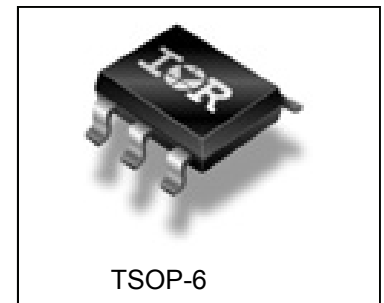
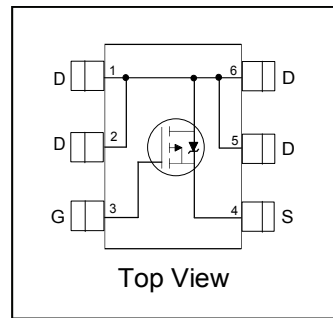


HEXFET® Power MOSFET

V_{DSS}	-20	V
V_{GS}	± 12	V
$R_{DS(on) \max}$ (@ $V_{GS} = -4.5V$)	32	mΩ
$R_{DS(on) \max}$ (@ $V_{GS} = -2.5V$)	55	mΩ
Q_g (typical)	12	nC
I_D (@ $T_A = 25^\circ C$)	-6.9	A



Applications

- Battery operated DC motor inverter MOSFET
- System/Load Switch

Features

Industry-Standard TSOP-6 Package
RoHS Compliant Containing no Lead, no Bromide and no Halogen
MSL1, Consumer Qualification

results in
 ⇒

Benefits

Multi-Vendor Compatibility
Environmentally Friendlier
Increased Reliability

Base part number	Package Type	Standard Pack		Orderable Part Number
		Form	Quantity	
IRLTS2242TRPbF	TSOP-6	Tape and Reel	3000	IRLTS2242TRPbF

Absolute Maximum Ratings


	Parameter	Max.	Units
V_{DS}	Drain-to-Source Voltage	- 20	V
V_{GS}	Gate-to-Source Voltage	± 12	
$I_D @ T_A = 25^\circ C$	Continuous Drain Current, $V_{GS} @ 4.5V$	-6.9	A
$I_D @ T_A = 70^\circ C$	Continuous Drain Current, $V_{GS} @ 4.5V$	-5.5	
I_{DM}	Pulsed Drain Current ①	-55	
$P_D @ T_A = 25^\circ C$	Power Dissipation	2.0	W
$P_D @ T_A = 70^\circ C$	Power Dissipation	1.3	
	Linear Derating Factor	0.02	W/°C
T_J T_{STG}	Operating Junction and Storage Temperature Range	-55 to + 150	°C

Notes ① through ③ are on page 2

Static @ T_J = 25°C (unless otherwise specified)

	Parameter	Min.	Typ.	Max.	Units	Conditions
BV _{DSS}	Drain-to-Source Breakdown Voltage	-20	—	—	V	V _{GS} = 0V, I _D = -250μA
ΔBV _{DSS} /ΔT _J	Breakdown Voltage Temp. Coefficient	—	9.4	—	mV/°C	Reference to 25°C, I _D = -1mA
R _{DS(on)}	Static Drain-to-Source On-Resistance	—	26	32	mΩ	V _{GS} = -4.5V, I _D = -6.9A ②
		—	45	55		V _{GS} = -2.5V, I _D = -5.5A ②
V _{GS(th)}	Gate Threshold Voltage	-0.4	—	-1.1	V	V _{DS} = V _{GS} , I _D = -10μA
ΔV _{GS(th)}	Gate Threshold Voltage Coefficient	—	-3.8	—	mV/°C	
I _{DSS}	Drain-to-Source Leakage Current	—	—	-1.0	μA	V _{DS} = -16V, V _{GS} = 0V
		—	—	-150		V _{DS} = -16V, V _{GS} = 0V, T _J = 125°C
I _{GSS}	Gate-to-Source Forward Leakage	—	—	-100	nA	V _{GS} = -12V
	Gate-to-Source Reverse Leakage	—	—	100		V _{GS} = 12V
g _{fs}	Forward Transconductance	8.5	—	—	S	V _{DS} = -10V, I _D = -5.5A
Q _g	Total Gate Charge	—	12	—	nC	V _{DS} = -10V
Q _{gs}	Pre-V _{th} Gate-to-Source Charge	—	1.5	—		V _{GS} = -4.5V
Q _{gd}	Gate-to-Drain Charge	—	4.3	—		I _D = -5.5A
R _G	Gate Resistance	—	17	—	Ω	
t _{d(on)}	Turn-On Delay Time	—	5.8	—	ns	V _{DD} = -10V, V _{GS} = -4.5V I _D = -5.5A R _G = 6.8Ω
t _r	Rise Time	—	18	—		
t _{d(off)}	Turn-Off Delay Time	—	81	—		
t _f	Fall Time	—	68	—		
C _{iss}	Input Capacitance	—	905	—	pF	V _{GS} = 0V V _{DS} = -10V f = 1.0KHz
C _{oss}	Output Capacitance	—	280	—		
C _{rss}	Reverse Transfer Capacitance	—	200	—		

