

## Thermally-Enhanced High Power RF GaN HEMT 700 W, 50 V, 960 – 1215 MHz

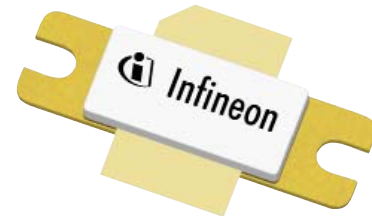
### Description

The GTVA107001EC is a 700-watt GaN high electron mobility transistor (HEMT) for use in the 960 to 1215 MHz frequency band. It features input matching, high efficiency, and a thermally-enhanced channel-mount package with bolt-down flange.

**Advance Specification Data Sheets** describe products that are being considered by Infineon for development and market introduction. The target performance shown in Advance Specifications is not final and should not be used for any design activity. Please contact Infineon about the future availability of these products.

### Features

- GaN HEMT technology
- Broadband internal input matching
- Typical pulsed CW performance (class AB), 960 – 1215 MHz, 50 V, pulse width = 128  $\mu$ s, duty cycle = 10%
  - Output power  $P_{3dB}$  = 700 W
  - Drain efficiency = 70%
  - Linear Gain = 17 dB
- Pb-free and RoHS compliant



GTVA107001EC  
Package H-36248-2

### Target RF Characteristics

#### Pulsed CW Specifications (tested in Infineon test fixture)

$V_{DD}$  = 50 V,  $I_{DQ}$  = 20 mA,  $P_{OUT(P3dB)}$  = 700 W;  $f$  = 960 MHz to 1215 MHz, pulse width = 128  $\mu$ s, duty cycle = 10%

Characteristic	Symbol	Min	Typ	Max	Unit
Linear Gain	$G_{ps}$	—	17	—	dB
Drain Efficiency	$\eta_D$	—	70	—	%

All published data at  $T_{CASE} = 25^\circ\text{C}$  unless otherwise indicated

ESD: Electrostatic discharge sensitive device—observe handling precautions!

## DC Characteristics

Characteristic	Conditions	Symbol	Min	Typ	Max	Unit
Drain-source Breakdown Voltage	$V_{GS} = -8\text{ V}$ , $I_D = \text{TBD mA}$	$V_{(BR)DSS}$	150	—	—	V
Drain-source Leakage Current	$V_{GS} = -8\text{ V}$ , $V_{DS} = 50\text{ V}$	$I_{DSS}$	—	—	??	mA
Gate Threshold Voltage	$V_{DS} = 10\text{ V}$ , $I_D = 100\text{ mA}$	$V_{GS(th)}$	-5	-3.2	-2.6	V
Gate Quiescent Voltage	$V_{DS} = 50\text{ V}$ , $I_D = \text{TBD mA}$	$V_{GS(Q)}$	—	TBD	—	V

## Maximum Ratings

Parameter	Symbol	Value	Unit
Drain-source Voltage	$V_{DSS}$	125	V
Gate-source Voltage	$V_{GS}$	-10 to +2	V
Operating Voltage	$V_{DD}$	0 to +50	V
Gate Current	$I_G$	TBD	mA
Drain Current	$I_D$	TBD	A
Junction Temperature	$T_J$	225	°C
Storage Temperature Range	$T_{STG}$	-65 to +150	°C

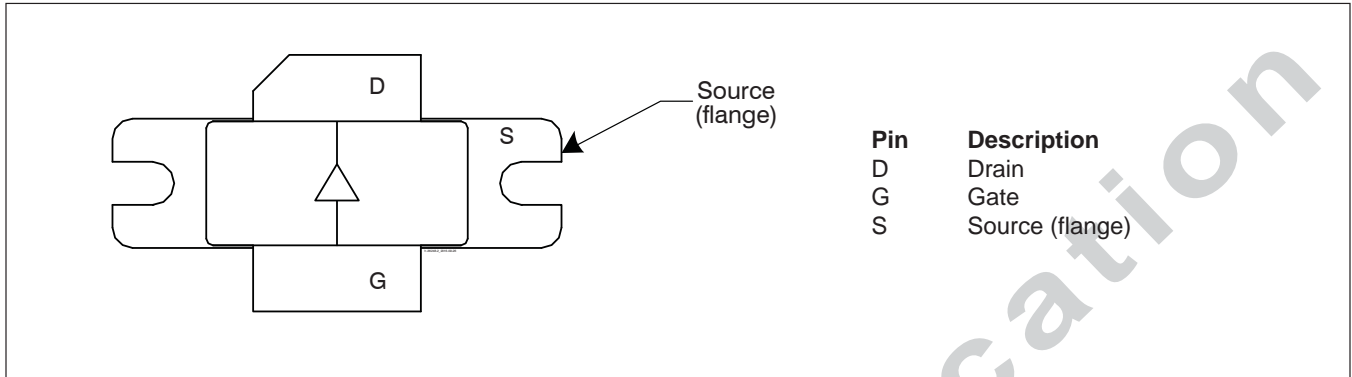
## Thermal Characteristics

Characteristic	Conditions	Symbol	Value	Unit
Thermal Resistance	$T_{CASE} = 70^\circ\text{C}$	$R_{\theta JC}$	TBD	°C/W

