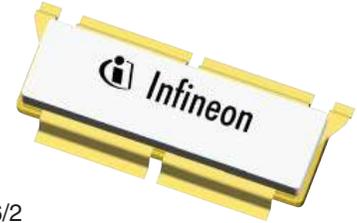


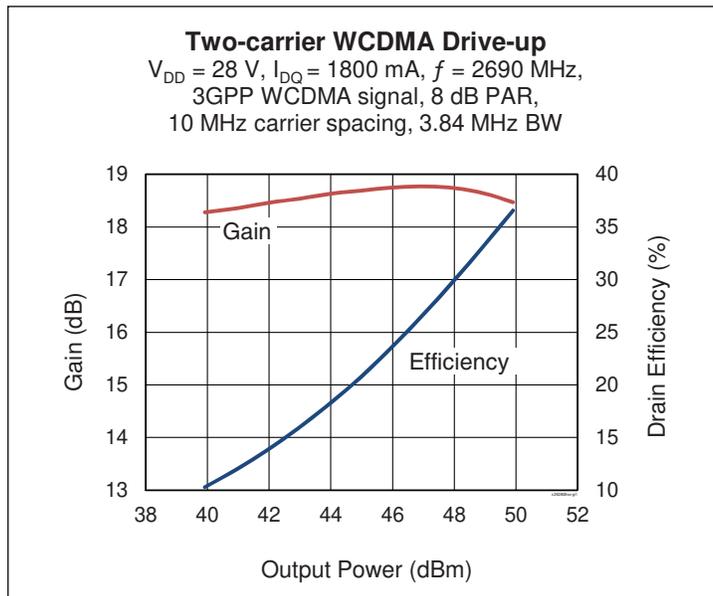
Thermally-Enhanced High Power RF LDMOS FET 280 W, 28 V, 2620 – 2690 MHz

Description

The PTFC262808SV is a 280-watt LDMOS FET intended for use in multi-standard cellular power amplifier applications in the 2620 to 2690 MHz frequency band. Features include input and output matching, high gain and thermally-enhanced package. Manufactured with Infineon's advanced LDMOS process, this device provides excellent thermal performance and superior reliability.



PTFC262808SV
Package H-37275G-6/2
with formed leads



Features

- Broadband internal matching
- Typical CW pulsed performance, 2620 MHz, 28 V
 - Output power at $P_{1dB} = 280\text{ W}$
 - Efficiency = 52%
 - Gain = 18 dB
- Typical 1-carrier WCDMA performance, 2655 MHz, 28 V
 - Output power at $P_{1dB} = 56\text{ W avg.}$
 - Efficiency = 24%
 - Gain = 18.0 dB
- Integrated ESD protection: Human Body Model, Class 1C (per JESD22-A114)
- Low thermal resistance
- RoHS-compliant
- Capable of handling 10:1 VSWR at 28 V, 280 W (CW) output power

RF Characteristics

Single-carrier WCDMA Specifications (tested in Infineon production test fixture)

$V_{DD} = 28\text{ V}$, $I_{DQ} = 1800\text{ mA}$, $P_{OUT} = 56\text{ W}$ average, $f = 2655\text{ MHz}$, 3GPP WCDMA signal, channel bandwidth = 3.84 MHz, peak/average = 10 dB @ 0.01% CCDF

Characteristic	Symbol	Min	Typ	Max	Unit
Gain	G_{ps}	16.5	18.0	—	dB
Drain Efficiency	η_D	22	24	—	%
Adjacent Channel Power Ratio	ACPR	—	-33	-30	dBc

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

ESD: Electrostatic discharge sensitive device—observe handling precautions!

DC Characteristics (single side)

Characteristic	Conditions	Symbol	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	$V_{GS} = 0\text{ V}$, $I_{DS} = 10\text{ mA}$	$V_{(BR)DSS}$	65	—	—	V
Drain Leakage Current	$V_{DS} = 28\text{ V}$, $V_{GS} = 0\text{ V}$	I_{DSS}	—	—	1.0	μA
	$V_{DS} = 63\text{ V}$, $V_{GS} = 0\text{ V}$	I_{DSS}	—	—	10.0	μA
On-State Resistance	$V_{GS} = 10\text{ V}$, $V_{DS} = 0.1\text{ V}$	$R_{DS(on)}$	—	0.05	—	Ω
Operating Gate Voltage	$V_{DS} = 28\text{ V}$, $I_{DQ} = 1.45\text{ A}$	V_{GS}	—	2.65	—	V
Gate Leakage Current	$V_{GS} = 10\text{ V}$, $V_{DS} = 0\text{ V}$	I_{GSS}	—	—	1	μA