Diode Characteristics

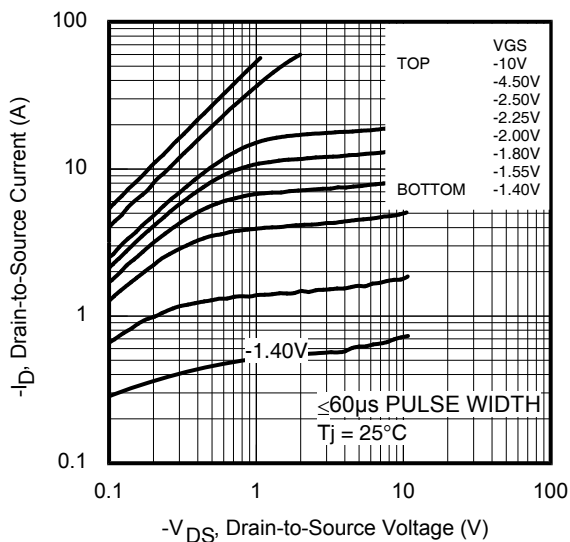
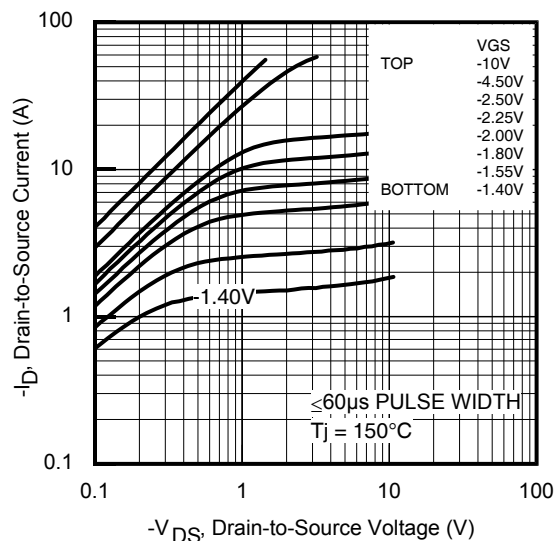
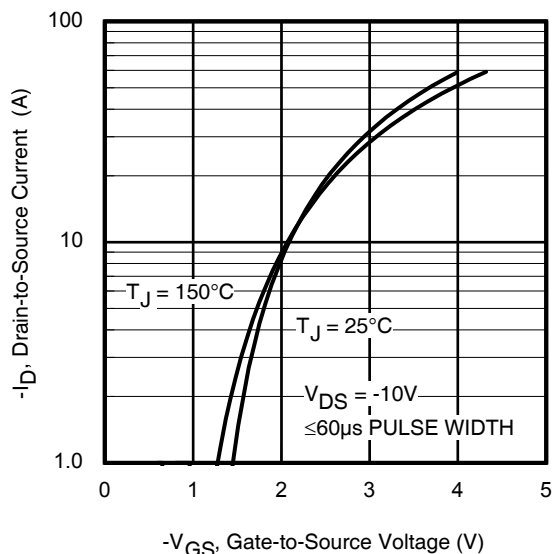
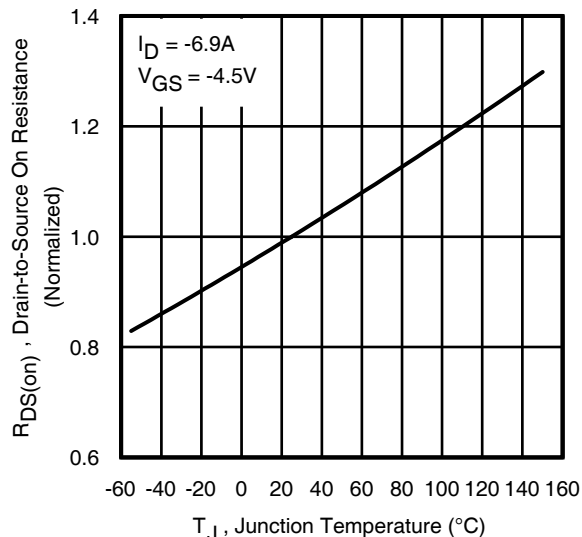
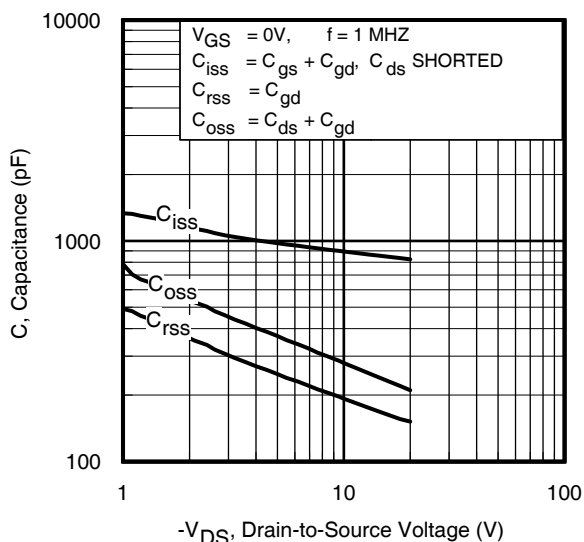
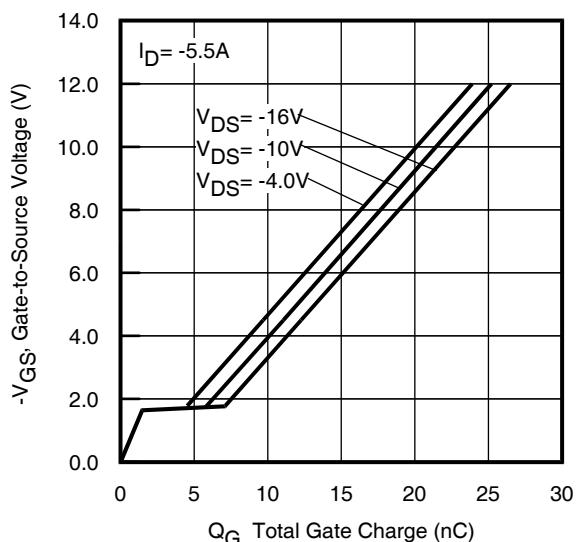
	Parameter	Min.	Typ.	Max.	Units	Conditions
I _S	Continuous Source Current (Body Diode)	—	—	-2.0	A	MOSFET symbol showing the integral reverse p-n junction diode. 
I _{SM}	Pulsed Source Current (Body Diode) ①	—	—	-55		
V _{SD}	Diode Forward Voltage	—	—	-1.2	V	T _J = 25°C, I _S = -5.5A, V _{GS} = 0V ②
t _{rr}	Reverse Recovery Time	—	41	62	ns	T _J = 25°C, I _F = -5.5A, V _{DD} = -16V di/dt = 100A/μs ②
Q _{rr}	Reverse Recovery Charge	—	16	24	nC	

