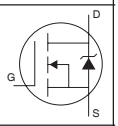
Electrical Characteristics @ T_J = 25°C (unless otherwise specified)

	Parameter	Min.	Typ.	Max.	Units	Conditions
$V_{(BR)DSS}$	Drain-to-Source Breakdown Voltage	30	——	——	V	V_{GS} = 0V, I_D = 250µA
$\Delta V_{(BR)DSS}/\Delta T_J$	Breakdown Voltage Temp. Coefficient	——	0.024	——	V/°C	Reference to 25°C, I_D = 1mA
$R_{DS(on)}$	Static Drain-to-Source On-Resistance	——	——	0.030	Ω	V_{GS} = 10V, I_D = 7.3A ④
		——	——	0.050		V_{GS} = 4.5V, I_D = 3.7A ④
$V_{GS(th)}$	Gate Threshold Voltage	1.0	——	——	V	V_{DS} = V_{GS}, I_D = 250µA
g_{fs}	Forward Transconductance	5.8	——	——	S	V_{DS} = 15V, I_D = 2.3A
I_{DSS}	Drain-to-Source Leakage Current	——	——	1.0	µA	V_{DS} = 24V, V_{GS} = 0V
		——	——	25		V_{DS} = 24V, V_{GS} = 0V, T_J = 125°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	——	19	28	nC	I_D = 4.6A
Q_{gs}	Gate-to-Source Charge	——	2.3	3.5		V_{DS} = 24V
Q_{gd}	Gate-to-Drain ("Miller") Charge	——	6.3	9.5		V_{GS} = 10V, See Fig. 10 ④
$t_{d(on)}$	Turn-On Delay Time	——	7.0	——	ns	V_{DD} = 15V
t_r	Rise Time	——	35	——		I_D = 4.6A
$t_{d(off)}$	Turn-Off Delay Time	——	21	——		R_G = 6.2Ω
t_f	Fall Time	——	19	——		R_D = 3.2Ω, ④
C_{iss}	Input Capacitance	——	550	——	pF	V_{GS} = 0V
C_{oss}	Output Capacitance	——	260	——		V_{DS} = 25V
C_{rss}	Reverse Transfer Capacitance	——	100	——		f = 1.0MHz, See Fig. 9

Source-Drain Ratings and Characteristics

	Parameter	Min.	Typ.	Max.	Units	Conditions
I_S	Continuous Source Current (Body Diode)	———	———	2.5	A	MOSFET symbol showing the integral reverse p-n junction diode.
I_{SM}	Pulsed Source Current (Body Diode) ①	———	———	58		
V_{SD}	Diode Forward Voltage	——	——	1.2	V	T_J = 25°C, I_S = 4.6A, V_{GS} = 0V ③
t_{rr}	Reverse Recovery Time	——	48	73	ns	T_J = 25°C, I_F = 4.6A
Q_{rr}	Reverse RecoveryCharge	——	73	110	nC	di/dt = 100A/µs ③



Notes:

① Repetitive rating; pulse width limited by max. junction temperature. (See fig. 11)

② V_{DD} = 15V, starting T_J = 25°C, L = 6.6mH R_G = 25Ω, I_{AS} = 4.6A. (See Figure 8)

③ I_{SD} ≤ 4.6A, di/dt ≤ 120A/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

