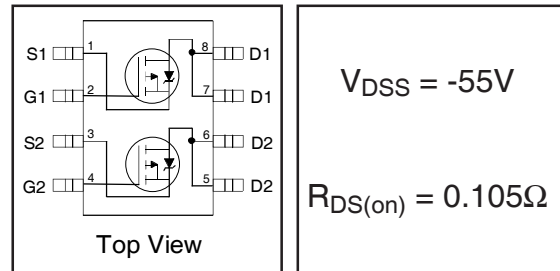


- Advanced Process Technology
- Ultra Low On-Resistance
- Dual P Channel MOSFET
- Surface Mount
- Available in Tape & Reel
- 150°C Operating Temperature
- Lead-Free

### HEXFET® Power MOSFET



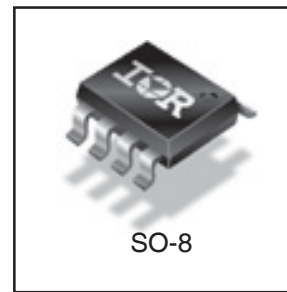
$$V_{DS} = -55V$$

$$R_{DS(on)} = 0.105\Omega$$

### 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	$\pm 20$	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	$^\circ C$

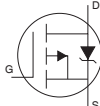
### Thermal Resistance

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

**Electrical Characteristics @ T<sub>J</sub> = 25°C (unless otherwise specified)**

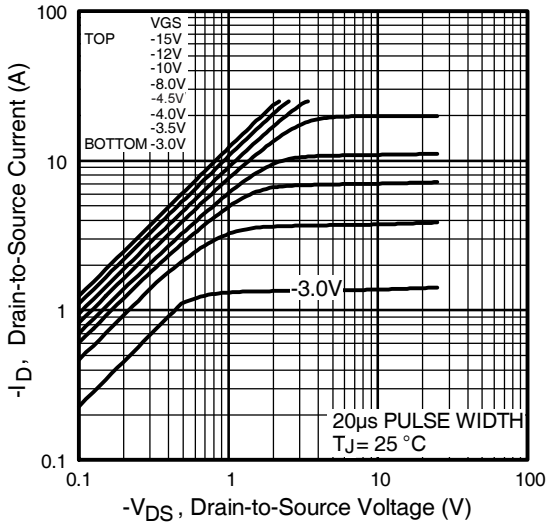
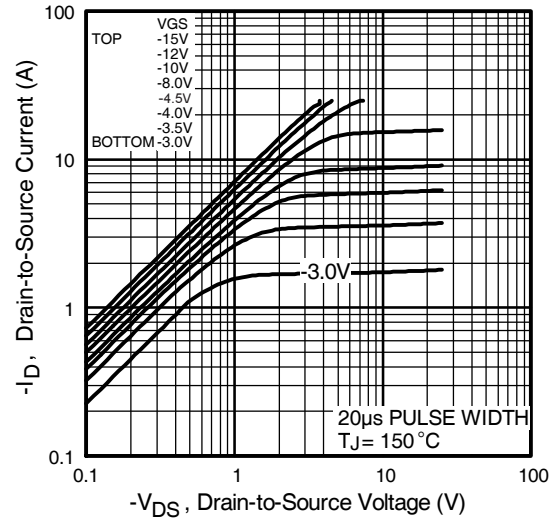
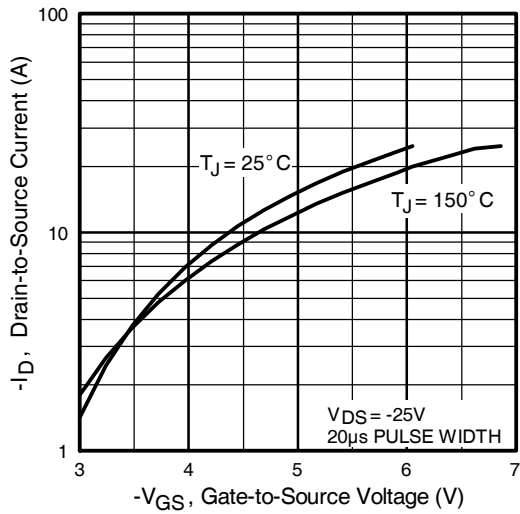
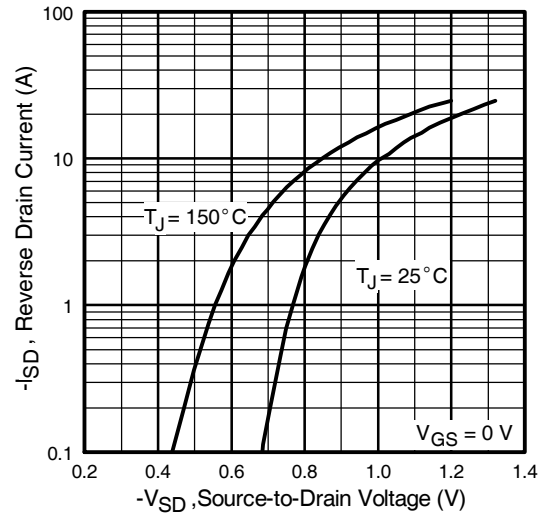
	Parameter	Min.	Typ.	Max.	Units	Conditions
V <sub>(BR)DSS</sub>	Drain-to-Source Breakdown Voltage	-55	—	—	V	V <sub>GS</sub> = 0V, I <sub>D</sub> = -250μA
ΔV <sub>(BR)DSS</sub> /ΔT <sub>J</sub>	Breakdown Voltage Temp. Coefficient	—	-0.054	—	V/°C	Reference to 25°C, I <sub>D</sub> = -1mA
R <sub>DS(on)</sub>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