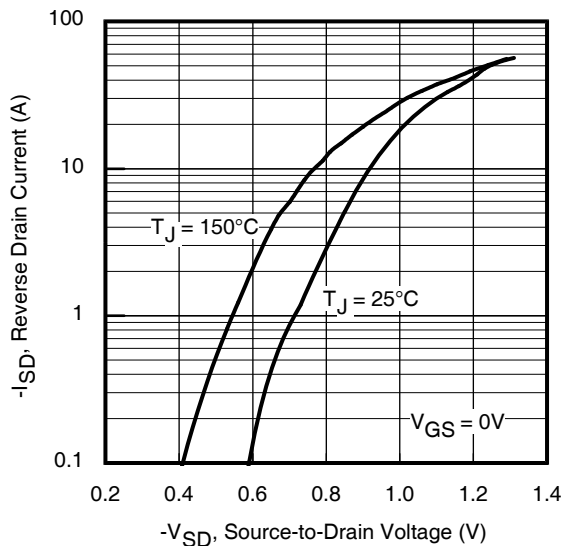
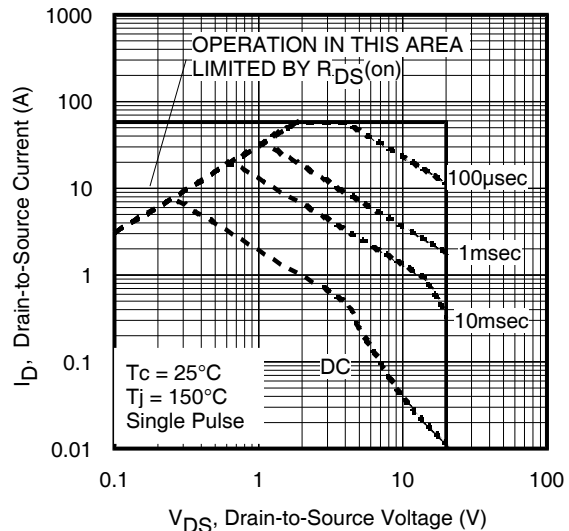
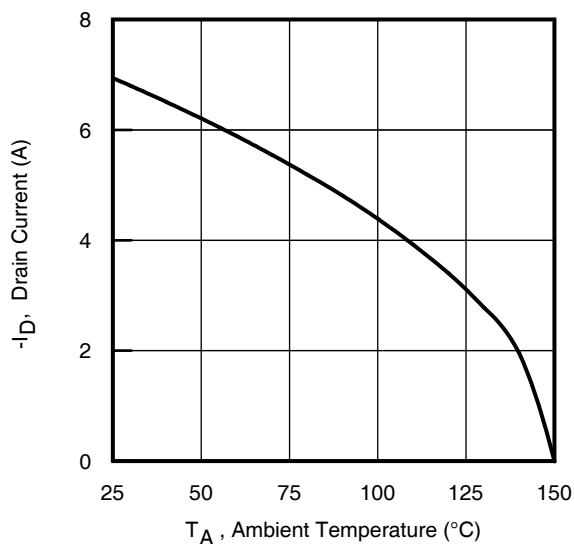
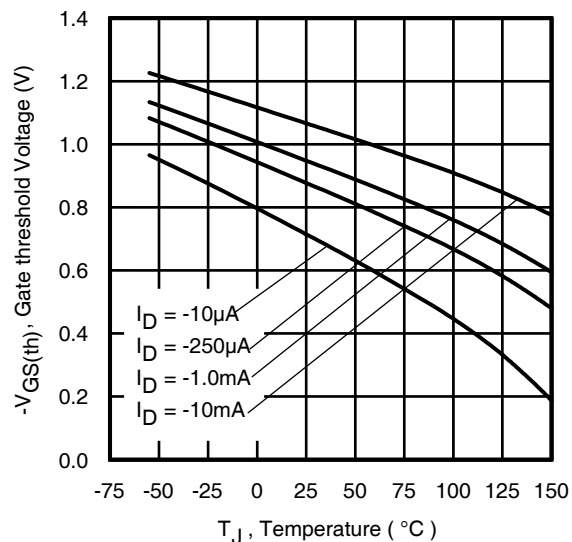
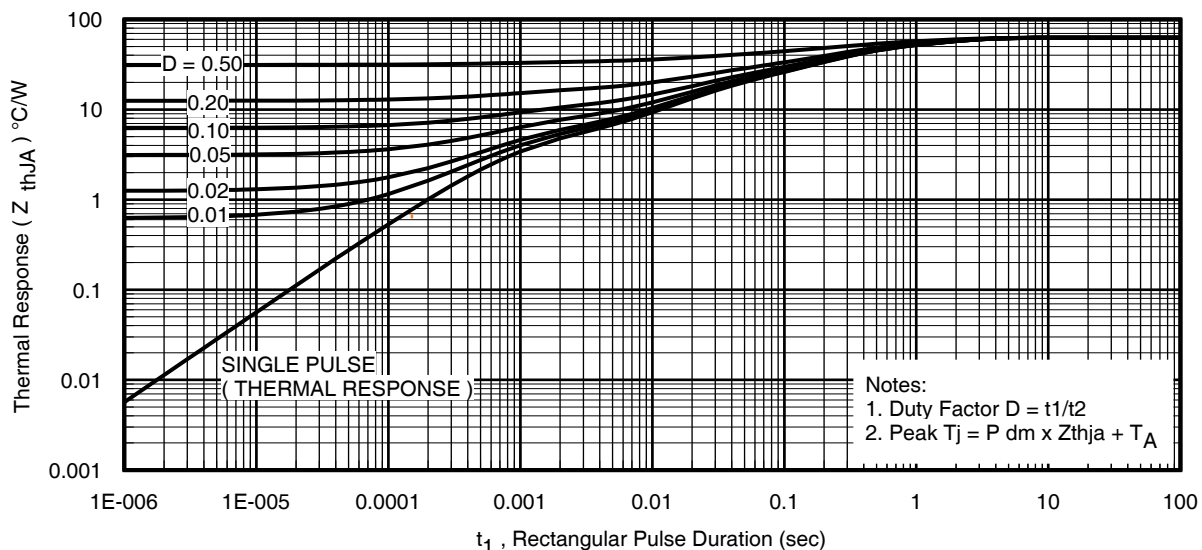
Thermal Resistance

