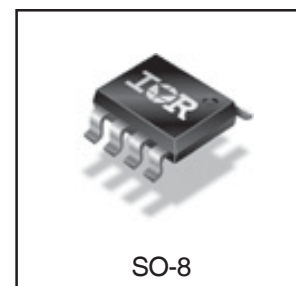
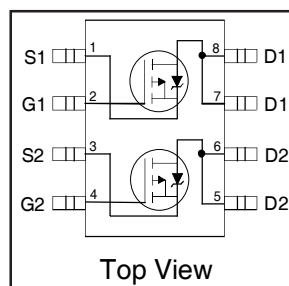


HEXFET® Power MOSFET

V_{DS}	-30	V
R_{DS(on)} max (@ V _{GS} = -10V)	21.0	mΩ
R_{DS(on)} max (@ V _{GS} = -4.5V)	32.0	mΩ
Q_g (typical)	13	nC
I_D (@ T _A = 25°C)	-8.0	A



Features

Industry-standard pinout SO-8 Package
Compatible with Existing Surface Mount Techniques
RoHS Compliant, Halogen-Free
MSL1, Industrial qualification

⇒

Benefits

Multi-Vendor Compatibility
Easier Manufacturing
Environmentally Friendlier
Increased Reliability

Base Part Number	Package Type	Standard Pack		Orderable Part Number
		Form	Quantity	
IRF9362PbF-1	SO-8	Tube/Bulk	95	IRF9362PbF-1
		Tape and Reel	4000	IRF9362TRPbF-1

Absolute Maximum Ratings

	Parameter	Max.	Units
V _{DS}	Drain-to-Source Voltage	-30	V
V _{GS}	Gate-to-Source Voltage	±20	
I _D @ T _A = 25°C	Continuous Drain Current, V _{GS} @ -10V	-8.0	A
I _D @ T _A = 70°C	Continuous Drain Current, V _{GS} @ -10V	-6.4	
I _{DM}	Pulsed Drain Current ①	-64	
P _D @ T _A = 25°C	Power Dissipation ④	2.0	W
P _D @ T _A = 70°C	Power Dissipation ④	1.3	
	Linear Derating Factor	0.016	W/°C
T _J	Operating Junction and	-55 to + 150	°C
T _{STG}	Storage Temperature Range		

Notes ① through ⑥ are on page 2

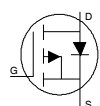
Static @ $T_J = 25^\circ\text{C}$ (unless otherwise specified)

	Parameter	Min.	Typ.	Max.	Units	Conditions
BV_{DSS}	Drain-to-Source Breakdown Voltage	-30	—	—	V	$V_{GS} = 0V, I_D = -250\mu A$
$\Delta BV_{DSS}/\Delta T_J$	Breakdown Voltage Temp. Coefficient	—	0.021	—	V/ $^\circ\text{C}$	Reference to 25°C , $I_D = -1\text{mA}$
$R_{DS(on)}$	Static Drain-to-Source On-Resistance	—	17.0	21.0	$m\Omega$	$V_{GS} = -10V, I_D = -8.0A$ ③
		—	25.7	32.0		$V_{GS} = -4.5V, I_D = -6.4A$ ③
$V_{GS(th)}$	Gate Threshold Voltage	-1.3	-1.8	-2.4	V	$V_{DS} = V_{GS}, I_D = -25\mu A$
$\Delta V_{GS(th)}$	Gate Threshold Voltage Coefficient	—	-5.8	—	mV/ $^\circ\text{C}$	
I_{DSS}	Drain-to-Source Leakage Current	—	—	-1.0	μA	$V_{DS} = -24V, V_{GS} = 0V$
		—	—	-150		$V_{DS} = -24V, V_{GS} = 0V, T_J = 125^\circ\text{C}$
I_{GSS}	Gate-to-Source Forward Leakage	—	—	-100	nA	$V_{GS} = -20V$
	Gate-to-Source Reverse Leakage	—	—	100		$V_{GS} = 20V$
g_{fs}	Forward Transconductance	12	—	—	S	$V_{DS} = -10V, I_D = -6.4A$
Q_g	Total Gate Charge ⑥	—	13	—	nC	$V_{DS} = -15V, V_{GS} = -4.5V, I_D = -6.4A$
Q_{gs}	Gate-to-Source Charge ⑥	—	3.8	—	nC	$V_{GS} = -10V$
Q_{gd}	Gate-to-Drain Charge ⑥	—	6.3	—		$V_{DS} = -15V$ $I_D = -6.4A$
R_G	Gate Resistance ⑥	—	17	—	Ω	
$t_{d(on)}$	Turn-On Delay Time	—	5.2	—	ns	$V_{DD} = -30V, V_{GS} = -10V$ ③ $I_D = -1.0A$ $R_G = 6.0\Omega$ See Figs. 19a & 19b
t_r	Rise Time	—	5.9	—		
$t_{d(off)}$	Turn-Off Delay Time	—	115	—		
t_f	Fall Time	—	53	—		
C_{iss}	Input Capacitance	—	1300	—	pF	$V_{GS} = 0V$
C_{oss}	Output Capacitance	—	250	—		$V_{DS} = -25V$
C_{rss}	Reverse Transfer Capacitance	—	170	—		$f = 1.0\text{kHz}$