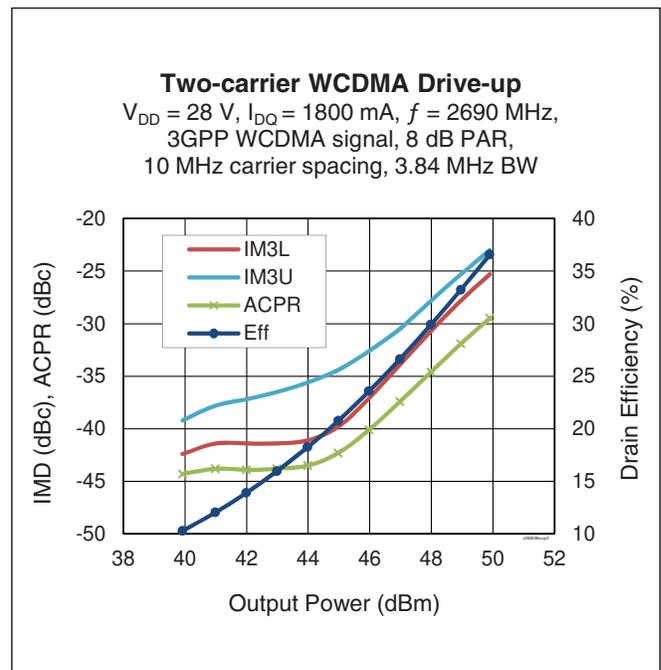
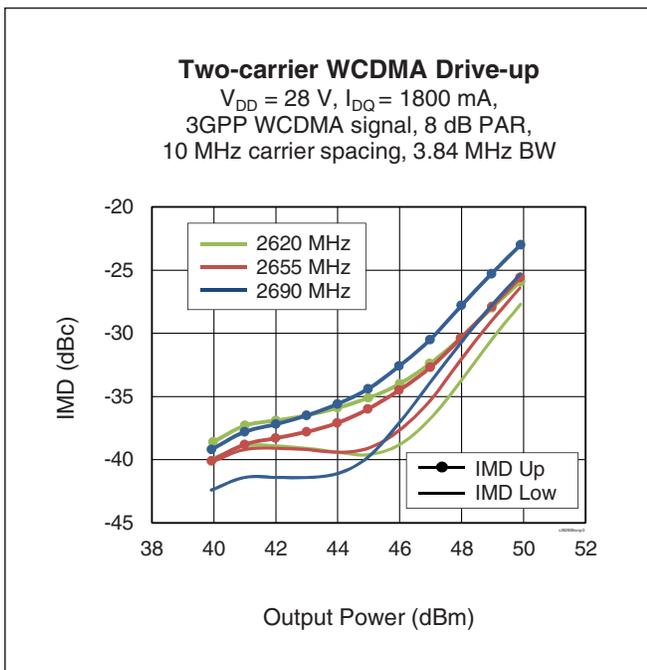
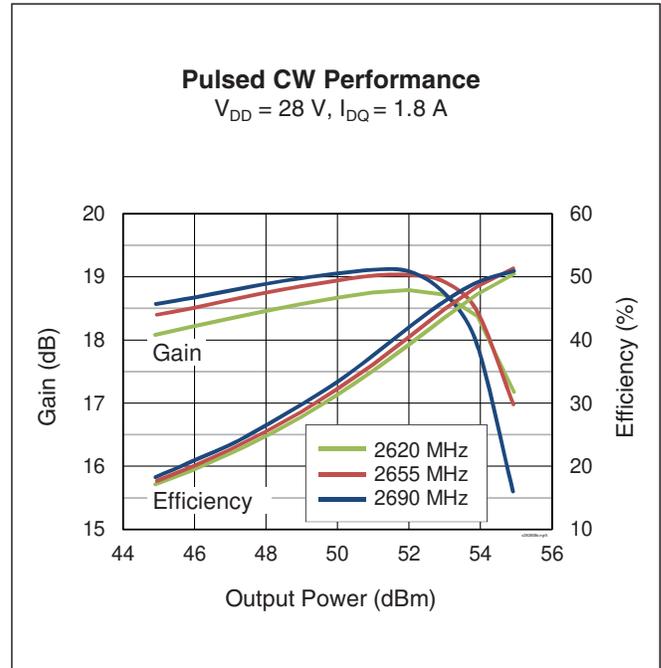
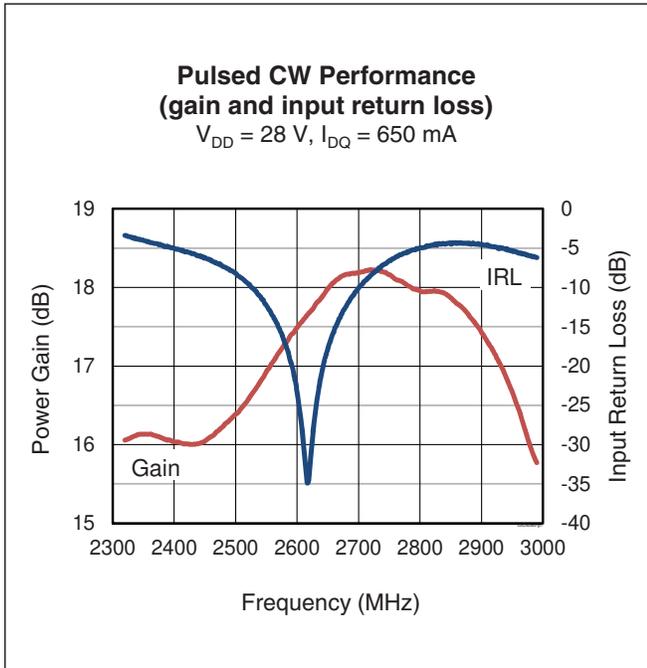
Maximum Ratings