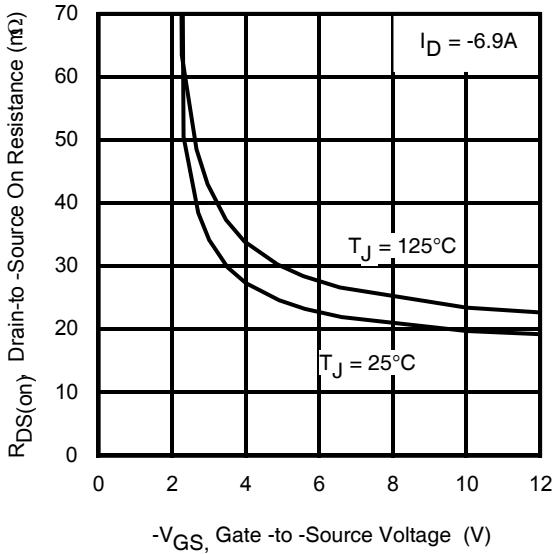
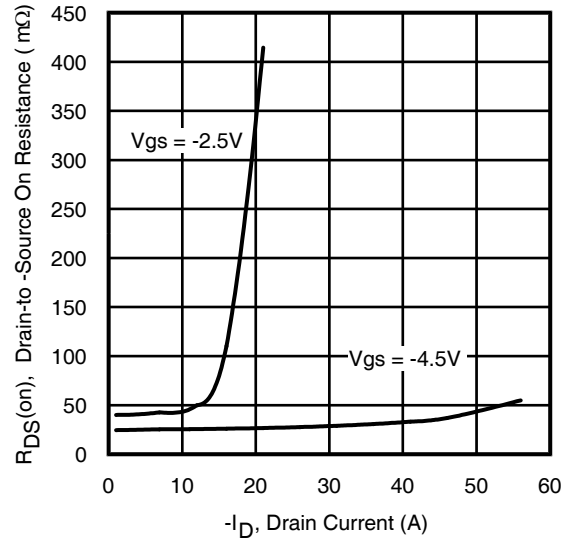
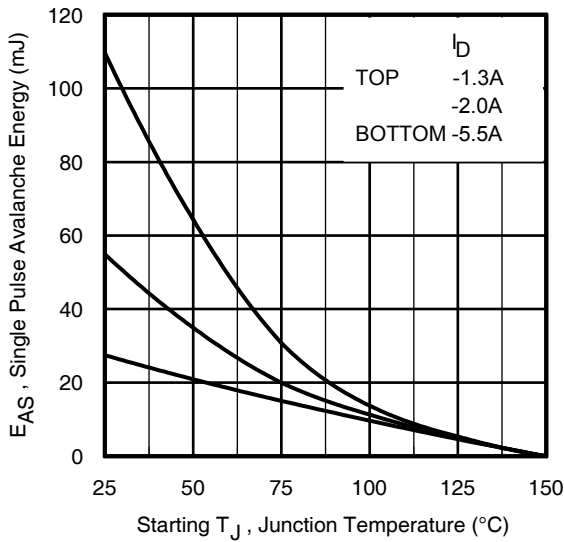
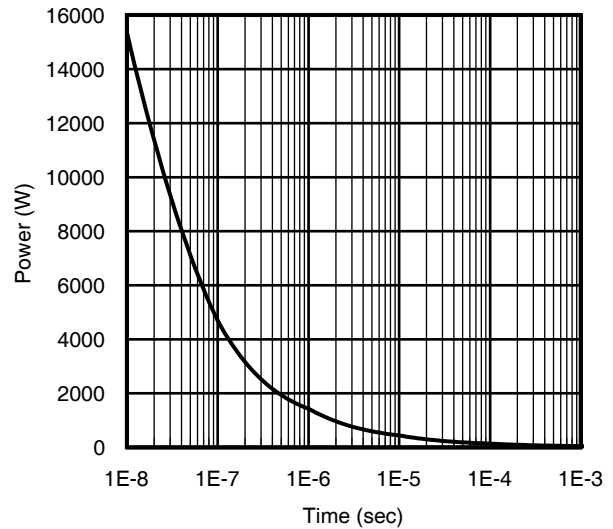