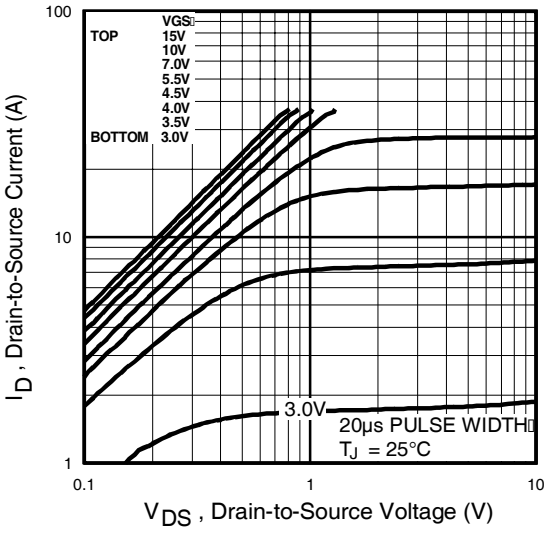


Fig 1. Typical Output Characteristics

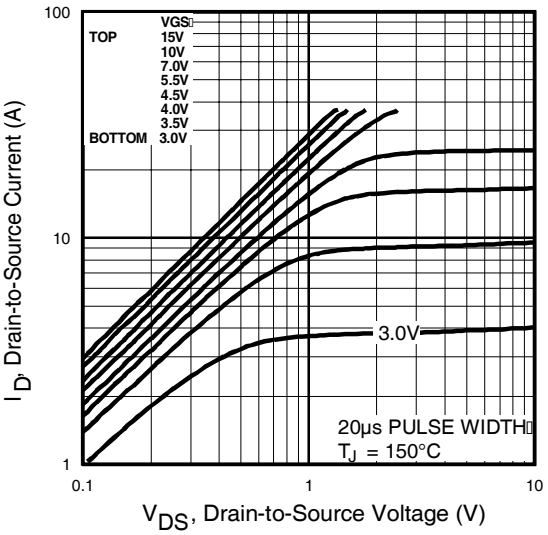


Fig 2. Typical Output Characteristics

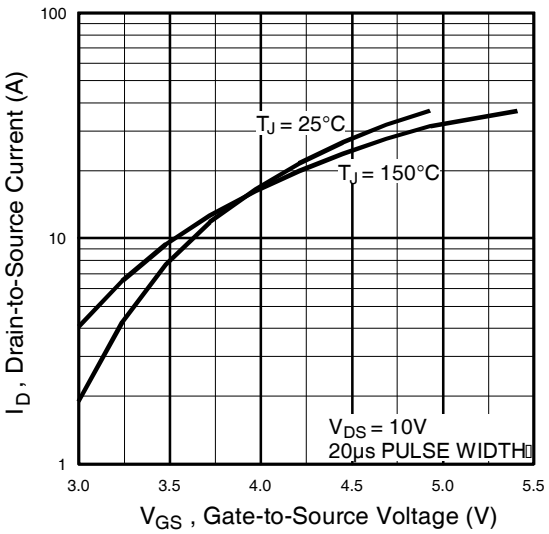


Fig 3. Typical Transfer Characteristics

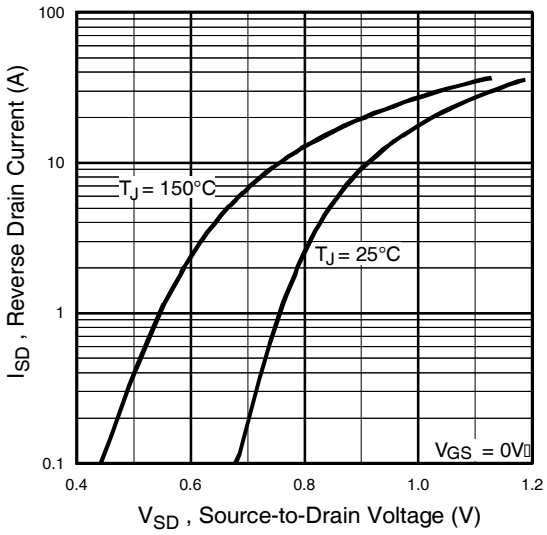


Fig 4. Typical Source-Drain Diode Forward Voltage