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DSS}	65	V
Gate-Source Voltage	V_{GS}	-6 to +10	V
Operating Voltage	V_{DD}	0 to +32	V
Junction Temperature	T_J	200	$^{\circ}\text{C}$
Storage Temperature Range	T_{STG}	-65 to +150	$^{\circ}\text{C}$
Thermal Resistance ($T_{CASE} = 70^{\circ}\text{C}$, 200 W CW)	$R_{\theta JC}$	0.20	$^{\circ}\text{C/W}$

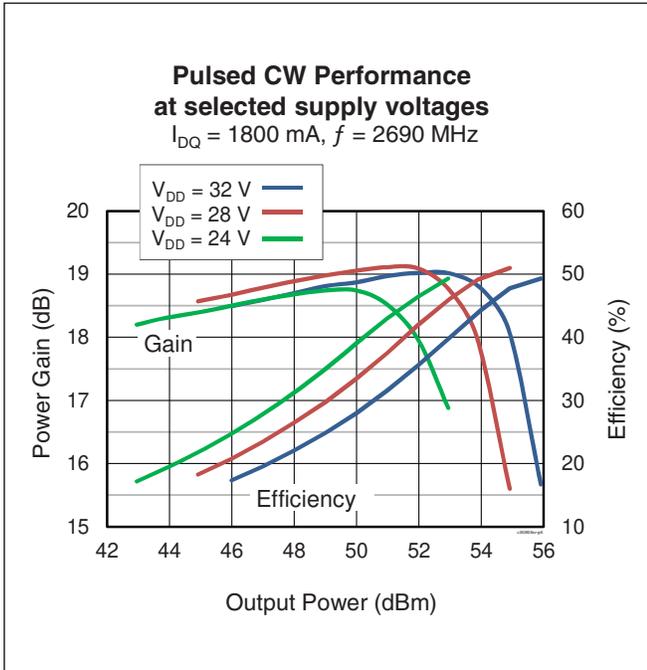
Ordering Information

Type and Version	Order Code	Package and Description	Shipping
PTFC 262808SV V1 R250	PTFC262808SVV1R250XTMA1	H-37275G-6/2, ceramic open-cavity, formed leads, earless	Tape & Reel, 250 pcs

Typical Performance (data taken in a reference design fixture)

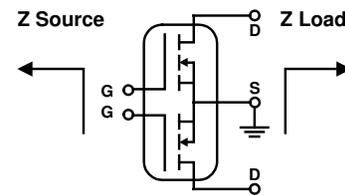


Typical Performance (cont.)