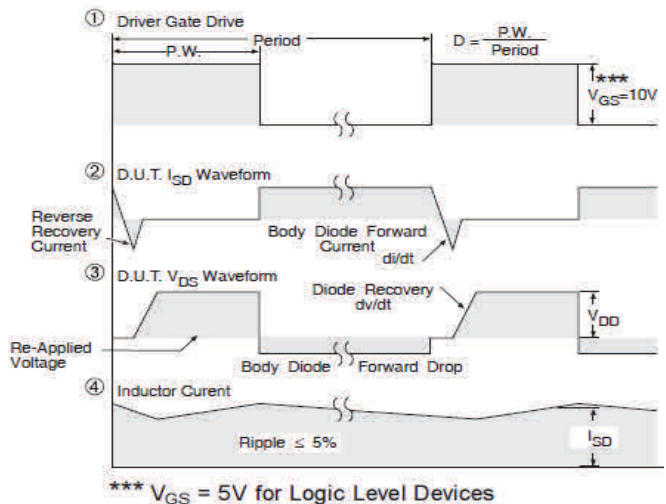
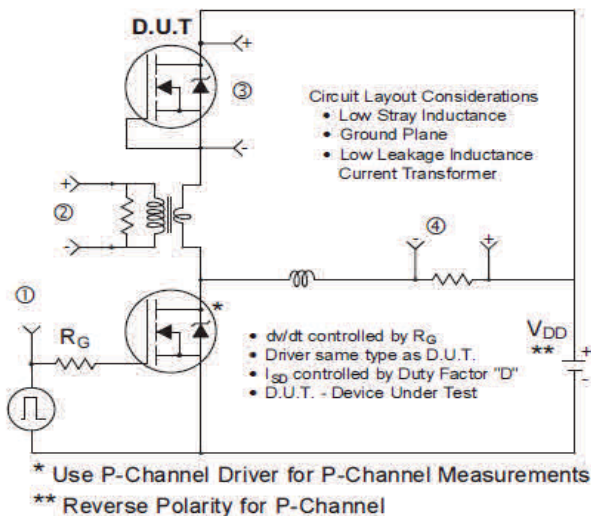
	Parameter	Typ.	Max.	Units
R _{θJA}	Junction-to-Ambient ③	—	62.5	°C/W

