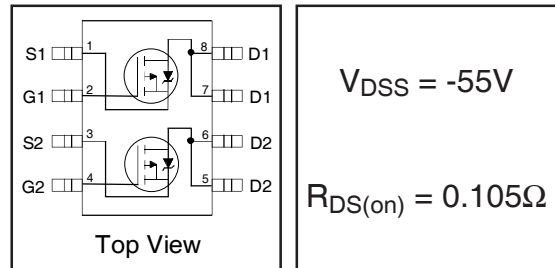


- Advanced Process Technology
- Ultra Low On-Resistance
- Dual P Channel MOSFET
- Surface Mount
- Available in Tape & Reel
- 150°C Operating Temperature
- Lead-Free

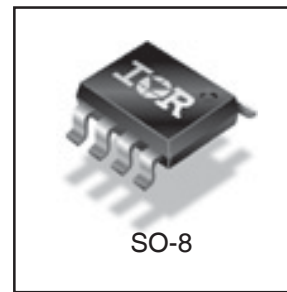
HEXFET® Power MOSFET



Description

These HEXFET® Power MOSFET's in a Dual SO-8 package utilize the latest processing techniques to achieve extremely low on-resistance per silicon area. Additional features of these HEXFET Power MOSFET's are a 150°C junction operating temperature, fast switching speed and improved repetitive avalanche rating. These benefits combine to make this design an extremely efficient and reliable device for use in a wide variety of other applications.

The efficient SO-8 package provides enhanced thermal characteristics and dual MOSFET die capability making it ideal in a variety of power applications. This dual, surface mount SO-8 can dramatically reduce board space and is also available in Tape & Reel.



Base Part Number	Package Type	Standard Pack		Orderable Part Number	EOL Notice
		Form	Quantity		
IRF7342QPbF	SO-8	Tube/Bulk	95	IRF7342QPbF	EOL 529
IRF7342QPbF	SO-8	Tape and Reel	4000	IRF7342QTRPbF	

Absolute Maximum Ratings

	Parameter	Max.	Units
V_{DS}	Drain- Source Voltage	-55	V
$I_D @ T_C = 25^\circ C$	Continuous Drain Current, $V_{GS} @ 10V$	-3.4	A
$I_D @ T_C = 70^\circ C$	Continuous Drain Current, $V_{GS} @ 10V$	-2.7	
I_{DM}	Pulsed Drain Current ①	-27	
$P_D @ T_C = 25^\circ C$	Power Dissipation	2.0	W
$P_D @ T_C = 70^\circ C$	Power Dissipation	1.3	
	Linear Derating Factor	0.016	
V_{GS}	Gate-to-Source Voltage	± 20	V
V_{GSM}	Gate-to-Source Voltage Single Pulse $tp < 10\mu s$	30	V
E_{AS}	Single Pulse Avalanche Energy ②	114	
dv/dt	Peak Diode Recovery dv/dt ③	5.0	V/ns
T_J, T_{STG}	Junction and Storage Temperature Range	-55 to + 150	$^\circ C$

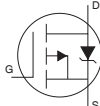
Thermal Resistance

	Parameter	Typ.	Max.	Units
$R_{\theta JA}$	Maximum Junction-to-Ambient ④	—	62.5	$^\circ C/W$

Electrical Characteristics @ T_J = 25°C (unless otherwise specified)