Avalanche Characteristics

	Parameter	Typ.	Max.	Units
E_{AS}	Single Pulse Avalanche Energy ②	—	94	mJ
I_{AR}	Avalanche Current ①	—	-6.4	A

Diode Characteristics

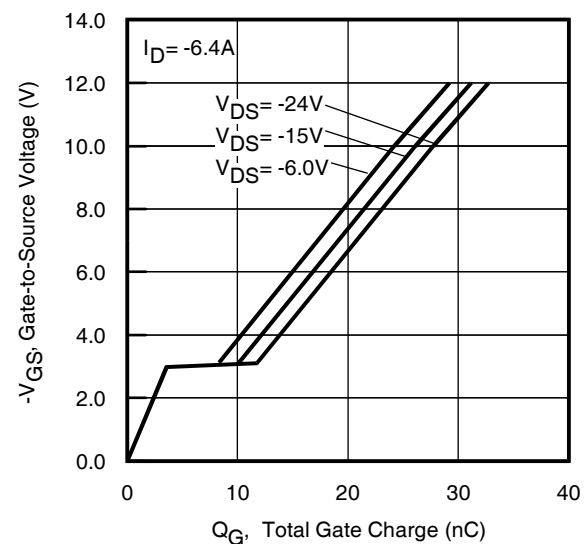
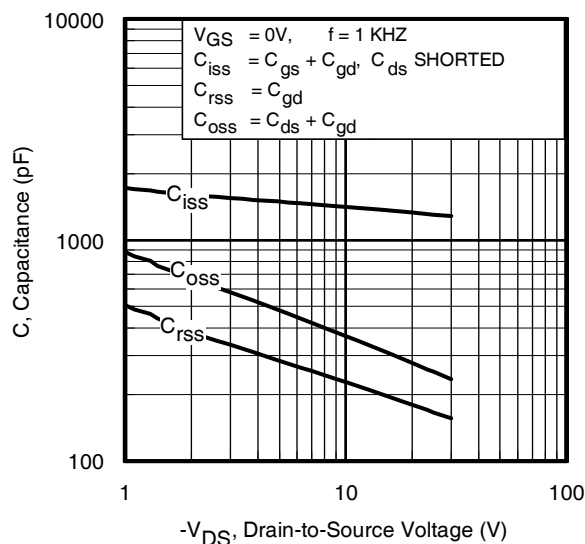
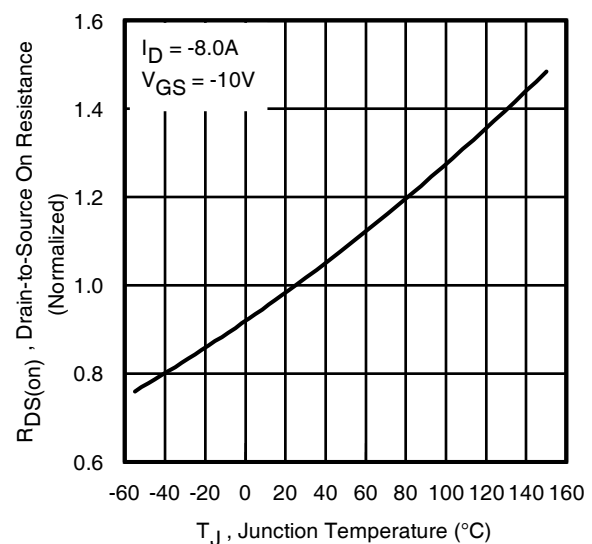
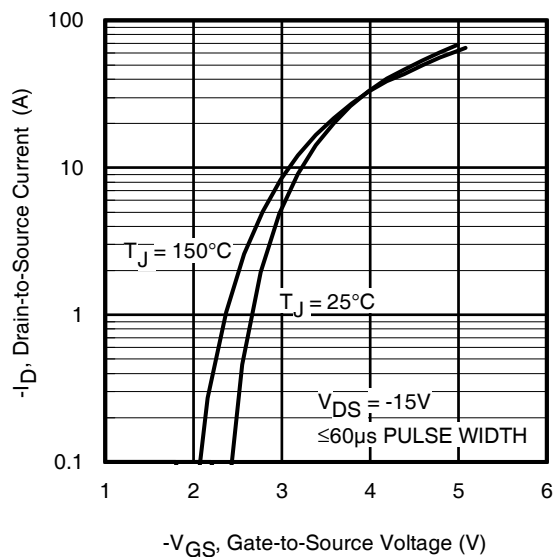
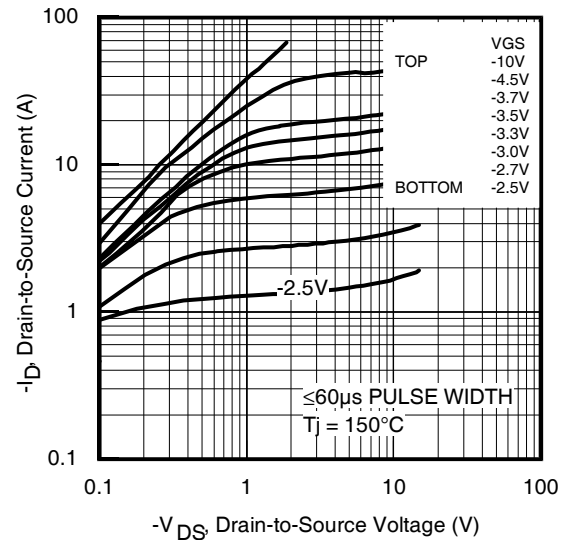
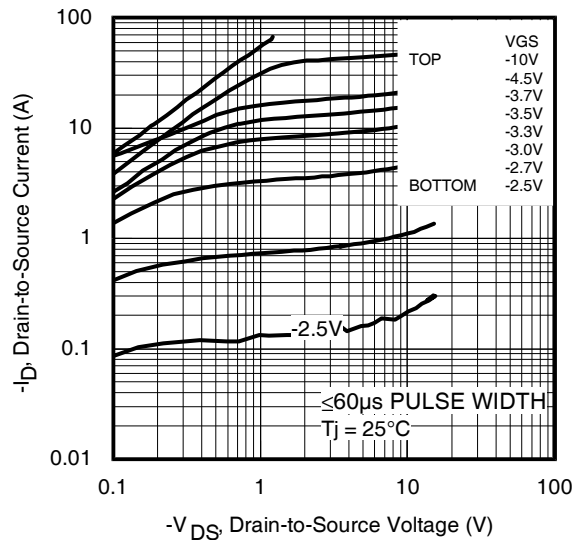
	Parameter	Min.	Typ.	Max.	Units	Conditions
I_S	Continuous Source Current (Body Diode)	—	—	-2.0	A	MOSFET symbol showing the integral reverse p-n junction diode. 
I_{SM}	Pulsed Source Current (Body Diode) ①	—	—	-64		
V_{SD}	Diode Forward Voltage	—	—	-1.2	V	$T_J = 25^\circ\text{C}, I_S = -2.0A, V_{GS} = 0V$ ③
t_{rr}	Reverse Recovery Time	—	32	48	ns	$T_J = 25^\circ\text{C}, I_F = -2.0A, V_{DD} = -24V$
Q_{rr}	Reverse Recovery Charge	—	20	30	nC	$di/dt = 100/\mu s$ ③

