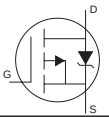
Electrical Characteristics @ T_J = 25°C (unless otherwise specified)

	Parameter	Min.	Typ.	Max.	Units	Conditions
$V_{(BR)DSS}$	Drain-to-Source Breakdown Voltage	-20	—	—	V	V_{GS} = 0V, I_D = -250µA
$\Delta V_{(BR)DSS}/\Delta T_J$	Breakdown Voltage Temp. Coefficient	—	0.031	—	V/°C	Reference to 25°C, I_D = -1mA
$R_{DS(on)}$	Static Drain-to-Source On-Resistance	—	0.049	0.058	Ω	V_{GS} = -4.5V, I_D = -2.9A ④
		—	0.082	0.098		V_{GS} = -2.7V, I_D = -1.5A ④
$V_{GS(th)}$	Gate Threshold Voltage	-0.70	—	—	V	V_{DS} = V_{GS}, I_D = -250µA
g_{fs}	Forward Transconductance	—	5.9	—	S	V_{DS} = -10V, I_D = -1.5A
I_{DSS}	Drain-to-Source Leakage Current	—	—	-1.0	µA	V_{DS} = -16V, V_{GS} = 0V
		—	—	-25		V_{DS} = -16V, V_{GS} = 0V, T_J = 55°C
I_{GSS}	Gate-to-Source Forward Leakage	—	—	100	nA	V_{GS} = -12V
	Gate-to-Source Reverse Leakage	—	—	-100		V_{GS} = 12V
Q_g	Total Gate Charge	—	19	29	nC	I_D = -2.9A
Q_{gs}	Gate-to-Source Charge	—	4.0	6.1		V_{DS} = -16V
Q_{gd}	Gate-to-Drain ("Miller") Charge	—	7.7	12		V_{GS} = -4.5V, See Fig. 10 ④
$t_{d(on)}$	Turn-On Delay Time	—	15	22	ns	V_{DD} = -10V
t_r	Rise Time	—	40	60		I_D = -2.9A
$t_{d(off)}$	Turn-Off Delay Time	—	42	63		R_G = 6.0Ω
t_f	Fall Time	—	49	73		R_D = 3.4Ω ④
C_{iss}	Input Capacitance	—	780	—	pF	V_{GS} = 0V
C_{oss}	Output Capacitance	—	470	—		V_{DS} = -15V
C_{rss}	Reverse Transfer Capacitance	—	240	—		f = 1.0MHz, See Fig. 5

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	—	—	-21		
V_{SD}	Diode Forward Voltage	—	-0.78	-1.0	V	T_J = 25°C, I_S = -2.9A, V_{GS} = 0V ③
t_{rr}	Reverse Recovery Time	—	47	71	ns	T_J = 25°C, I_F = -2.9A
Q_{rr}	Reverse RecoveryCharge	—	49	73	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 = 35mH R_G = 25Ω, I_{AS} = -2.9A.

③ I_{SD} ≤ -2.9A, di/dt ≤ -77A/µs, V_{DD} ≤ $V_{(BR)DSS}$, T_J ≤ 150°C

④ Pulse width ≤ 300µs; duty cycle ≤ 2%.

⑤ Surface mounted on FR-4 board, t ≤ 10sec.