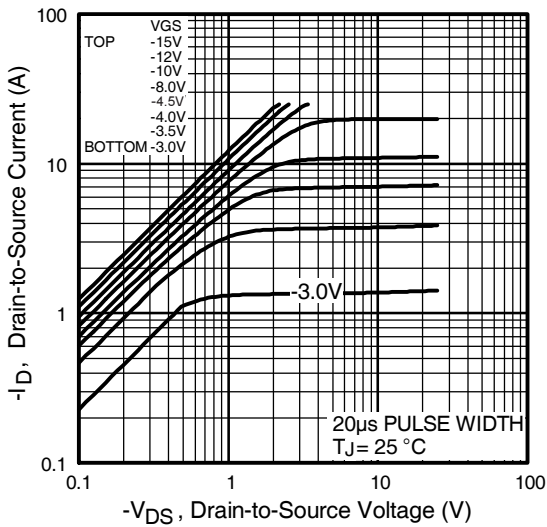
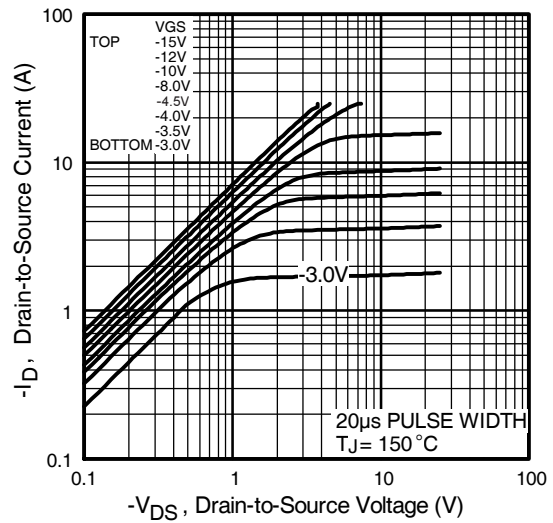
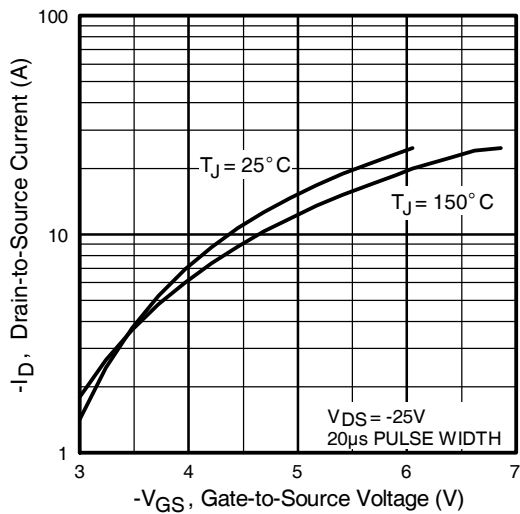
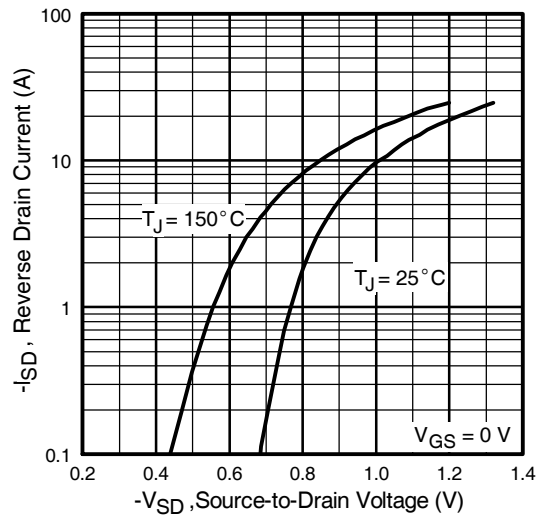
	Parameter	Min.	Typ.	Max.	Units	Conditions
V _{(BR)DSS}	Drain-to-Source Breakdown Voltage	-55	—	—	V	V _{GS} = 0V, I _D = -250μA
ΔV _{(BR)DSS} /ΔT _J	Breakdown Voltage Temp. Coefficient	—	-0.054	—	V/°C	Reference to 25°C, I _D = -1mA
R _{DS(on)}	Static Drain-to-Source On-Resistance	—	0.095	0.105	Ω	V _{GS} = -10V, I _D = -3.4A ④
		—	0.150	0.170		V _{GS} = -4.5V, I _D = -2.7A ④
V _{GS(th)}	Gate Threshold Voltage	-1.0	—	—	V	V _{DS} = V _{GS} , I _D = -250μA
g _{fs}	Forward Transconductance	3.3	—	—	S	V _{DS} = -10V, I _D = -3.1A
I _{DSS}	Drain-to-Source Leakage Current	—	—	-2.0	μA	V _{DS} = -55V, V _{GS} = 0V
		—	—	-25		V _{DS} = -55V, V _{GS} = 0V, T _J = 55°C
I _{GSS}	Gate-to-Source Forward Leakage	—	—	-100	nA	V _{GS} = -20V
	Gate-to-Source Reverse Leakage	—	—	100		V _{GS} = 20V
Q _g	Total Gate Charge	—	26	38	nC	I _D = -3.1A
Q _{gs}	Gate-to-Source Charge	—	3.0	4.5		V _{DS} = -44V
Q _{gd}	Gate-to-Drain ("Miller") Charge	—	8.4	13		V _{GS} = -10V, See Fig. 10 ④
t _{d(on)}	Turn-On Delay Time	—	14	22	ns	V _{DD} = -28V
t _r	Rise Time	—	10	15		I _D = -1.0A
t _{d(off)}	Turn-Off Delay Time	—	43	64		R _G = 6.0Ω
t _f	Fall Time	—	22	32		R _D = 16Ω, ④
C _{iss}	Input Capacitance	—	690	—	pF	V _{GS} = 0V
C _{oss}	Output Capacitance	—	210	—		V _{DS} = -25V
C _{rss}	Reverse Transfer Capacitance	—	86	—		f = 1.0MHz, See Fig. 9