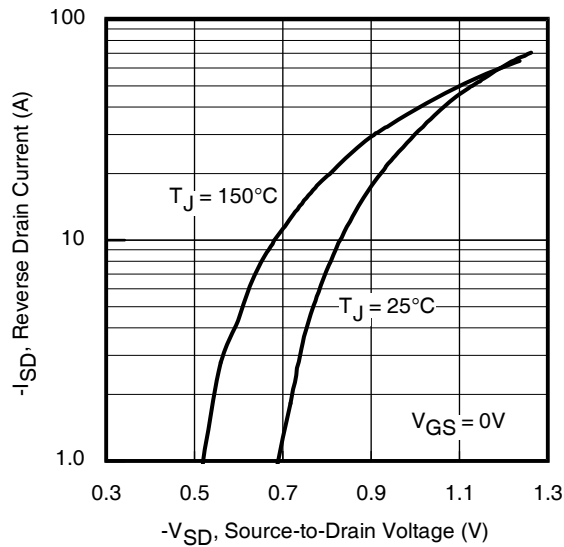
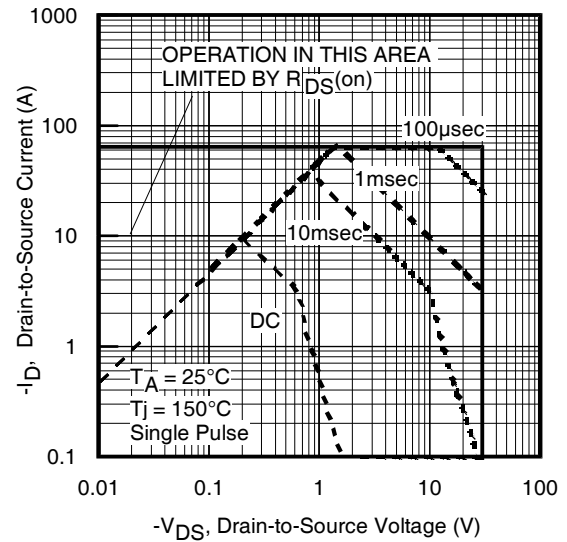
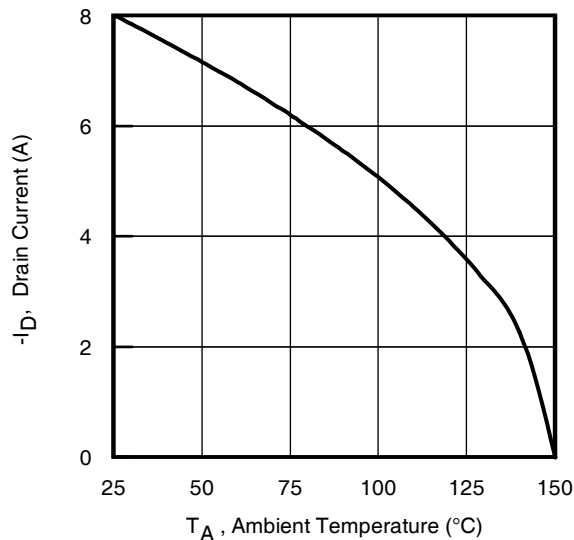
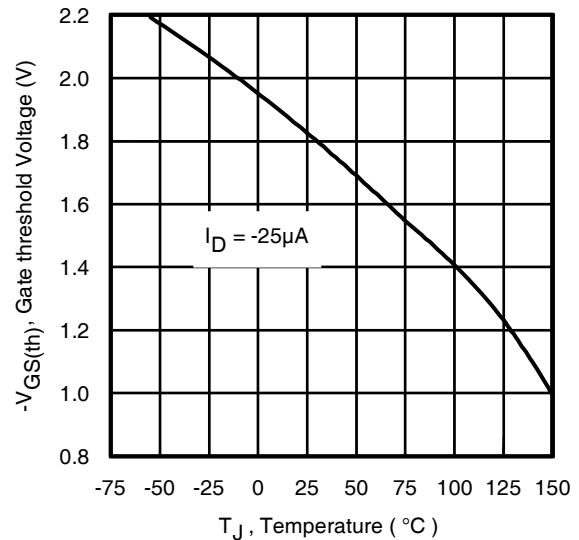
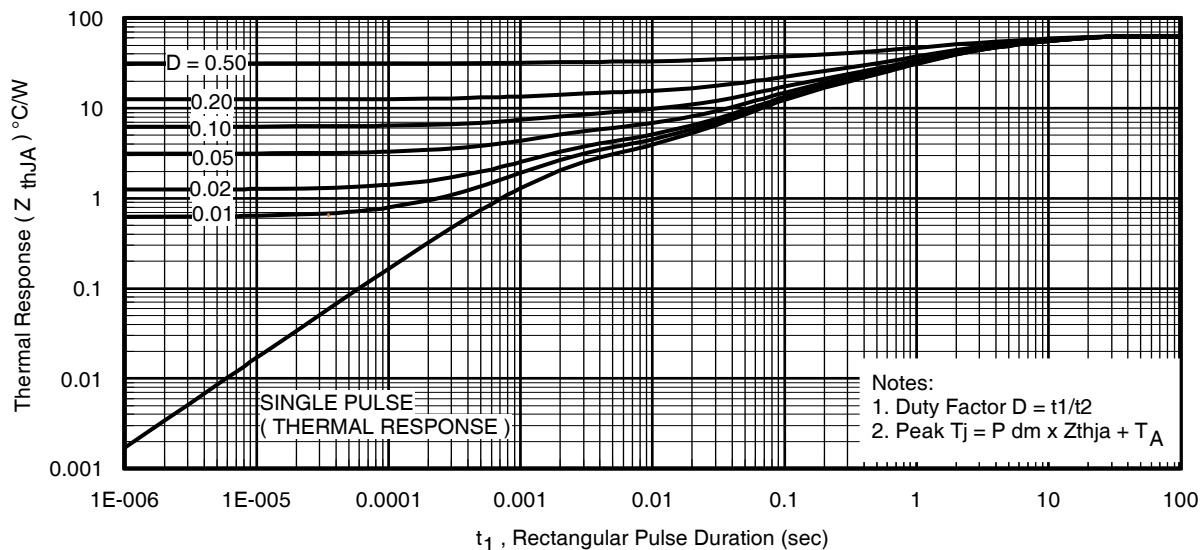
Thermal Resistance