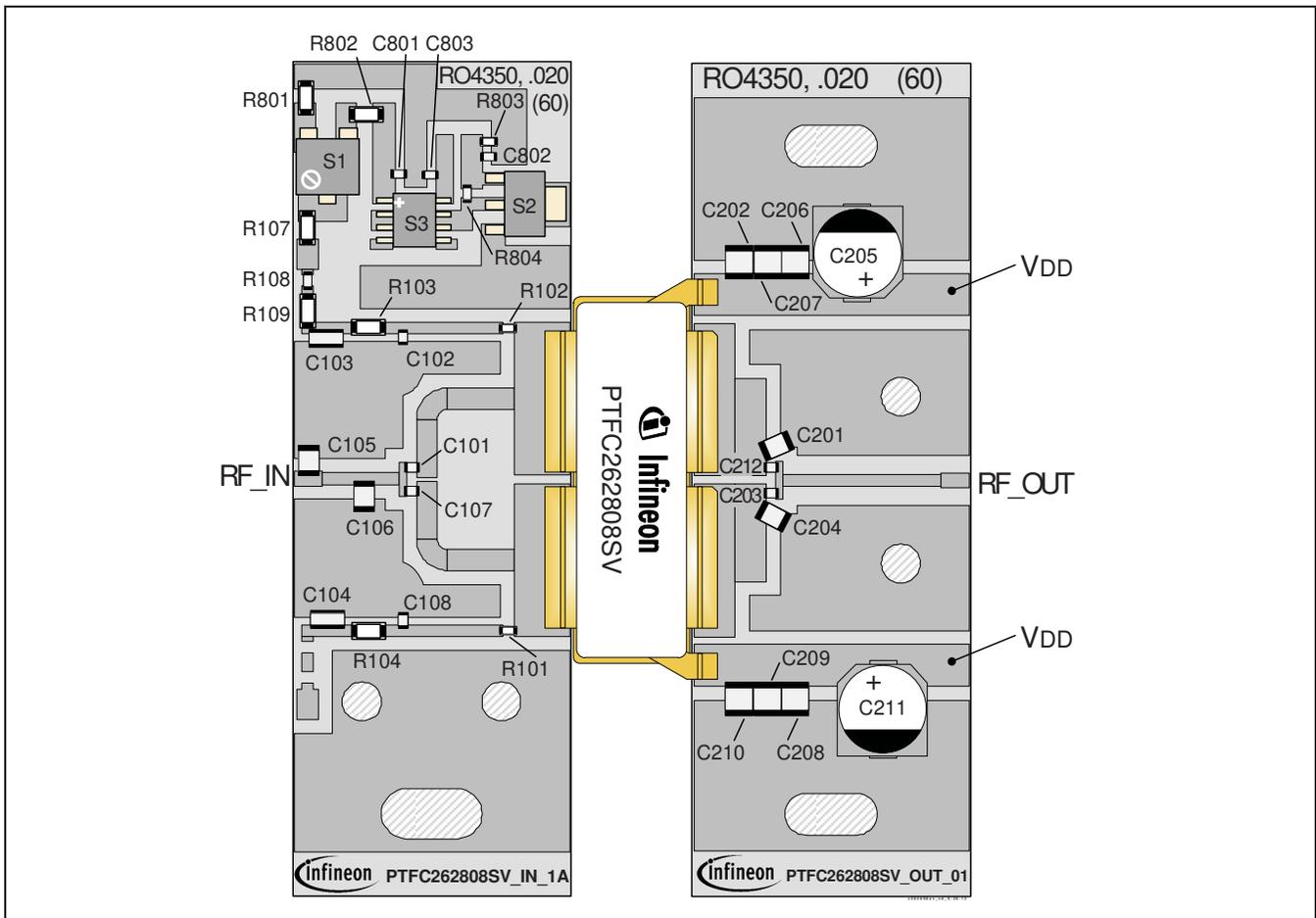
Broadband Circuit Impedance

Frequency MHz	Z Source Ω		Z Load Ω	
	R	jX	R	jX
2620	2.07	-2.45	0.69	-4.22
2655	1.98	-2.39	0.68	-4.19
2690	1.91	-2.33	0.66	-4.08