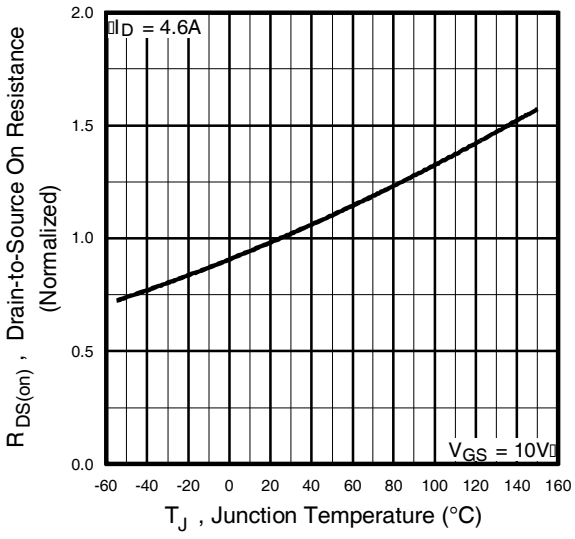


Fig 5. Normalized On-Resistance Vs. Temperature

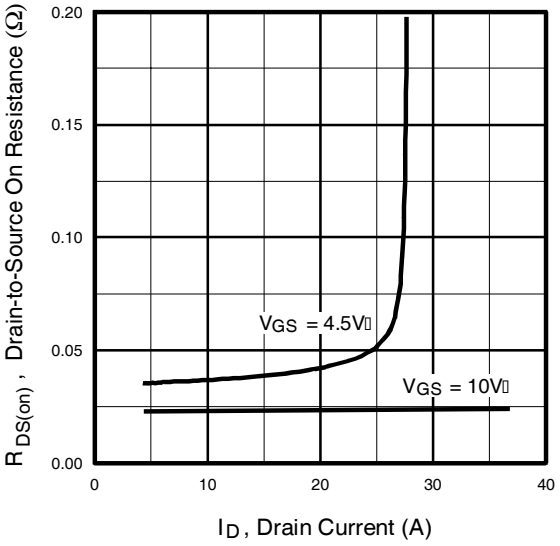


Fig 6. On-Resistance Vs. Drain Current

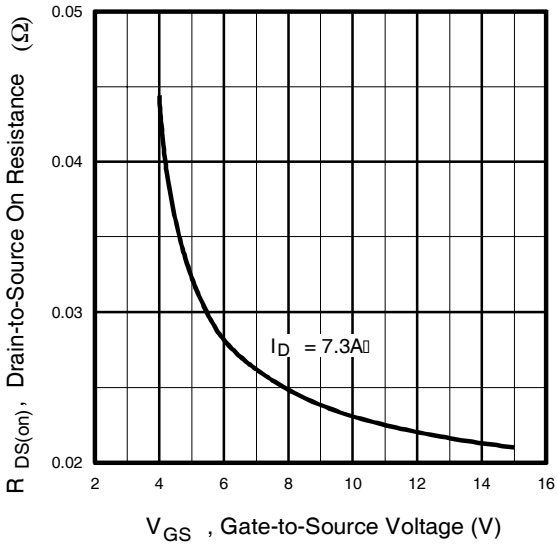


Fig 7. On-Resistance Vs. Gate Voltage

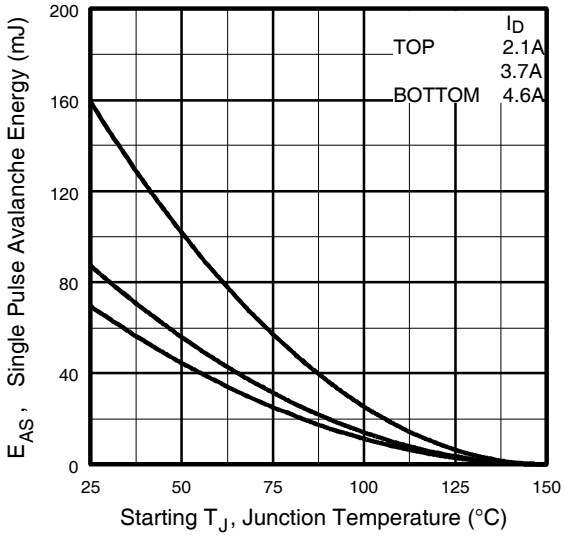


Fig 8. Maximum Avalanche Energy Vs. Drain Current