	Parameter	Typ.	Max.	Units
$R_{\theta JL}$	Junction-to-Drain Lead ⑤	—	20	$^\circ\text{C/W}$
$R_{\theta JA}$	Junction-to-Ambient ④	—	62.5	

Notes:

- ① Repetitive rating; pulse width limited by max. junction temperature.
- ② Starting $T_J = 25^\circ\text{C}$, $L = 4.6\text{mH}$, $R_G = 25\Omega$, $I_{AS} = -6.4A$.
- ③ Pulse width $\leq 400\mu s$; duty cycle $\leq 2\%$.
- ④ When mounted on 1 inch square copper board.
- ⑤ R_θ is measured at T_J of approximately 90°C .
- ⑥ For DESIGN AID ONLY, not subject to production testing.


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. Ambient Temperature

Fig 10. Threshold Voltage vs. Temperature

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

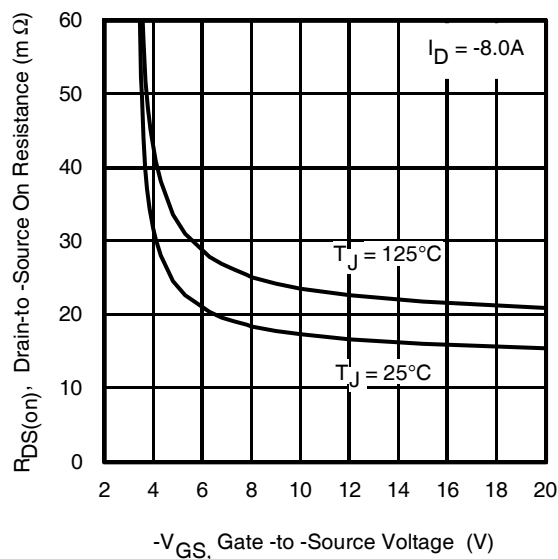


Fig 12. On-Resistance vs. Gate Voltage

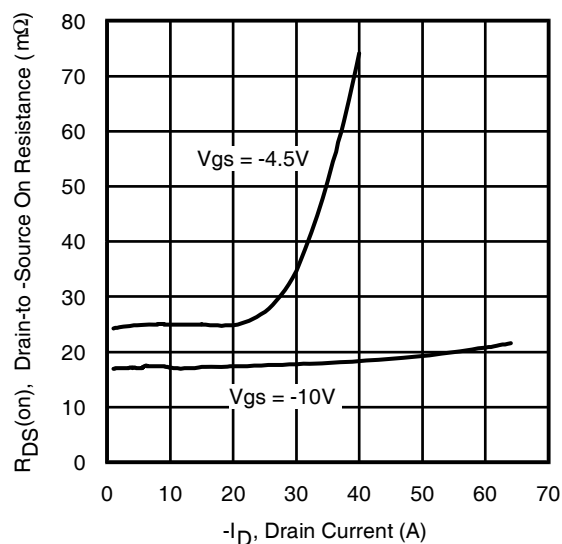


Fig 13. Typical On-Resistance vs. Drain Current

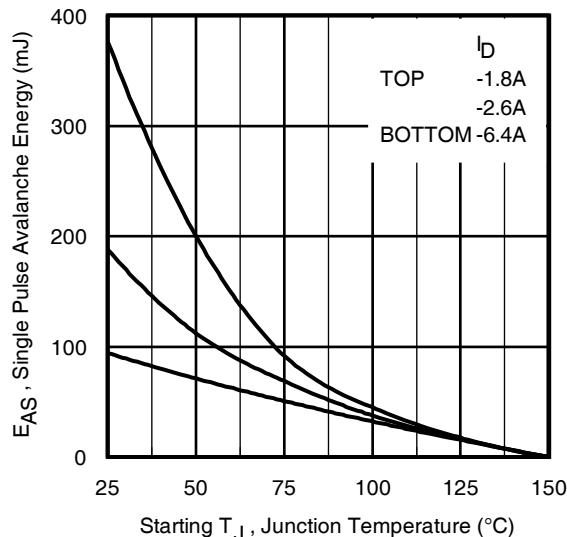


Fig 14. Maximum Avalanche Energy vs. Drain Current

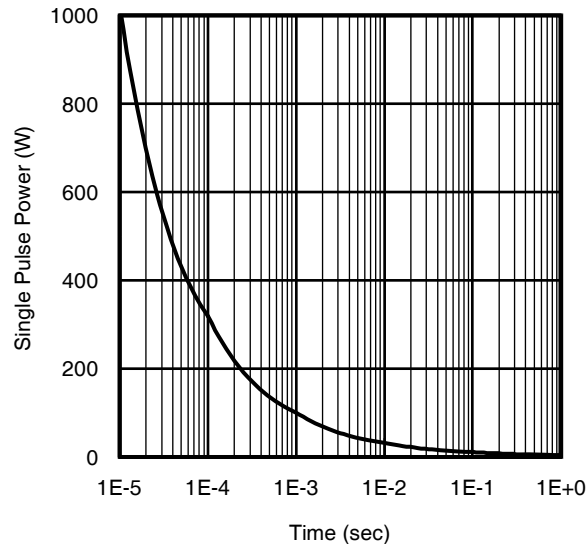
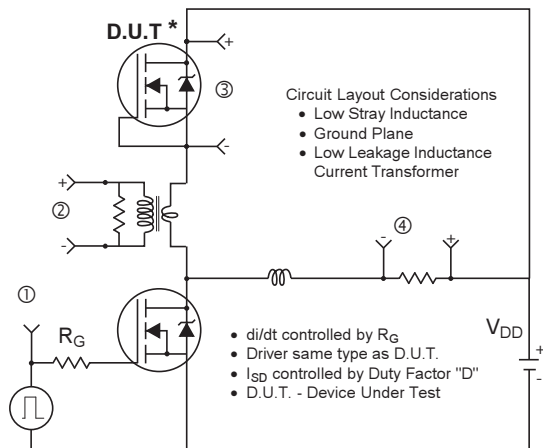
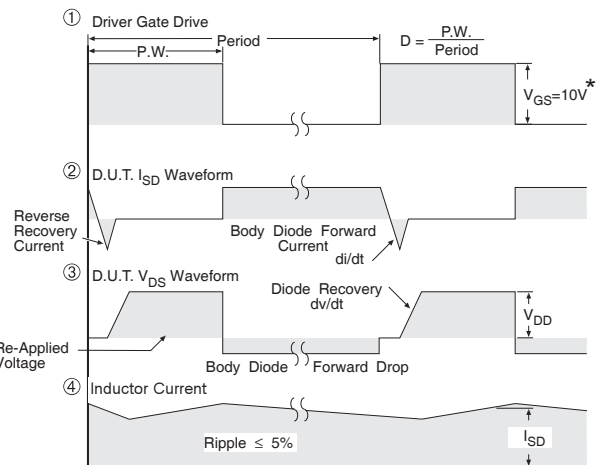