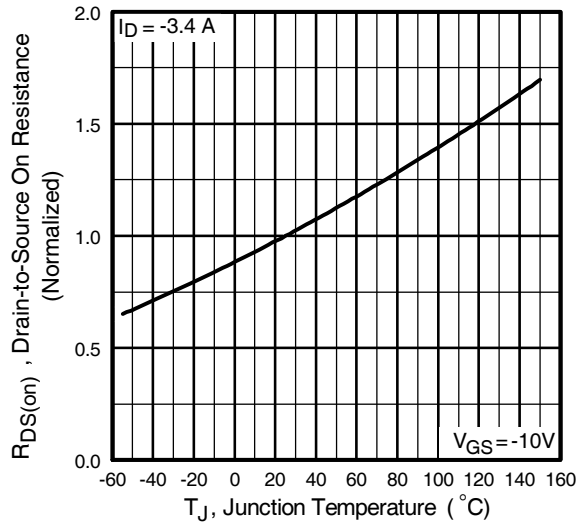
**Source-Drain Ratings and Characteristics**

	Parameter	Min.	Typ.	Max.	Units	Conditions
I <sub>S</sub>	Continuous Source Current (Body Diode)	—	—	-2.0	A	MOSFET symbol showing the integral reverse p-n junction diode. 
I <sub>SM</sub>	Pulsed Source Current (Body Diode) ①	—	—	-27		
V <sub>SD</sub>	Diode Forward Voltage	—	—	-1.2	V	T <sub>J</sub> = 25°C, I <sub>S</sub> = -2.0A, V <sub>GS</sub> = 0V ③
t <sub>rr</sub>	Reverse Recovery Time	—	54	80	ns	T <sub>J</sub> = 25°C, I <sub>F</sub> = -2.0A
Q <sub>rr</sub>	Reverse Recovery Charge	—	85	130	nC	di/dt = -100A/μs ③

