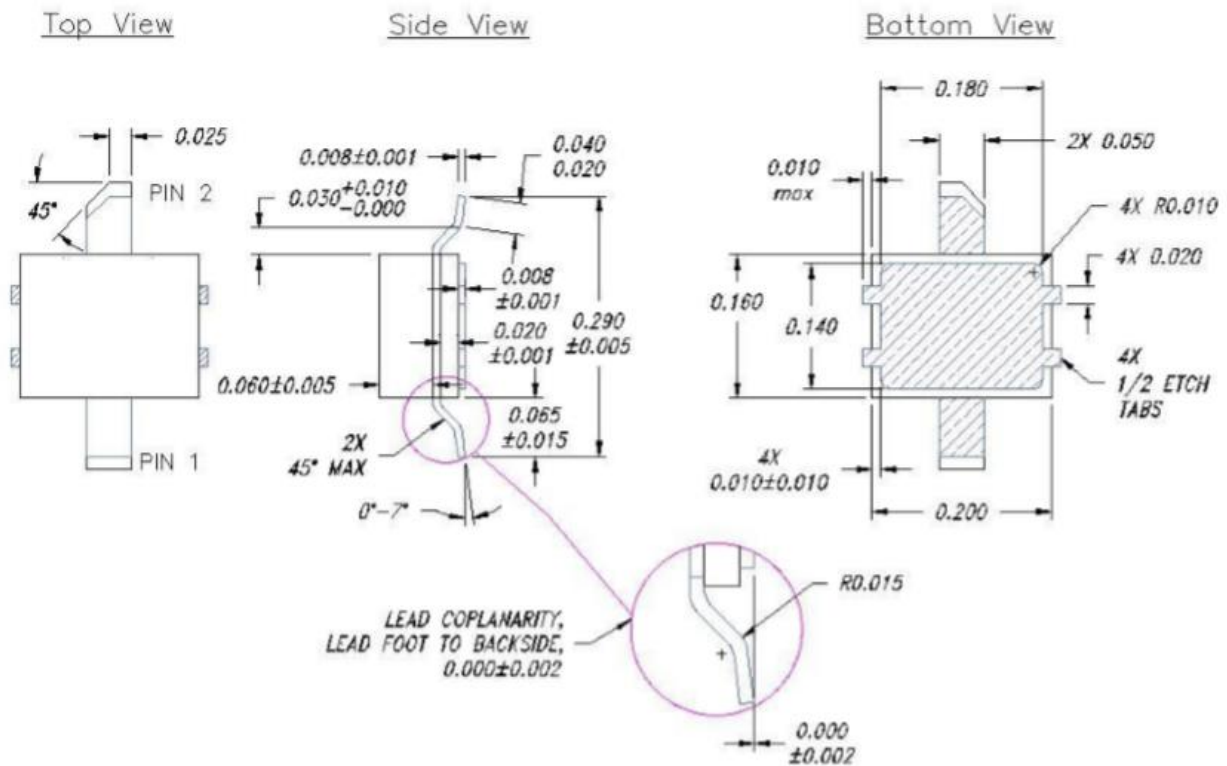
EAR-99

Typical Performance Data

CW Condition

Frequency (MHz)	Pin (W)	Pout (W)	Id (A)	Nd (%)	Gp (dB)
50	.80	28.0	0.78	68	15.40
500	.80	32.5	1.06	60	16.10
1000	.80	31.0	1.04	58	16.05

Surface Mount Package Dimensions – S1



Test Circuit Information

(Contact GTMi for Details)

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Revision History

Revision Level / Date	Para. Affected	Description
Rev 3 / 05-17-2020	Page 1, 2, &4	Add Surface Mount Package Description