## Ordering Information

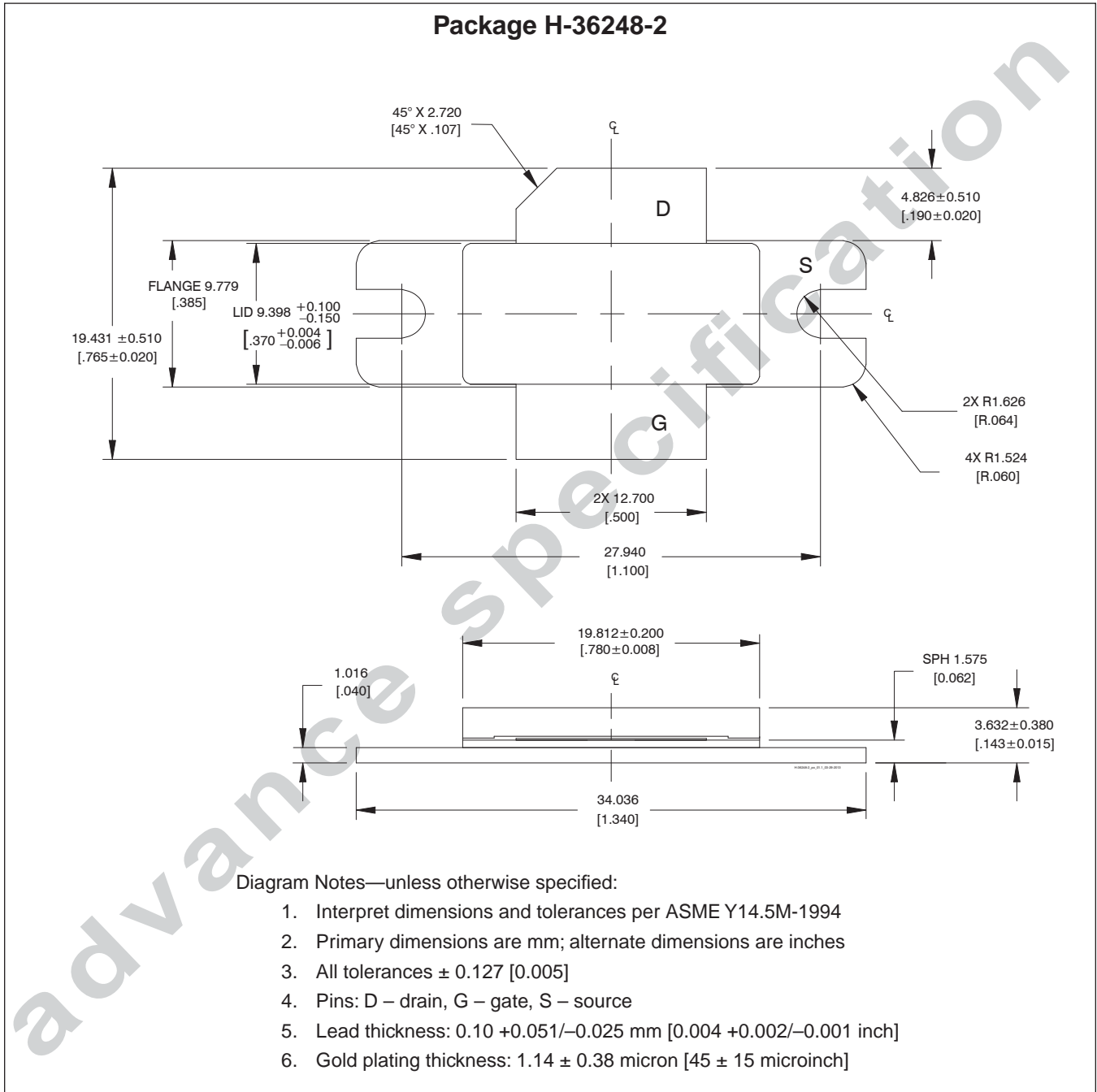
Type and Version	Order Code	Package and Description	Shipping
GTVA107001EC V1 R0	TBD	H-36248-2, single-ended, bolt-down flange	Tape & Reel, 50 pcs
GTVA107001EC V1 R2	TBD	H-36248-2, single-ended, bolt-down flange	Tape & Reel, 250 pcs

**Pinout Diagram** (top view)



See next page for package dimensions

Package Outline Specifications



Find the latest and most complete information about products and packaging at the Infineon Internet page <http://www.infineon.com/rfpower>

## Revision History

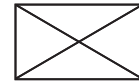
Revision	Date	Data Sheet	Page	Subjects (major changes at each revision)
01	2016-09-27	Advance	all	Proposed specification for new product development

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