Notes:

- ① Repetitive rating; pulse width limited by max. junction temperature.
- ② Pulse width ≤ 400μs; duty cycle ≤ 2%.
- ③ When mounted on 1 inch square PCB (FR-4). Please refer to AN-994 for more details: <http://www.irf.com/technical-info/appnotes/an-994.pdf>


Fig 1. Typical Output Characteristics

Fig 2. Typical Output Characteristics

Fig 3. Typical Transfer Characteristics

Fig 4. Normalized On-Resistance vs. Temperature

Fig 5. Typical Capacitance vs. Drain-to-Source Voltage

Fig 6. Typical Gate Charge vs. Gate-to-Source Voltage


Fig 7. Typical Source-Drain Diode Forward Voltage

Fig 8. Maximum Safe Operating Area

Fig 9. Maximum Drain Current vs. Case Temperature

Fig 10. Threshold Voltage vs. Temperature

Fig 11. Maximum Effective Transient Thermal Impedance, Junction-to-Case


Fig 12. On-Resistance vs. Gate Voltage

Fig 13. Typical On-Resistance vs. Drain Current

Fig 14. Maximum Avalanche Energy vs. Drain Current

Fig 15. Typical Power vs. Time

Fig 16. Diode Reverse Recovery Test Circuit for P-Channel HEXFET® Power MOSFETs

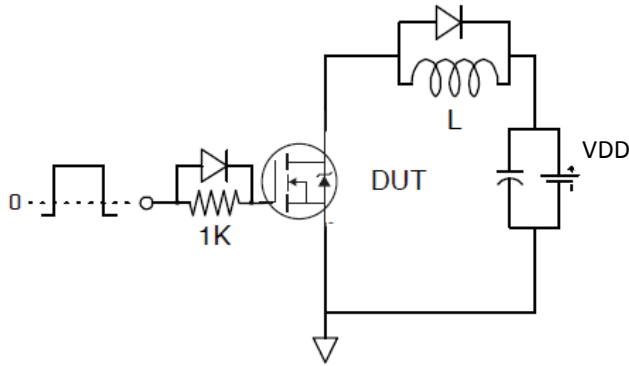


Fig 17a. Gate Charge Test Circuit

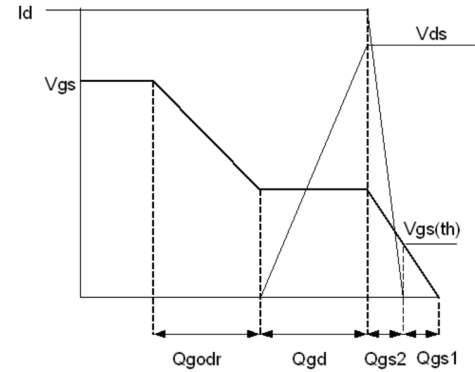


Fig 17b. Gate Charge Waveform

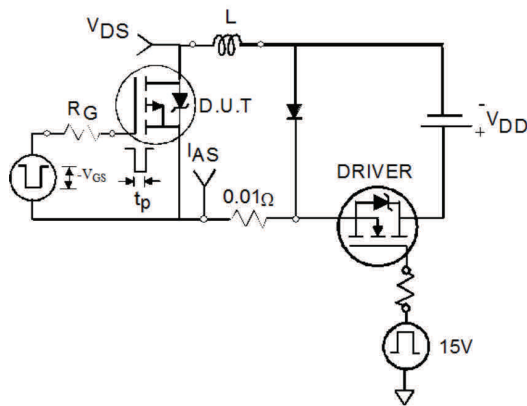


Fig 18a. Unclamped Inductive Test Circuit

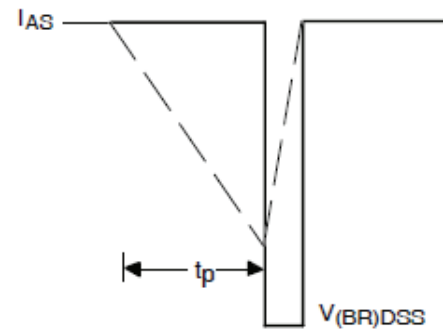


Fig 18b. Unclamped Inductive Waveforms