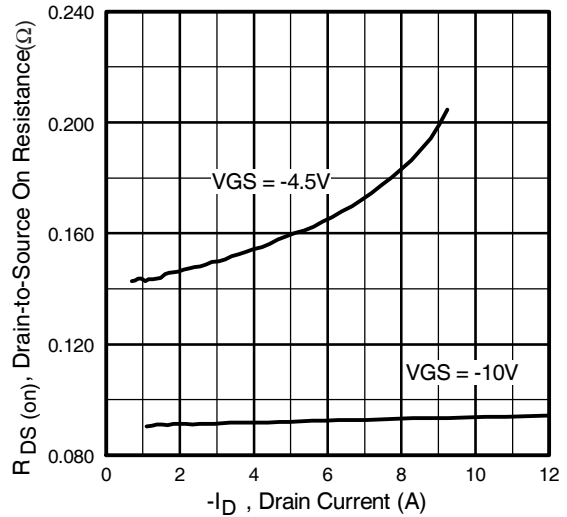
**Notes:**

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

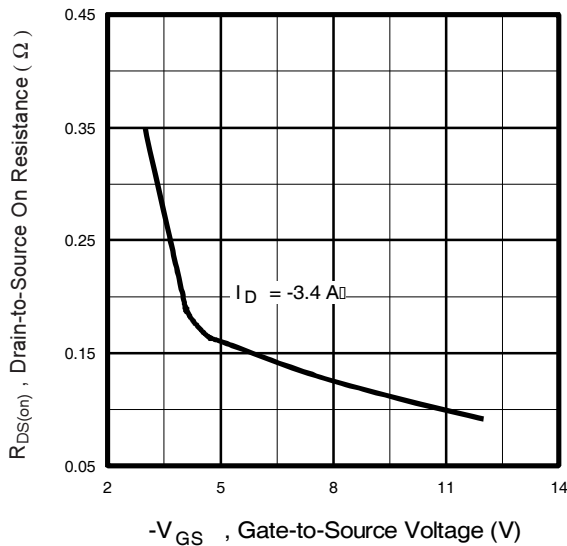

**Fig 1. Typical Output Characteristics**

**Fig 2. Typical Output Characteristics**

**Fig 3. Typical Transfer Characteristics**

**Fig 4. Typical Source-Drain Diode Forward Voltage**



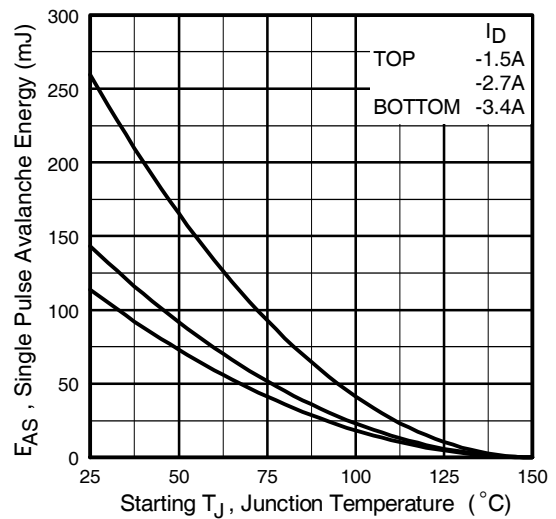
**Fig 5.** Normalized On-Resistance Vs. Temperature



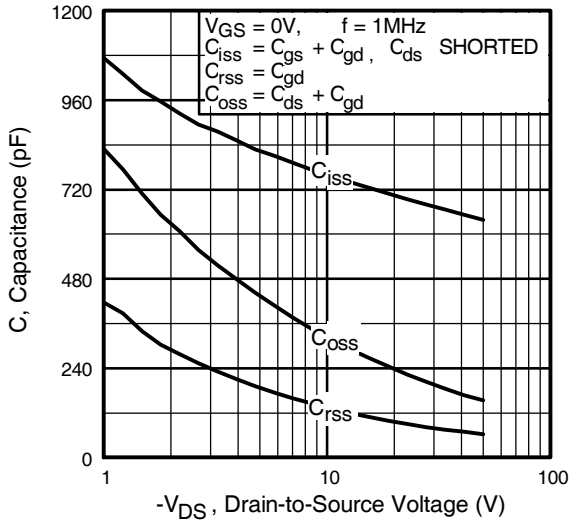
**Fig 6.** Typical On-Resistance Vs. Drain Current



