Part Number: IGN12UM21A1

Integra
TECHNOLOGIES, INC.

12 Watt ♦ 4 GHz ♦ GaN on SiC ♦ Packaged Transistor

- ♦ GaN HEMT Technology
- ♦ All Gold Metal System
- ♦ Broadband Unmatched Design
- ♦ Frequency of Operation: DC to 4GHz
- ♦ 28V Operation
- ♦ S-Parameter CAD Files Available Upon Request

Absolute Maximum Ratings

Parameter	Symbol	Rating	Units	Conditions
Drain Voltage	V_D	40	V	25°C
Gate Voltage	V_G	-50 to 0	V	25°C
Drain-Gate Voltage	V_{DG}	80	V	25°C
Drain Current	I_D	2.5	A	25°C
Gate Current	I_G	14	mA	25°C
Input CW Power	P_{IN}	34	dBm	25°C
Storage Temperature	T_{STG}	-55 to +150	°C	--
Channel Temperature	T_{CH}	200	°C	--

Parameters

Parameter	Symbol	Min	Typ	Max	Units	Conditions
Gate Threshold Voltage	$V_{GS(TH)}$	--	-3.6	--	V	V_{DS} = 28 V, I_D = 250 mA
Capacitance Gate-Source	C_{GS}	--	3.6	--	pF	V_{DS} = 28 V, I_D = 250 mA
Capacitance Gate-Drain	C_{GD}	--	0.12	--	pF	V_{DS} = 28 V, I_D = 250 mA
Capacitance Drain-Source	C_{DS}	--	0.6	--	pF	V_{DS} = 28 V, I_D = 250 mA
Gain	G	--	18	--	dB	Note 1
Power Output Saturated	P_{SAT}	--	41	--	dBm	Note 1
Power Added Efficiency	PAE	--	58	--	%	Note 1
Leak Rate	LR	--	--	$1x10^{-3}$	--	Rate per MIL-STD-750D, atm-cm^3/sec
Thermal Resistance	θ_{JC}	--	--	8.0	°C/W	Note 1, P_{OUT} = 41dBm
Note 1: V_{DD}=28V, I_{DQ}= 250mA, T_F=25°C, F=3.0GHz.						

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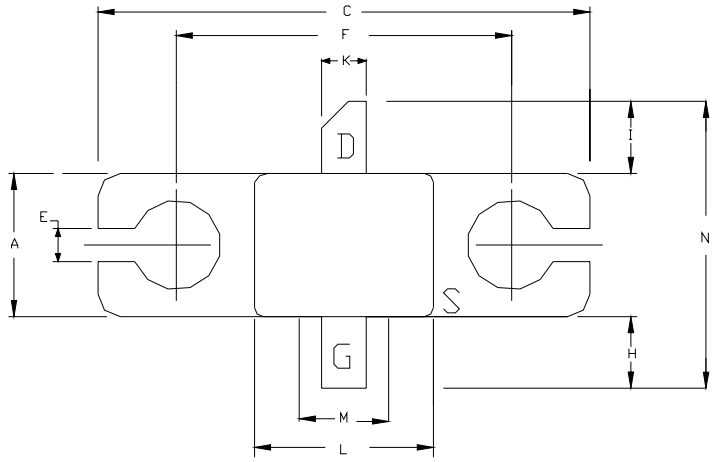
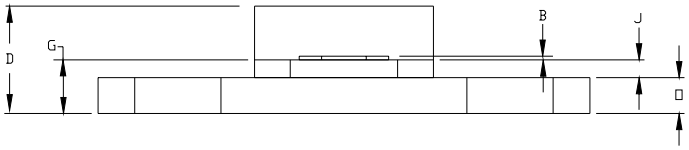
Package Outline Drawing





DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.155	0.165	3.94	4.19
B	0.003	0.006	0.07	0.15
C	0.545	0.555	13.84	14.09
D	0.112	0.146	2.84	3.70
E	0.027	0.037	0.68	0.94
F	0.370	0.380	9.40	9.65
G	0.057	0.067	1.45	1.70
H	0.060	0.100	1.52	2.54
I	0.060	0.100	1.52	2.54
J	0.015	0.025	0.38	0.63
K	0.045	0.055	1.14	1.40
L	0.195	0.205	4.95	5.21
M	0.165	0.175	4.19	4.44
N	0.315	0.325	8.00	8.25
O	0.035	0.045	0.89	1.14

PIN SCHEDULE	
D	DRAIN
S	SOURCE
G	GATE

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Definitions

Data Sheet Status	
Proposed Specification	This data sheet contains proposed specifications.
Preliminary Specification	This data sheet contains specifications based on preliminary measurements and data.
Product Specification	This data sheet contains final product specifications.
Maximum Ratings	
Stress above one or more of the maximum ratings may cause permanent damage to the device. These are maximum ratings only operation of the device at these or at any other conditions above those given in the characteristics sections of the specification is not implied. Exposure to maximum values for extended periods of time may affect device reliability.	

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