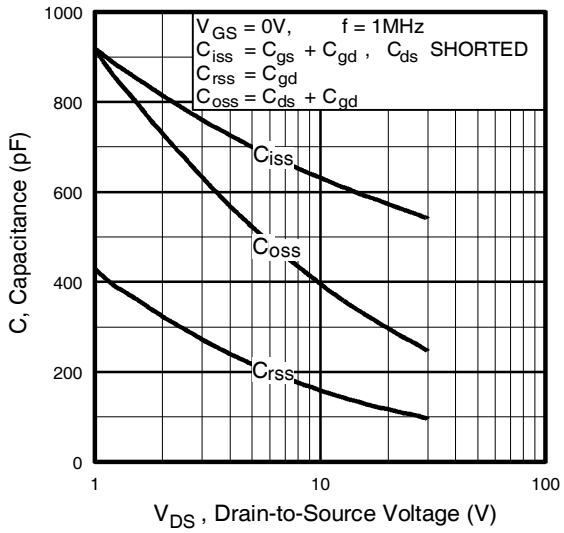


Fig 9. Typical Capacitance Vs. Drain-to-Source Voltage

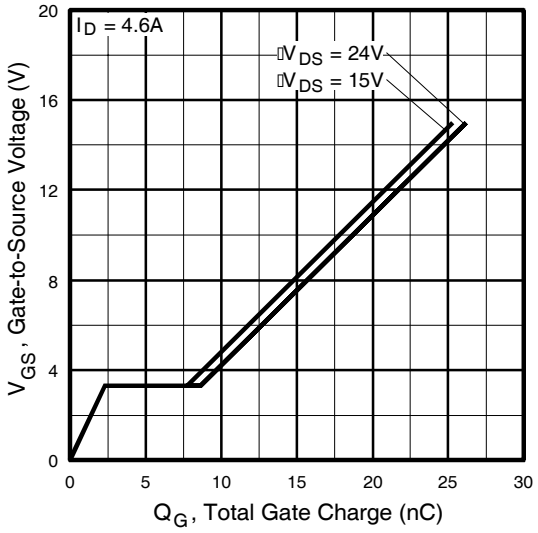


Fig 10. Typical Gate Charge Vs. Gate-to-Source Voltage

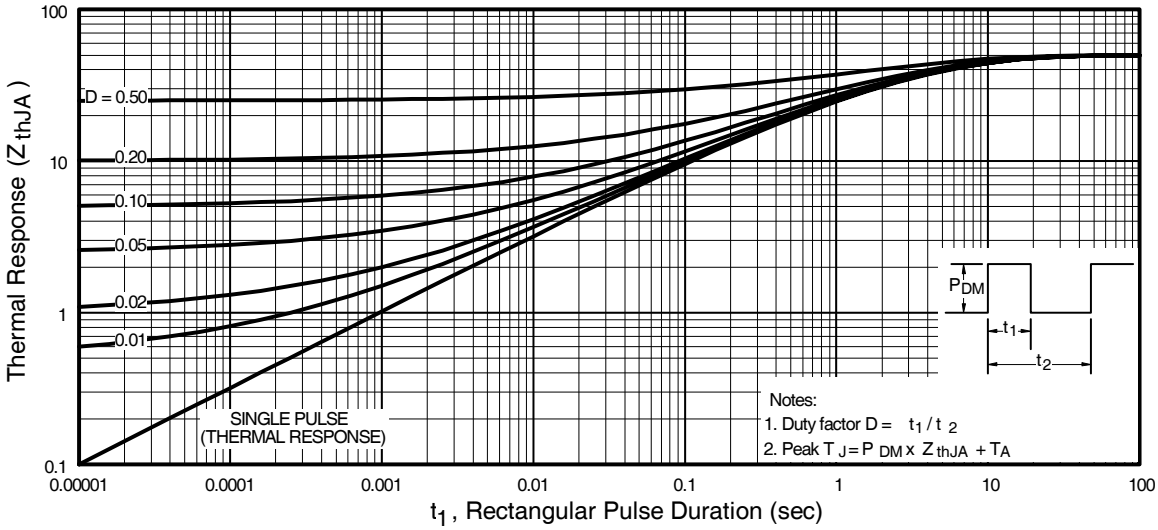
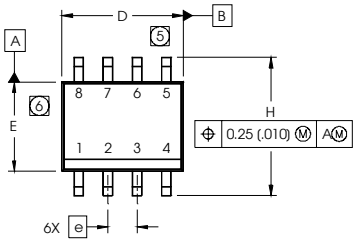
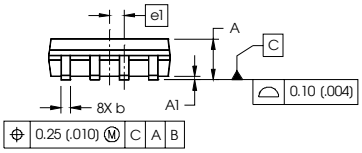