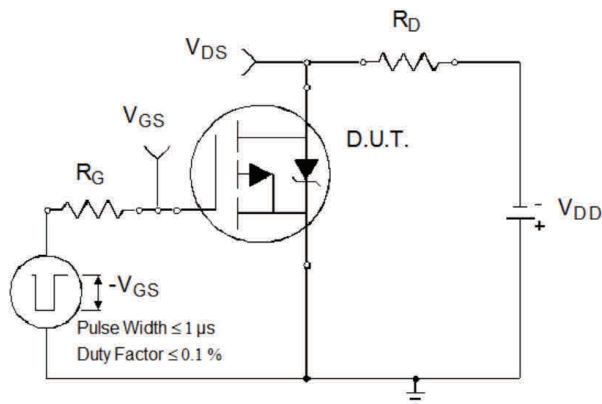


Fig 19a. Switching Time Test Circuit

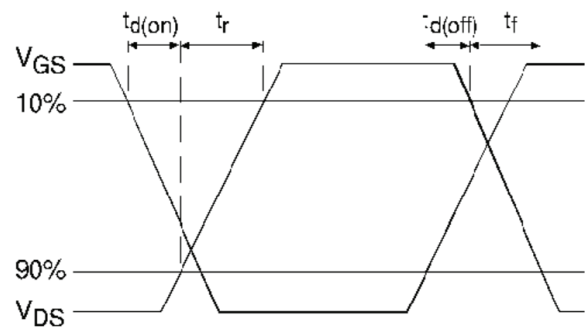
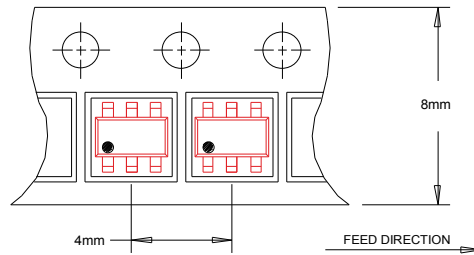
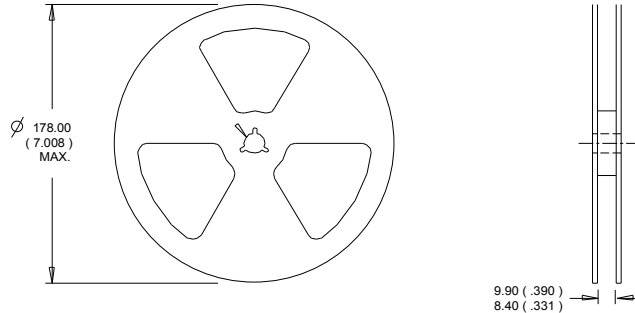


Fig 19b. Switching Time Waveforms

TSOP-6 Tape and Reel Information


NOTES:
1. OUTLINE CONFORMS TO EIA-481 & EIA-541.



NOTES:
1. CONTROLLING DIMENSION : MILLIMETER.
2. OUTLINE CONFORMS TO EIA-481 & EIA-541.

Note: For the most current drawing please refer to IR website at <http://www.irf.com/package/>

Qualification Information[†]

Qualification Level	Consumer ^{††} (per JEDEC JESD47F ^{†††} guidelines)	
Moisture Sensitivity Level	TSOP-6	MSL1 (per IPC/JEDEC J-STD-020D ^{††})
RoHS Compliant	Yes	

† Qualification standards can be found at International Rectifier’s web site: <http://www.irf.com/product-info/reliability/>

†† Higher qualification ratings may be available should the user have such requirements.

Please contact your International Rectifier sales representative for further information:

<http://www.irf.com/whoto-call/salesrep/>

††† Applicable version of JEDEC standard at the time of product release.

Revision History

Date	Comment
11/18/2014	<ul style="list-style-type: none"> Updated data sheet with IR corporate template. Updated figure 12 on page 5 for V_{GS} from “20V” to “12V” due to error.

单击下面可查看定价，库存，交付和生命周期等信息

[>>Infineon Technologies\(英飞凌\)](#)