Source-Drain Ratings and 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	—	—	-27		
V _{SD}	Diode Forward Voltage	—	—	-1.2	V	T _J = 25°C, I _S = -2.0A, V _{GS} = 0V ③
t _{rr}	Reverse Recovery Time	—	54	80	ns	T _J = 25°C, I _F = -2.0A
Q _{rr}	Reverse Recovery Charge	—	85	130	nC	di/dt = -100A/μs ③

Notes:

- ① Repetitive rating; pulse width limited by max. junction temperature. (See fig. 11)
- ② Starting T_J = 25°C, L = 20mH
R_G = 25Ω, I_{AS} = -3.4A. (See Figure 8)
- ③ I_{SD} ≤ -3.4A, di/dt ≤ -150A/μs, V_{DD} ≤ V_{(BR)DSS}, T_J ≤ 150°C
- ④ Pulse width ≤ 300μs; duty cycle ≤ 2%.
- ⑤ When mounted on 1 inch square copper board, t < 10 sec


Fig 1. Typical Output Characteristics

Fig 2. Typical Output Characteristics

Fig 3. Typical Transfer Characteristics

Fig 4. Typical Source-Drain Diode Forward Voltage

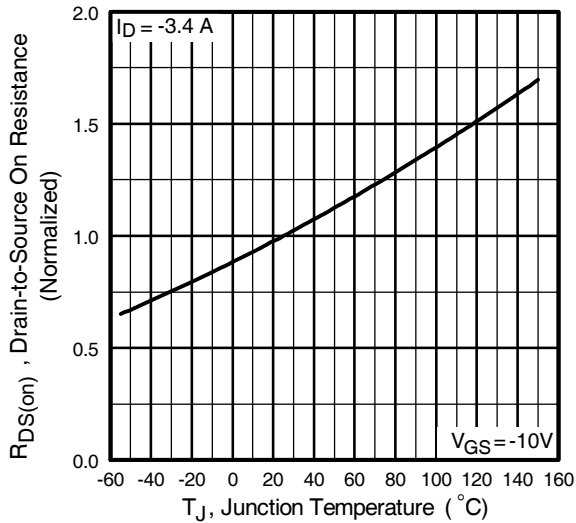


Fig 5. Normalized On-Resistance Vs. Temperature

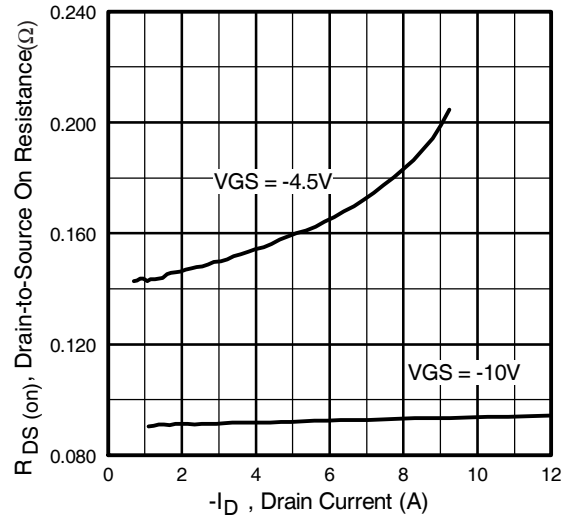


Fig 6. Typical On-Resistance Vs. Drain Current

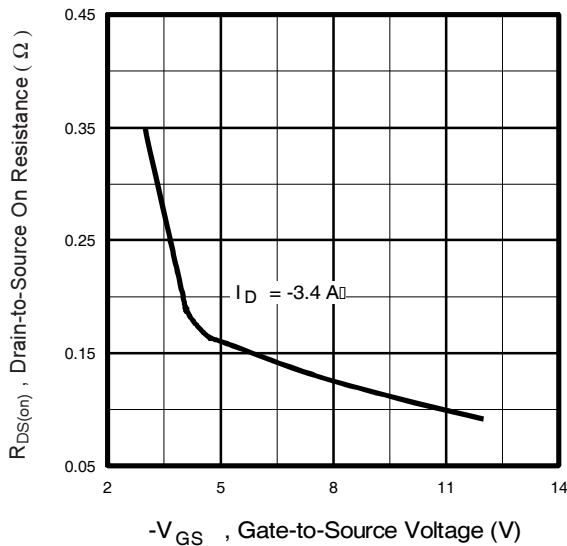


Fig 7. Typical On-Resistance Vs. Gate Voltage

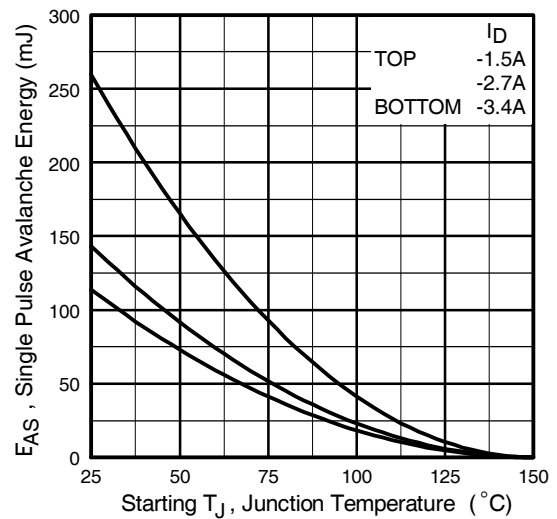


