GTVA221701FA
advance specification

green Product

Thermally-Enhanced High Power RF GaN HEMT
170 W, 50 V, 1805 – 2170 MHz

Description

The GTVA221701FA is a 170-watt (P_{3dB}) GaN high electron mobility transistor (HEMT) for use in multi-standard cellular power amplifier applications. It features input matching, high efficiency, and a thermally-enhanced package with earless 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

- Input matched
- Typical Pulsed CW performance, 1805 MHz, 48 V, single side
  - Output power at P_{3dB} = 200 W
  - Efficiency = 70%
  - Gain = 18 dB
- Capable of handling 10:1 VSWR @48 V, 140 W (CW) output power
- GaN HEMT technology
- High power density
- High efficiency
- RoHS-compliant

GTVA261701FA
Package H-37265J-2

advance specification

Target RF Characteristics

Single- carrier WCDMA Specifications (tested in Infineon test fixture)
V_{DD} = 48 V, I_{DQ} = 300 mA, 3GPP signal, channel bandwidth = 3.84 MHz, peak/average = 9.9 dB @ 0.01% CCDF

Characteristics	Conditions	Symbol	Min	Typ	Max	Unit
Linear Gain	f_1 = 1805 MHz, P_{OUT} = 50 W avg	G_{ps}	—	19	—	dB
Drain Efficiency		η_D	—	38	—	%
Adjacent Channel Power Ratio		ACPR	—	–32	—	dBc
Linear Gain	f_2 = 2170 MHz, P_{OUT} = 50 W avg	G_{ps}	—	19	—	dB
Drain Efficiency		η_D	—	36	—	%
Adjacent Channel Power Ratio		ACPR	—	–28	—	dBc

All published data at T_{CASE} = 25°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 V, I_D = 20 mA	$V_{(BR)DSS}$	150	—	—	V
Gate Threshold Voltage	V_{DS} = 10 V, I_D = 20 mA	$V_{GS(th)}$	–3.8	–3.0	–2.3	V
Gate Quiescent Voltage	V_{DS} = 50V, I_D = 1.0 A	$V_{GS(Q)}$	—	–2.8	—	V
Saturated Drain Current	V_{DS} = 6.0 V, V_{GS} = 2.0 V	I_{DS}	15	18	—	A

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	IG	20	mA
Drain Current	Id	7.5	A
Junction Temperature	T_J	225	°C
Storage Temperature Range	T_{STG}	–65 to +150	°C
Thermal Resistance	$R_{\theta JC}$	TBD	°C/W

Ordering Information

Type and Version	Order Code	Package Description	Shipping
GTVA221701FA V1 R0	TBD	H-37265J-2, earless flange	Tape & Reel, 50 pcs
GTVA221701FA V1 R2	TBD	H-37265J-2, earless flange	Tape & Reel, 250 pcs

Package Outline Specifications

Package H-37265J-2

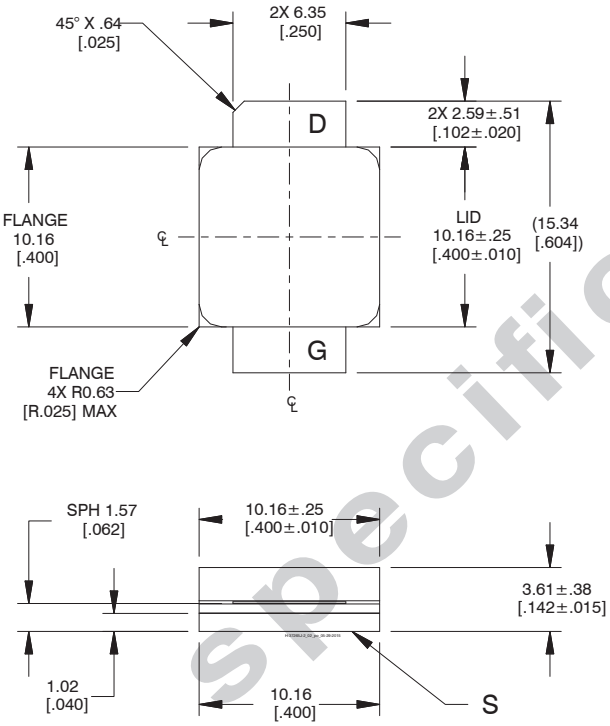

Diagram Notes—unless otherwise specified:

1. Interpret dimensions and tolerances per ASME Y14.5M-1994.
2. Primary dimensions are mm. Alternate dimensions are inches.
3. All tolerances ± 0.127 [.005] unless specified otherwise.
4. Pins: D – drain; G – gate; S – source.
5. Lead thickness: 0.10 + 0.051/-0.025 mm [.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
http://www.infineon.com/rfpower

Revision History

Revision	Date	Data Sheet Type	Page	Subjects (major changes since last revision)
01	2015-07-27	Advance	All	Data Sheet reflects advance specification for product development

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