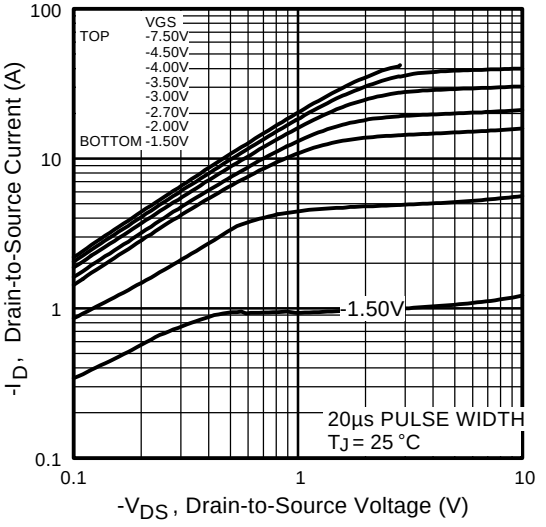


Fig 1. Typical Output Characteristics

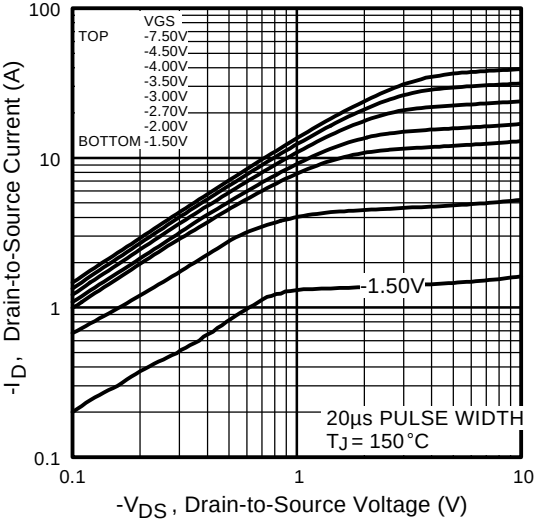


Fig 2. Typical Output Characteristics

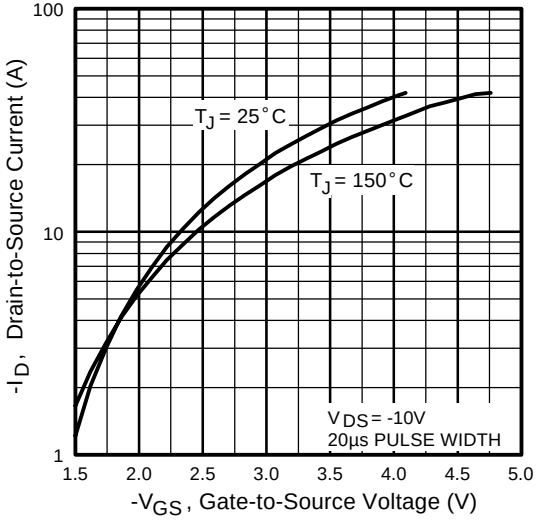


Fig 3. Typical Transfer Characteristics

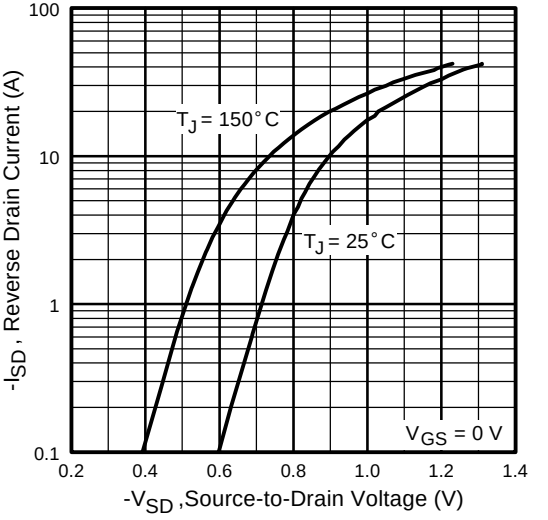


Fig 4. Typical Source-Drain Diode Forward Voltage

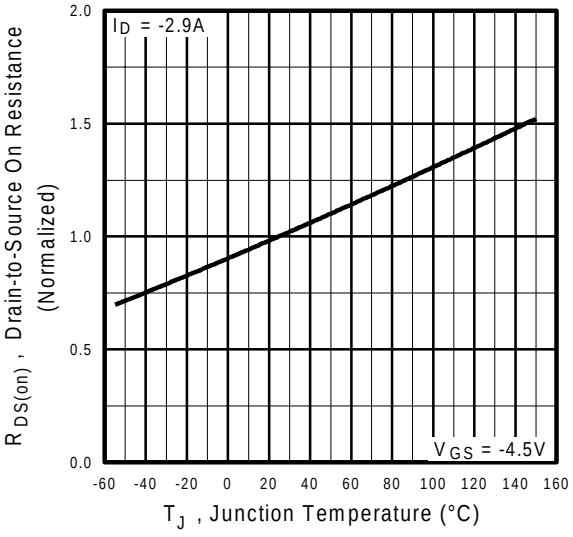