Fig 8. Maximum Avalanche Energy Vs. Drain Current

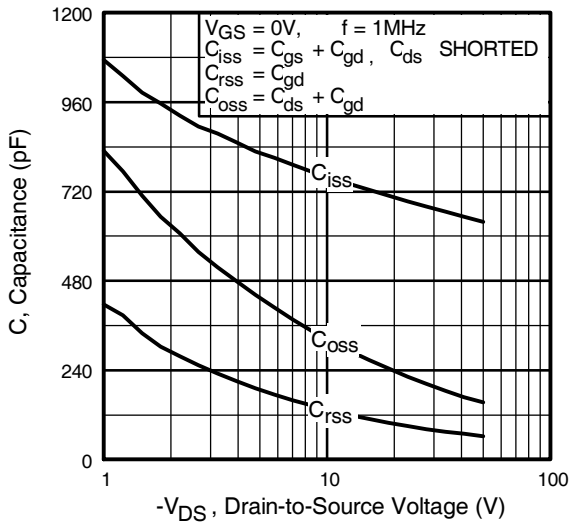


Fig 9. Typical Capacitance Vs. Drain-to-Source Voltage

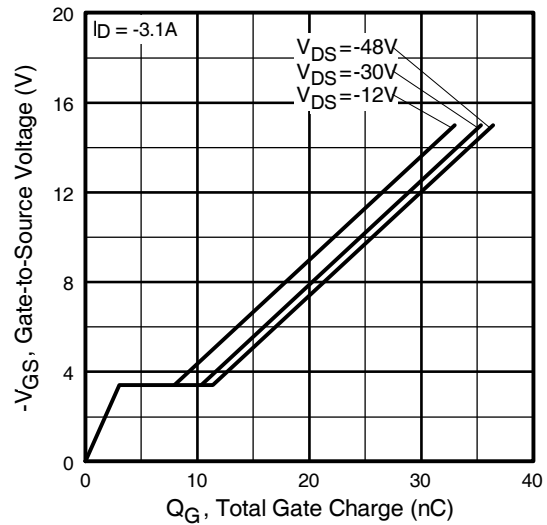


Fig 10. Typical Gate Charge Vs. Gate-to-Source Voltage

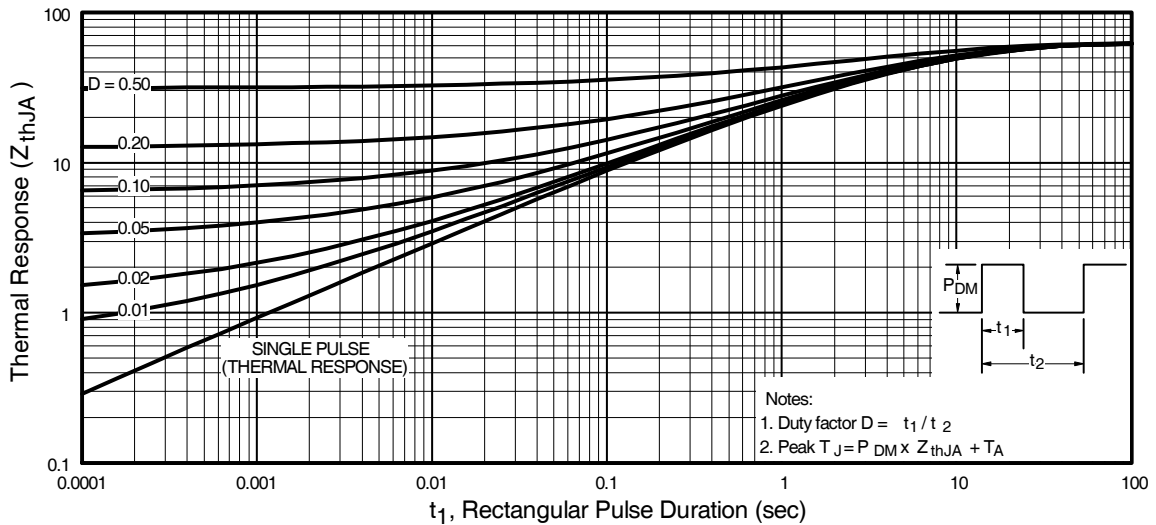
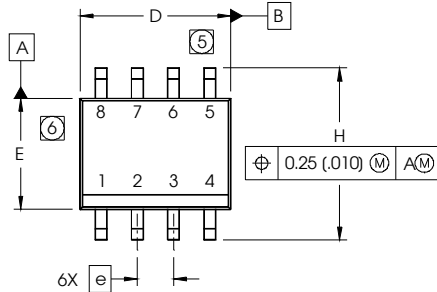


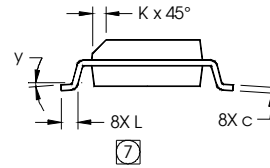
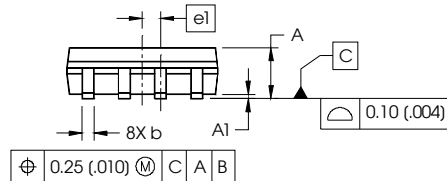
Fig 11. Maximum Effective Transient Thermal Impedance, Junction-to-Ambient

SO-8 Package Outline

Dimensions are shown in millimeters (inches)