Reference Circuit, tuned for 2620 – 2690 MHz

DUT	PTFC262808SV
Test Fixture Part No.	LTN/PTFC262808SV V1
PCB	Rogers 4350, 0.508 mm [.020"] thick, 2 oz. copper, $\epsilon_r = 3.66$
Find Gerber files for this test fixture on the Infineon Web site at (http://www.infineon.com/rfpower)	



Reference circuit assembly diagram (not to scale)

Component Information

Component	Description	Suggested Manufacturer	P/N
Input			
C101, C102, C107, C108	Chip capacitor, 18 pF	ATC	ATC800A180JW250X
C103, C104	Capacitor, 10 μ F	Murata Electronics North America	LLL31BC70G106MA01L
C105	Chip capacitor, 0.4 pF	ATC	ATC100B0R4CW150X
C106	Chip capacitor, 0.7 pF	ATC	ATC100B0R7CW150X
C801, C802, C803	Chip capacitor, 1,000 pF	Panasonic Electronic Components	ECJ-1VB1H102K
R101, R102	Resistor, 10 Ω	Panasonic Electronic Components	ERJ-3GEYJ100V

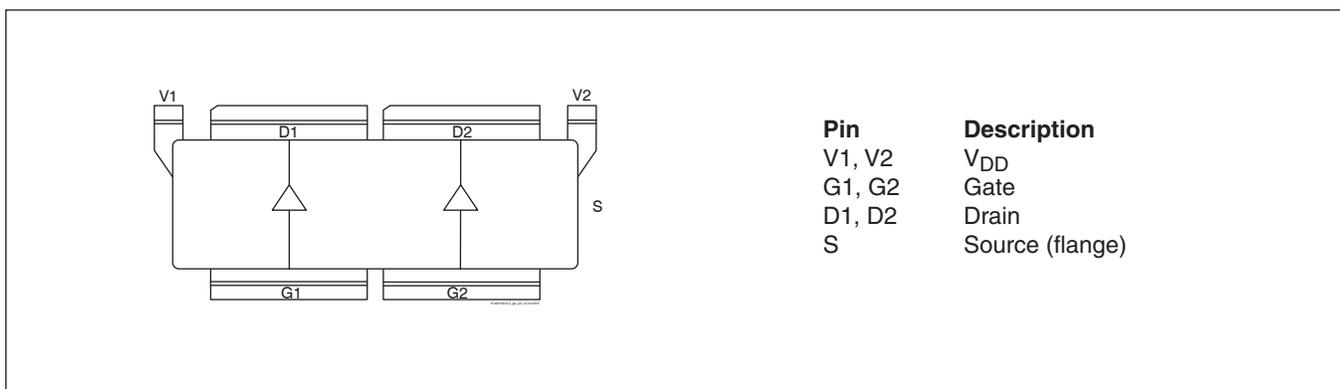
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Reference Circuit (cont.)