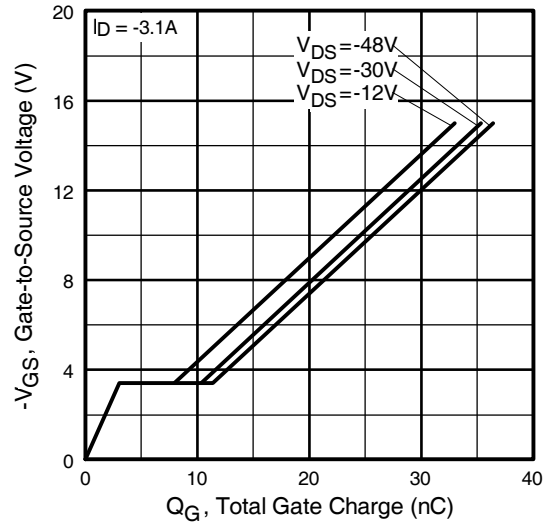
**Fig 7.** Typical On-Resistance Vs. Gate Voltage



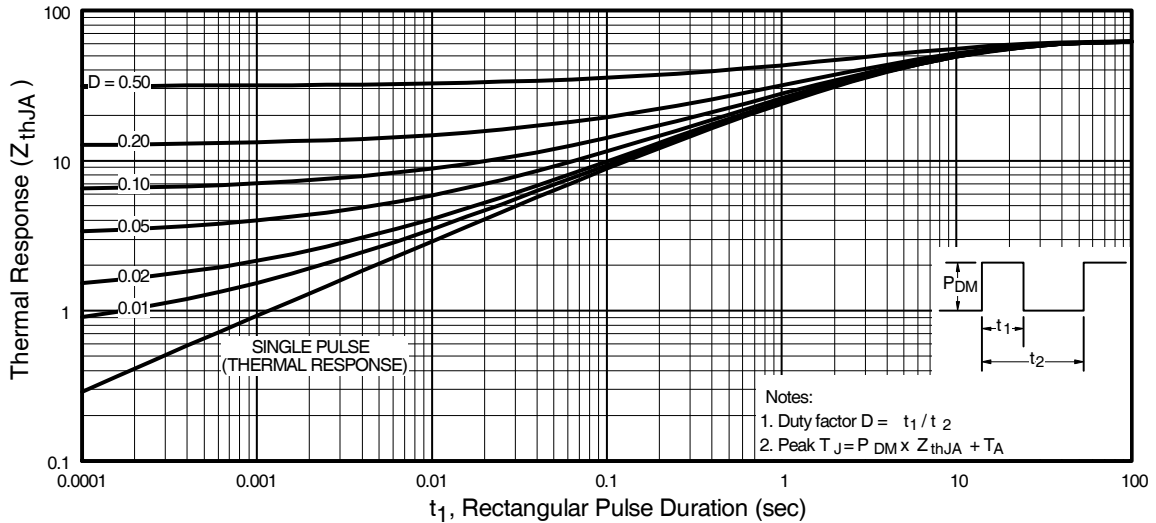
**Fig 8.** Maximum Avalanche Energy Vs. Drain Current



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



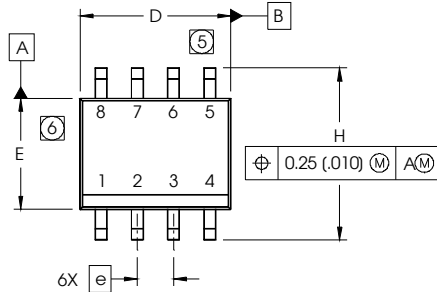
**Fig 10.** Typical Gate Charge Vs. Gate-to-Source Voltage



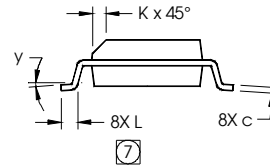
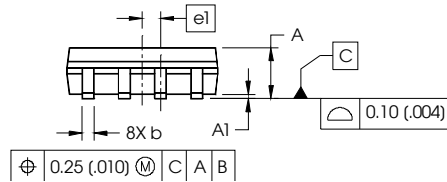
**Fig 11.** Maximum Effective Transient Thermal Impedance, Junction-to-Ambient

## SO-8 Package Outline

Dimensions are shown in millimeters (inches)



