

## Thermally-Enhanced High Power RF GaN HEMT 400 W, 50 V, 960 – 1215 MHz

### Description

The GTVA104001FA is a 400-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 surface-mount package with earless flange.

### Features

- GaN HEMT technology
- Broadband internal input matching
- Typical Pulsed CW performance, 960 - 1215 MHz, 50V,
  - Output power = 410 W
  - Drain Efficiency = 70 %
  - Gain = 19 dB
  - Pulse width = 128  $\mu$ s
  - Duty cycle = 10 %
- Pb-free and RoHS compliant

**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.



GTVA104001FA  
Package H-37265J-2

advance specification

### Target RF Characteristics

#### Typical RF Performance (tested in Infineon test fixture)

$V_{DD} = 50$  V,  $I_{DQ} = 50$  mA,  $P_{OUT} = 400$  W,  $f = 960 - 1215$  MHz, Pulse Width = 128  $\mu$ s, DC = 10%

Characteristic	Symbol	Min	Typ	Max	Unit
Linear Gain	$G_{ps}$	—	19	—	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** (measured on wafer prior to packaging)

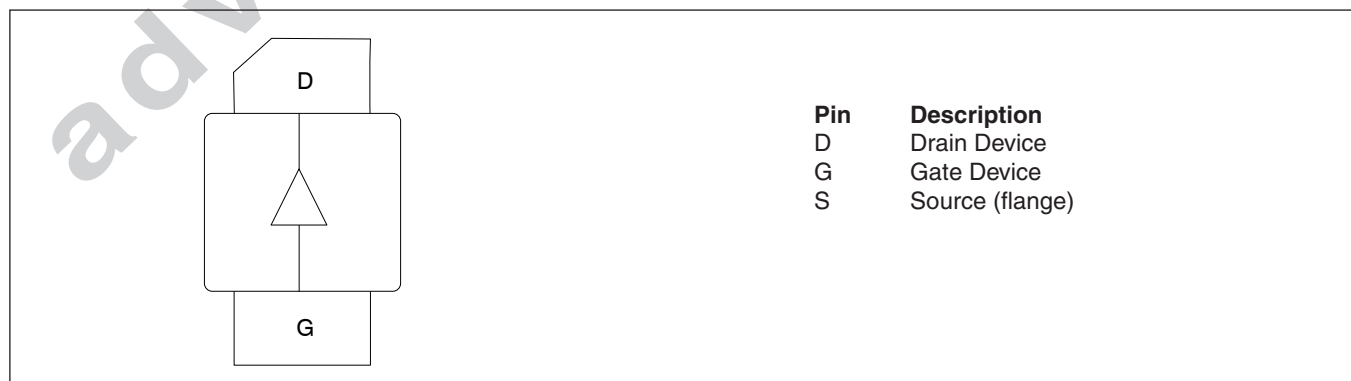
Characteristic	Conditions	Symbol	Min	Typ	Max	Unit
Drain-source Breakdown Voltage	$V_{GS} = -8\text{ V}$ , $I_D = \text{TBD mA}$	$V_{(BR)DSS}$	150	—	—	V
Drain Source Leakage Current	$V_{GS} = -8\text{ V}$ , $V_{DS} = 10\text{ V}$	$I_{DSX}$	—	—	TBD	mA
Gate Threshold Voltage	$V_{DS} = 10\text{ V}$ , $I_D = \text{TBD mA}$	$V_{GS(th)}$	TBD	TBD	TBD	V
Gate Quiescent Voltage	$V_{DS} = 50\text{ V}$ , $I_D = \text{TBD A}$	$V_{GS(Q)}$	—	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 Resistance ( $T_{CASE} = 70^\circ\text{C}$ )	$R_{\theta JC}$	TBD	°C/W

**Ordering Information**

Type and Version	Order Code	Package Description	Shipping
GTVA104001FA V1 R0	TBD	H-37265J-2, earless flange	Tape & Reel, 50 pcs
GTVA104001FA V1 R2	TBD	H-37265J-2, earless flange	Tape & Reel, 250 pcs

**Pinout Diagram** (top view)


Lead connections for GTVA104001FA

Package Outline Specifications

Package H-37265J-2

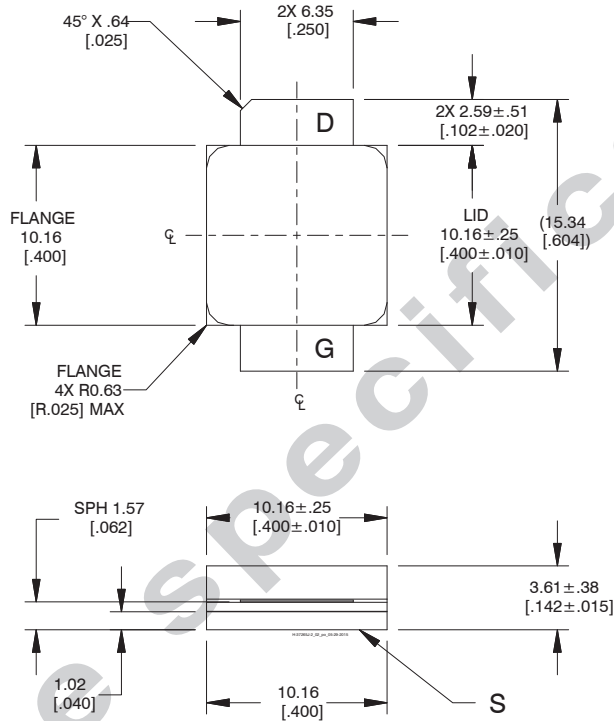


Diagram Notes—unless otherwise specified:

1. Interpret dimensions and tolerances per ASME Y14.5M-1994.
2. Primary dimensions are mm. Alternate dimensions are inches.
3. All tolerances ± 0.127 [0.005] unless specified otherwise.
4. Pins: D – drain; G – gate; S – source.
5. Lead thickness: 0.10 + 0.051/-0.025 mm [0.004 +0.002/-0.001 inch].
6. Gold plating thickness: 1.14 ± 0.38 micron [45 ± 15 microinch].

Find the latest and most complete information about products and packaging at the Infineon Internet page ([www.infineon.com/rfpower](http://www.infineon.com/rfpower))

## Revision History

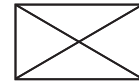
Revision	Date	Data Sheet Type	Page	Subjects (major changes since last revision)
01	2016-05-03	Advance	All	Data Sheet reflects advance specification for product development

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**Edition** 2016-05-03

**Published by**  
**Infineon Technologies AG**  
**85579 Neubiberg, Germany**

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