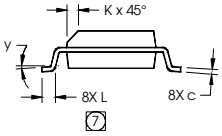
Fig 11. Maximum Effective Transient Thermal Impedance, Junction-to-Ambient

SO-8 Package Outline

Dimensions are shown in milimeters (inches)



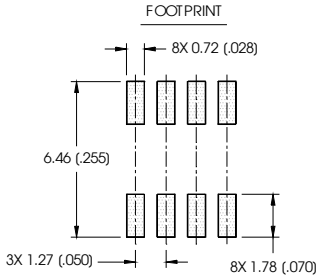




DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	.0532	.0688	1.35	1.75
A1	.0040	.0098	0.10	0.25
b	.013	.020	0.33	0.51
c	.0075	.0098	0.19	0.25
D	.189	.1968	4.80	5.00
E	.1497	.1574	3.80	4.00
e	.050 BASIC		1.27 BASIC	
e1	.025 BASIC		0.635 BASIC	
H	.2284	.2440	5.80	6.20
K	.0099	.0196	0.25	0.50
L	.016	.050	0.40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

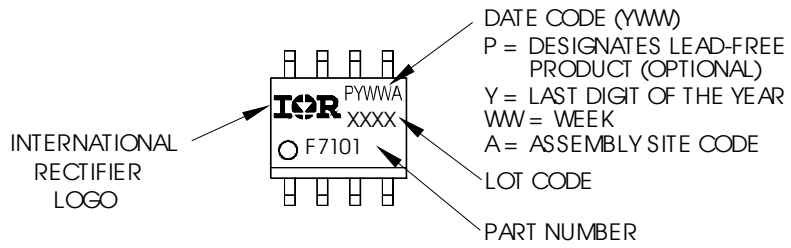
NOTES:

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.



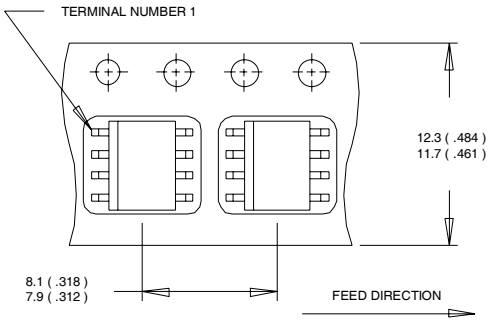
SO-8 Part Marking Information (Lead-Free)

EXAMPLE: THIS IS AN IRF7101 (MOSFET)

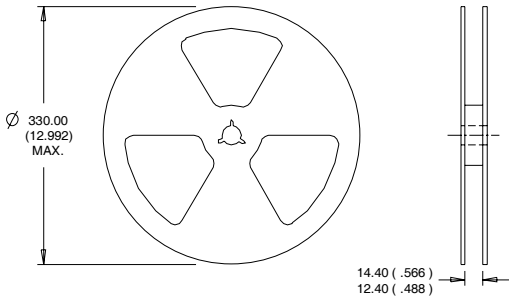


SO-8 Tape and Reel

Dimensions are shown in milimeters (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.

Data and specifications subject to change without notice.
This product has been designed and qualified for the Consumer market.
Qualifications Standards can be found on IR's Web site.

International
IOR Rectifier

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