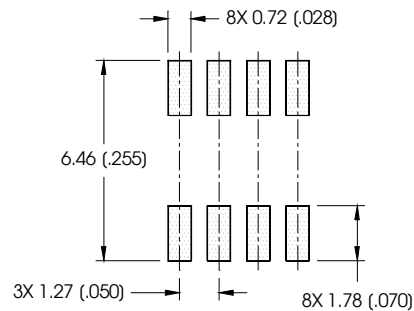
DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	.0532	.0688	1.35	1.75
A1	.0040	.0098	0.10	0.25
b	.013	.020	0.33	0.51
c	.0075	.0098	0.19	0.25
D	.189	.1968	4.80	5.00
E	.1497	.1574	3.80	4.00
e	.050 BASIC		1.27 BASIC	
e1	.025 BASIC		0.635 BASIC	
H	.2284	.2440	5.80	6.20
K	.0099	.0196	0.25	0.50
L	.016	.050	0.40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



### NOTES:

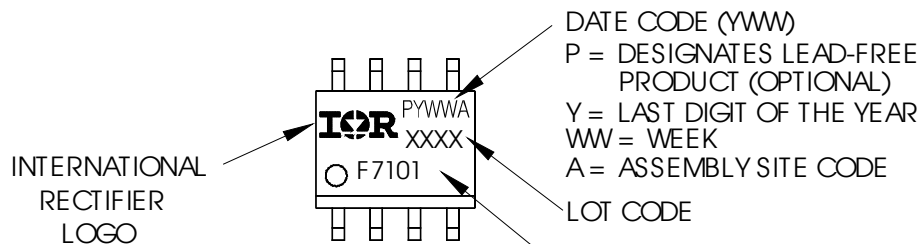
- DIMENSIONING & TOLERANCING PER ASME Y14.5M-1994.
- CONTROLLING DIMENSION: MILLIMETER
- DIMENSIONS ARE SHOWN IN MILLIMETERS (INCHES).
- OUTLINE CONFORMS TO JEDEC OUTLINE MS-012AA.
- ⑤** DIMENSION DOES NOT INCLUDE MOLD PROTRUSIONS. MOLD PROTRUSIONS NOT TO EXCEED 0.15 (.006).
- ⑥** DIMENSION DOES NOT 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)

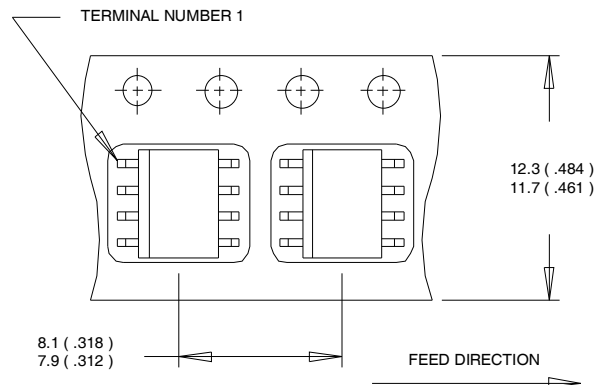


### Note:

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

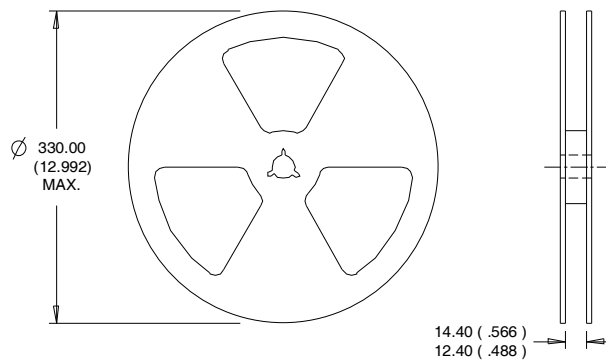
### SO-8 Tape and Reel

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<sup>†</sup>**

Qualification level	Industrial (per JEDEC JESD47F <sup>††</sup> guidelines)	
Moisture Sensitivity Level	SO-8	MSL1 (per JEDEC J-STD-020D <sup>††</sup> )
RoHS compliant	Yes	

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

<sup>††</sup> Applicable version of JEDEC standard at the time of product release

**Revision History**

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