Fig 15. Typical Power vs. Time

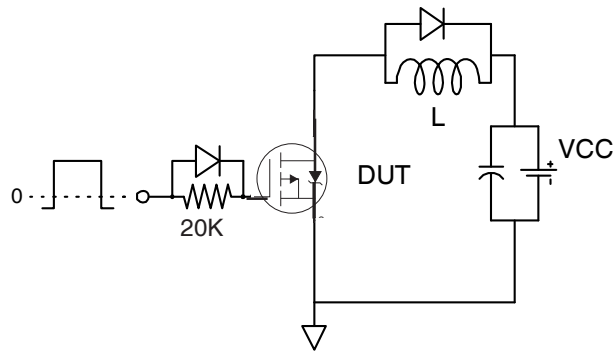
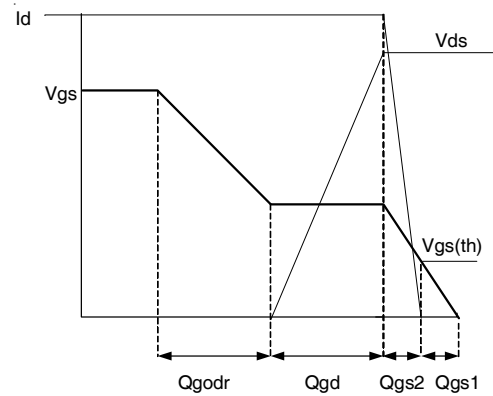
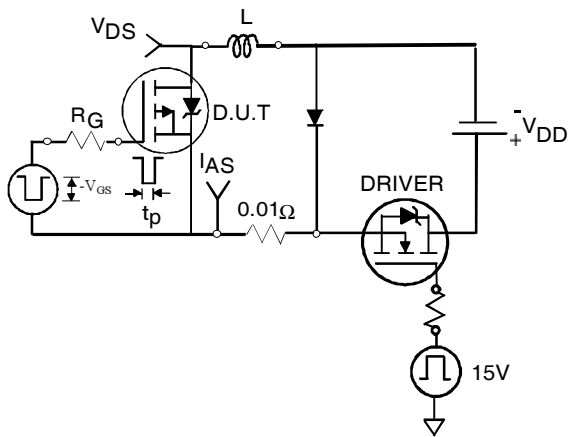
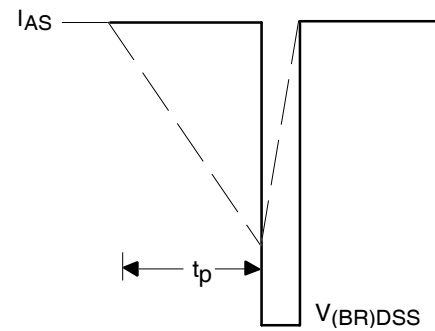
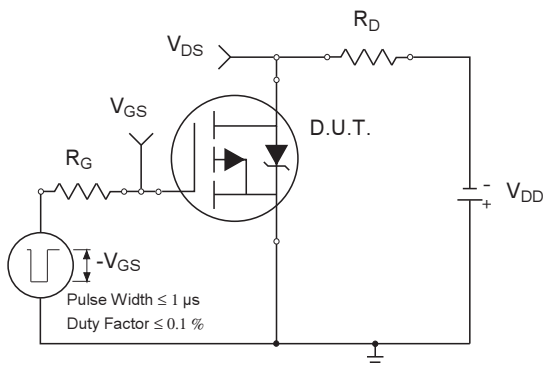
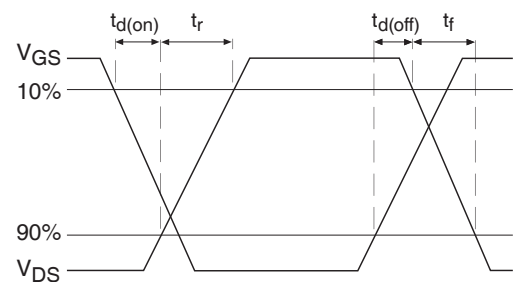


* Reverse Polarity of D.U.T for P-Channel



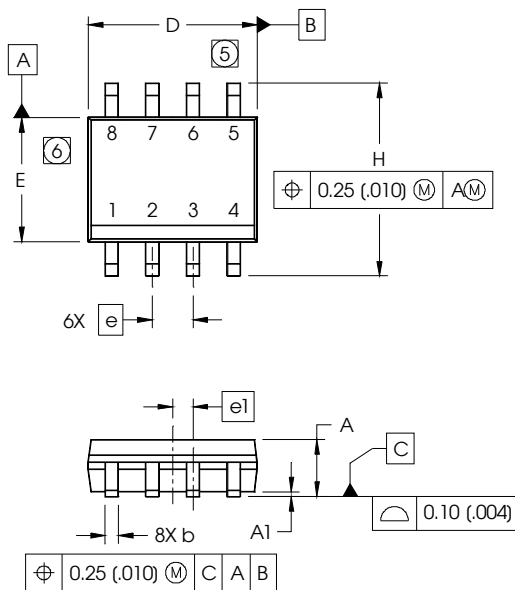
* $V_{GS} = 5V$ for Logic Level Devices

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

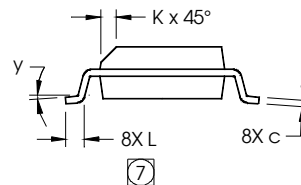

Fig 17a. Gate Charge Test Circuit

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

SO-8 Package Outline (Mosfet & Fetky)