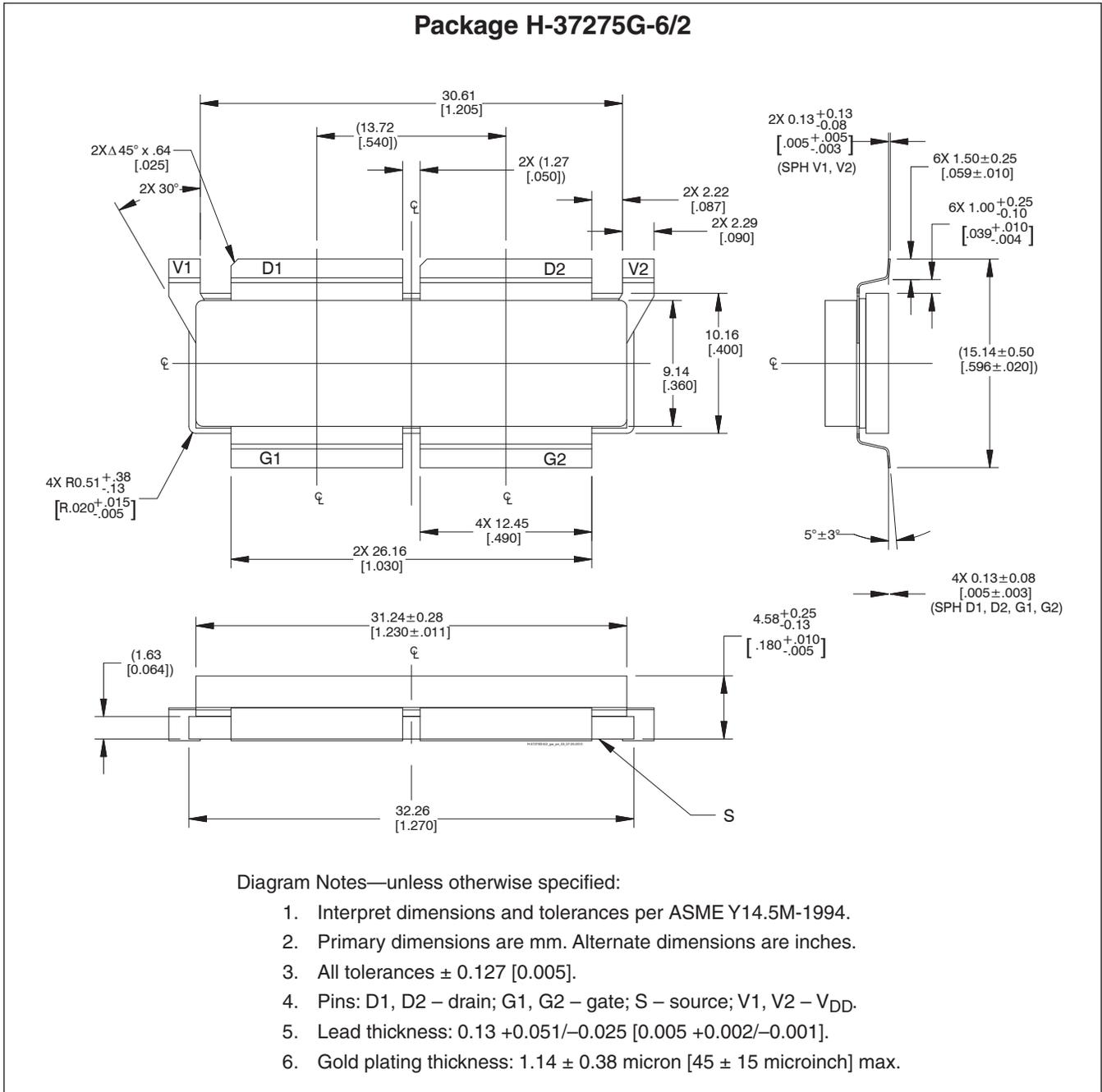
Component Information (cont.)

Component	Description	Suggested Manufacturer	P/N
Input (cont.)			
R103, R104	Resistor, 10 Ω	Panasonic Electronic Components	ERJ-8GEYJ100V
R107, R109	Resistor, 0.0 Ω	Panasonic Electronic Components	ERJ-8GEY0R00V
R108	Resistor, 0.0 Ω	Panasonic Electronic Components	ERJ-3GEY0R00V
R801	Resistor, 1 Ω	Panasonic Electronic Components	ERJ-8GEYJ1R0V
R802	Resistor, 1k Ω	Panasonic Electronic Components	ERJ-8GEYJ102V
R803	Resistor, 1.3k Ω	Panasonic Electronic Components	ERJ-3GEYJ132V
R804	Resistor, 1.2k Ω	Panasonic Electronic Components	ERJ-3GEYJ122V
S1	Potentiometer, 2k Ω	Bourns Inc.	3224W-1-202E
S2	Transistor	Infineon Technologies	BCP56-10
S3	Voltage regulator	Fairchild Semiconductor	LM7805
Output			
C201, C204	Chip capacitor, 0.2 pF	ATC	ATC100B0R2BW150X
C202, C206, C207, C208, C209, C210	Capacitor, 10 μ F	Taiyo Yuden	UMK325C7106MM-T
C203, C212	Chip capacitor, 18 pF	ATC	ATC800A180JW250X
C205, C211	Capacitor, 220 μ F, 35 V	Panasonic Electronic Components	EEE-FP1V221AP

Pinout Diagram



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: 2013-08-02		Data Sheet
Previous Version: 2013-07-24, Data Sheet; 2012-08-09, Advance Specification		
Page	Subjects (major changes since last revision)	
all	Product released to production, information complete and current.	
1, 2, 6	Typos corrected.	

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