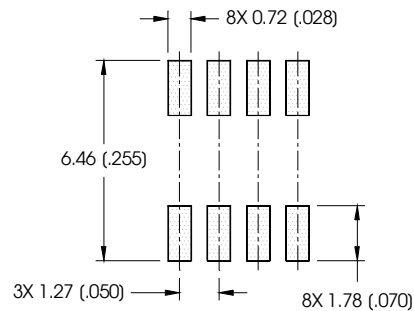
DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	.0532	.0688	1.35	1.75
A1	.0040	.0098	0.10	0.25
b	.013	.020	0.33	0.51
c	.0075	.0098	0.19	0.25
D	.189	.1968	4.80	5.00
E	.1497	.1574	3.80	4.00
e	.050 BASIC		1.27 BASIC	
e1	.025 BASIC		0.635 BASIC	
H	.2284	.2440	5.80	6.20
K	.0099	.0196	0.25	0.50
L	.016	.050	0.40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



NOTES:

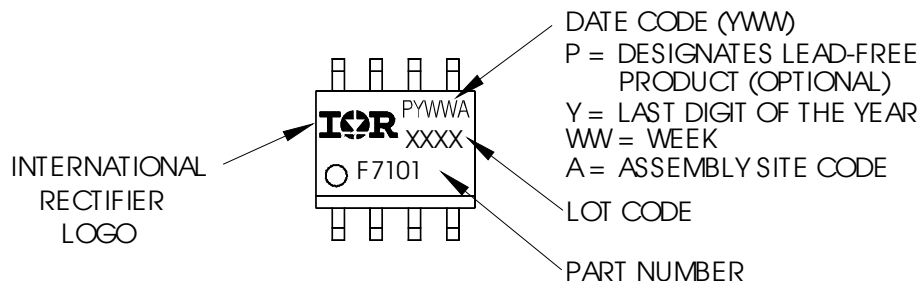
1. DIMENSIONING & TOLERANCING PER ASME Y14.5M-1994.
2. CONTROLLING DIMENSION: MILLIMETER
3. DIMENSIONS ARE SHOWN IN MILLIMETERS (INCHES).
4. OUTLINE CONFORMS TO JEDEC OUTLINE MS-012AA.
- ⑤ DIMENSION DOES NOT INCLUDE MOLD PROTRUSIONS. MOLD PROTRUSIONS NOT TO EXCEED 0.15 (.006).
- ⑥ DIMENSION DOES NOT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

FOOTPRINT



SO-8 Part Marking

EXAMPLE: THIS IS AN IRF7101 (MOSFET)

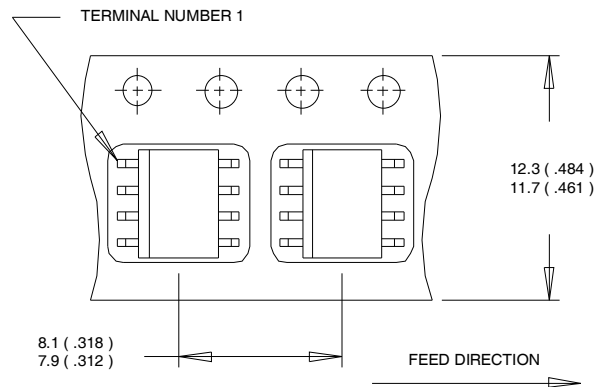


Note:

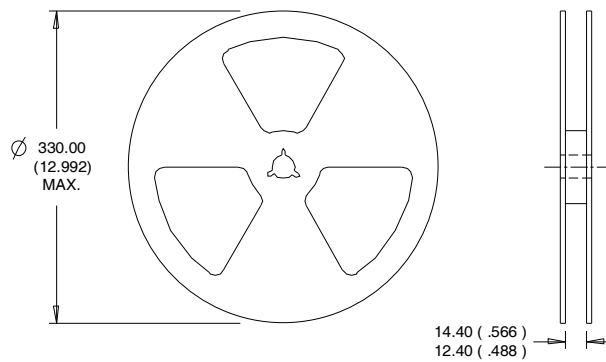
1. For an Automotive Qualified version of this part please see : <http://www.irf.com/product-info/automotive/>
2. For the most current drawing please refer to IR website at: <http://www.irf.com/package/>

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

Revision History

Date	Comment
8/22/2014	<ul style="list-style-type: none"> • Updated data sheet based on corporate template. • Added Qual level on page 8. • Added ordering information and updated to reflect the End-Of-life (EOL) of the Tube option (EOL notice #529) on page 1.