

Thermally-Enhanced High Power RF GaN HEMT 170 W, 50 V, 2620 – 2690 MHz

Description

The GTVA261701FA 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, 2690 MHz, 48 V, single side
 - Output power at P_{3dB} = 170 W
 - Efficiency = 72%
 - Gain = 16 dB
- 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} = 200 mA, P_{OUT} = 50 W avg, f_1 = 2620 MHz, f_2 = 2690 MHz, channel bandwidth = 3.84 MHz, peak/average = 10 dB @ 0.01% CCDF

Characteristic	Symbol	Min	Typ	Max	Unit
Gain	G_{ps}	—	18	—	dB
Drain Efficiency	η_D	—	47	—	%
Adjacent Channel Power Ratio	ACPR	—	-29	—	dBc

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	$V_{GS} = -8\text{ V}$, $I_D = 32\text{ mA}$	$V_{(BR)DSS}$	150	—	—	V
Gate Threshold Voltage	$V_{DS} = 10\text{ V}$, $I_D = 32\text{ mA}$	$V_{GS(th)}$	-3.8	-3.0	-2.3	V
Gate Quiescent Voltage	$V_{DS} = 50\text{ V}$, $I_D = 1.0\text{ A}$	$V_{GS(Q)}$	—	-2.8	—	V
Saturated Drain Current	$V_{DS} = 6.0\text{ V}$, $V_{GS} = 2.0\text{ V}$	I_{DS}	15	18	—	A

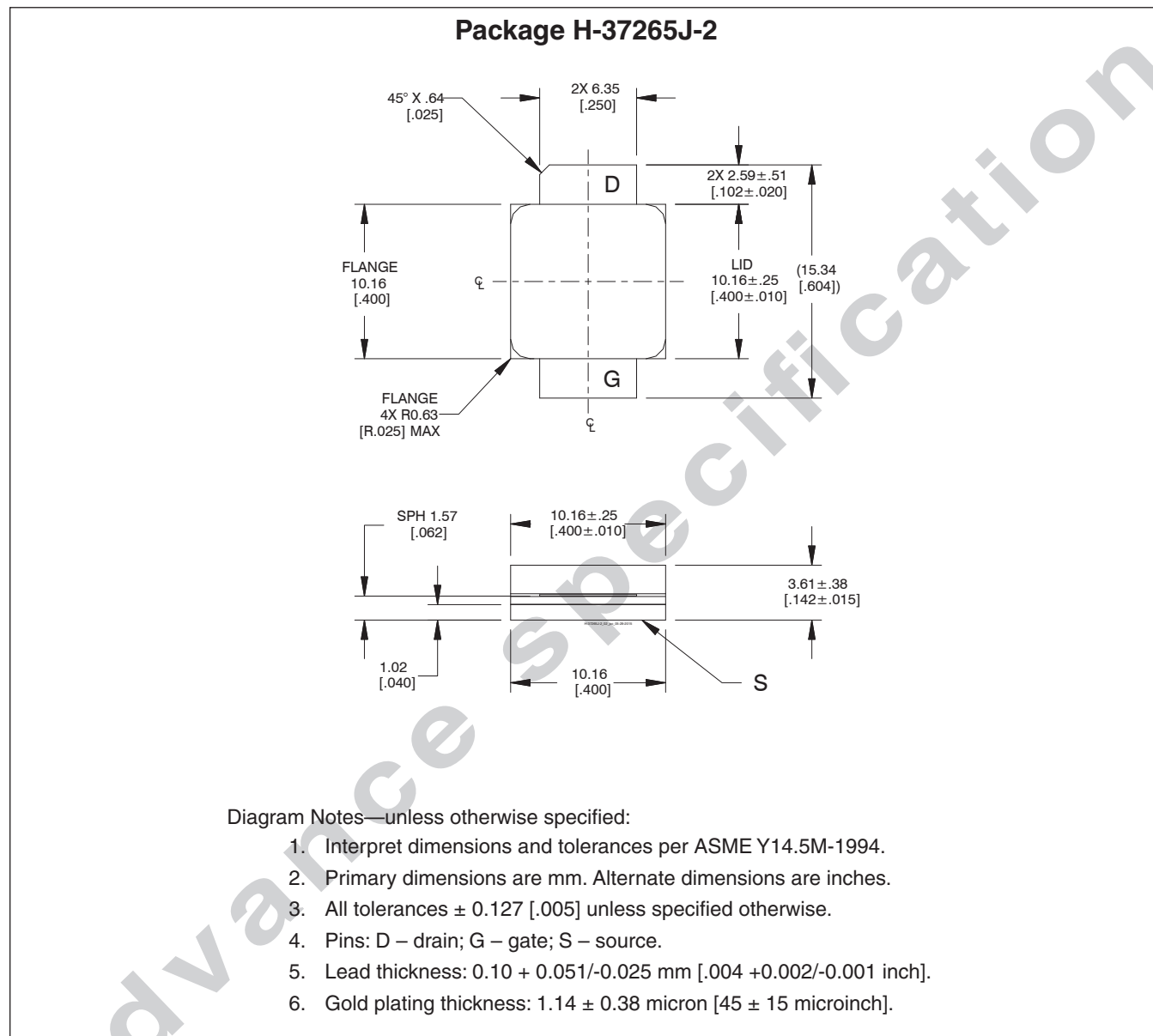
Maximum Ratings

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	I_G	20	mA
Drain Current	I_D	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
GTVA261701FA V1	TBD	H-37265J-2, earless flange	Tray
GTVA261701FA V1 R250	TBD	H-37265J-2,, earless flange	Tape & Reel, 250 pcs

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 Type	Page	Subjects (major changes since last revision)
01	2015-05-29	Advance	All	Data Sheet reflects advance specification for product development

We Listen to Your Comments

Any information within this document that you feel is wrong, unclear or missing at all?
Your feedback will help us to continuously improve the quality of this document.
Please send your proposal (including a reference to this document) to:

highpowerRF@infineon.com

To request other information, contact us at:
+1 877 465 3667 (1-877-GO-LDMOS) USA
or +1 408 776 0600 International



Edition 2015-05-29

Published by
Infineon Technologies AG
85579 Neubiberg, Germany

© 2015 Infineon Technologies AG
All Rights Reserved.

Legal Disclaimer

The information given in this document shall in no event be regarded as a guarantee of conditions or characteristics. With respect to any examples or hints given herein, any typical values stated herein and/or any information regarding the application of the device, Infineon Technologies hereby disclaims any and all warranties and liabilities of any kind, including without limitation, warranties of non-infringement of intellectual property rights of any third party.

Information

For further information on technology, delivery terms and conditions and prices, please contact the nearest Infineon Technologies Office (www.infineon.com/rfpower).

Warnings

Due to technical requirements, components may contain dangerous substances. For information on the types in question, please contact the nearest Infineon Technologies Office.

Infineon Technologies components may be used in life-support devices or systems only with the express written approval of Infineon Technologies, if a failure of such components can reasonably be expected to cause the failure of that life-support device or system or to affect the safety or effectiveness of that device or system. Life support devices or systems are intended to be implanted in the human body or to support and/or maintain and sustain and/or protect human life. If they fail, it is reasonable to assume that the health of the user or other persons may be endangered.