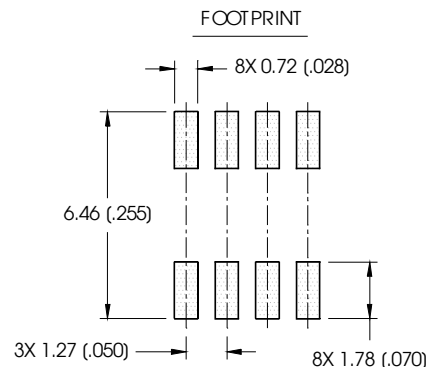
Dimensions are shown in millimeters (inches)



DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	.0532	.0688	1.35	1.75
A1	.0040	.0098	0.10	0.25
b	.013	.020	0.33	0.51
c	.0075	.0098	0.19	0.25
D	.189	.1968	4.80	5.00
E	.1497	.1574	3.80	4.00
e	.050 BASIC		1.27 BASIC	
e1	.025 BASIC		0.635 BASIC	
H	.2284	.2440	5.80	6.20
K	.0099	.0196	0.25	0.50
L	.016	.050	0.40	1.27
y	0°	8°	0°	8°

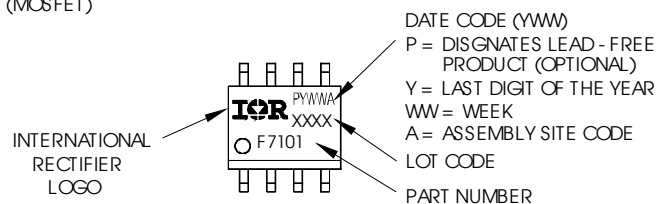


- NOTES:
1. DIMENSIONING & TOLERANCING PER ASME Y14.5M-1994.
 2. CONTROLLING DIMENSION: MILLIMETER
 3. DIMENSIONS ARE SHOWN IN MILLIMETERS (INCHES).
 4. OUTLINE CONFORMS TO JEDEC OUTLINE MS-012AA.
 5. DIMENSION DOES NOT INCLUDE MOLD PROTRUSIONS. MOLD PROTRUSIONS NOT TO EXCEED 0.15 (.006).
 6. DIMENSION DOES NOT INCLUDE MOLD PROTRUSIONS. MOLD PROTRUSIONS NOT TO EXCEED 0.25 (.010).
 7. DIMENSION IS THE LENGTH OF LEAD FOR SOLDERING TO A SUBSTRATE.



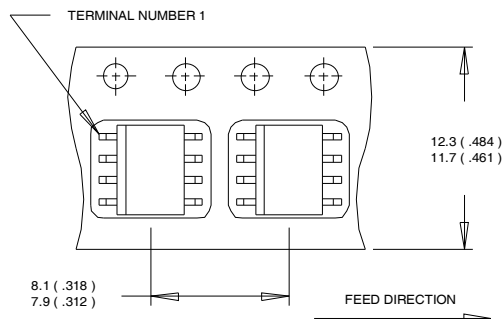
SO-8 Part Marking Information

EXAMPLE: THIS IS AN IRF7101 (MOSFET)

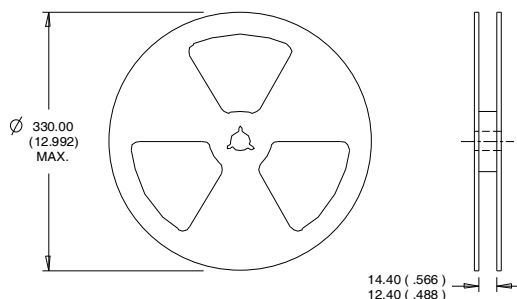


Note: For the most current drawing please refer to IR website at: <http://www.irf.com/package/>

SO-8 Tape and Reel (Dimensions are shown in millimeters (inches))



- NOTES:
1. CONTROLLING DIMENSION : MILLIMETER.
 2. ALL DIMENSIONS ARE SHOWN IN MILLIMETERS(INCHES).
 3. 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	Industrial (per JEDEC JESD47F ^{††} guidelines)	
Moisture Sensitivity Level	SO-8	MSL1 (per 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>

^{††} Applicable version of JEDEC standard at the time of product release

International
IR Rectifier

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To contact International Rectifier, please visit <http://www.irf.com/whoto-call/>