Fig 5. Normalized On-Resistance Vs. Temperature

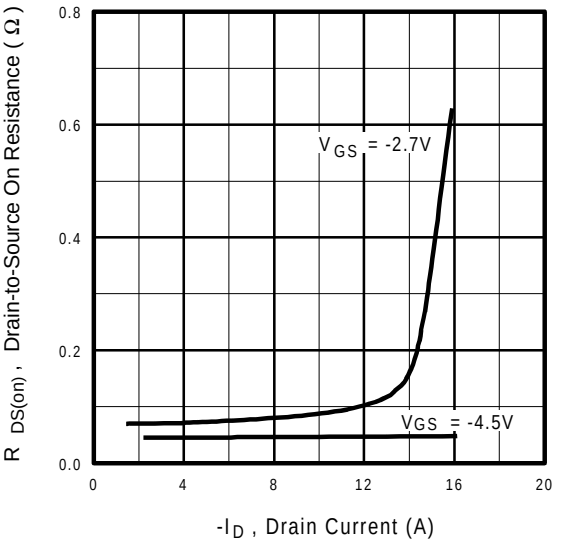


Fig 6. Typical On-Resistance Vs. Drain Current

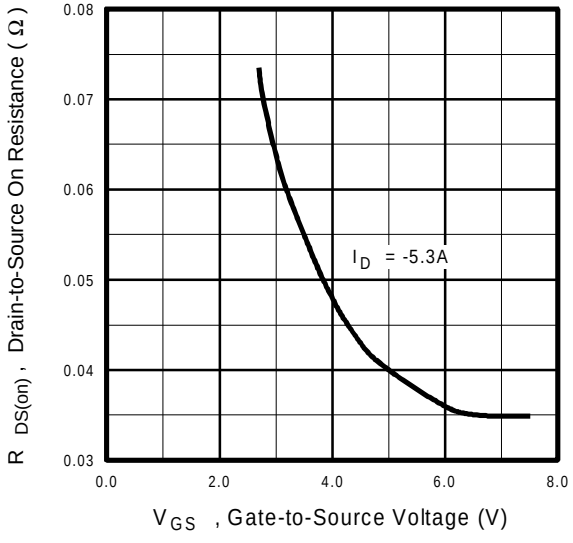


Fig 7. Typical On-Resistance Vs. Gate Voltage

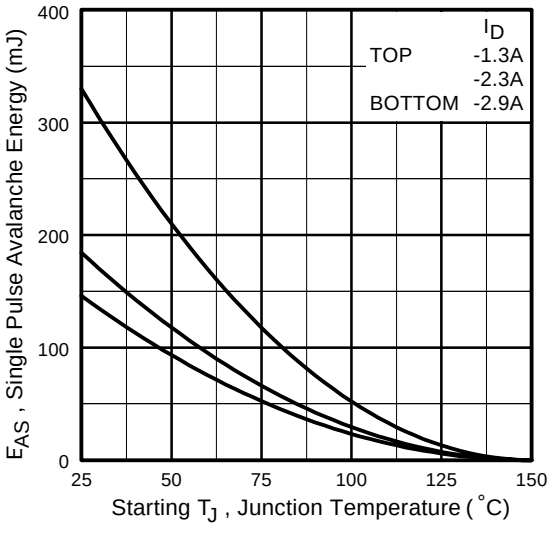


Fig 8. Maximum Avalanche Energy Vs. Drain Current

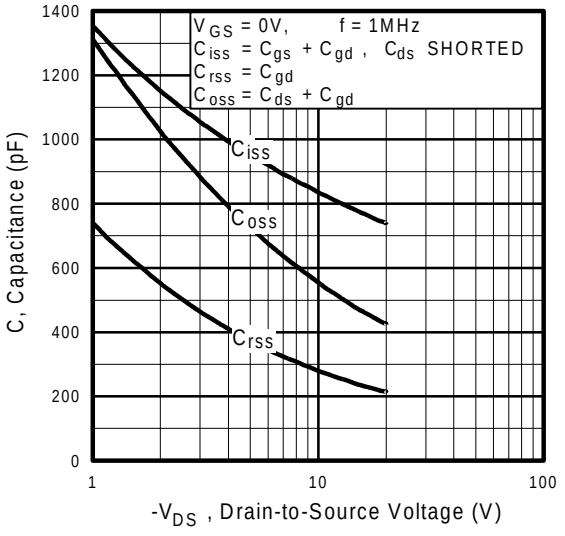


Fig 9. Typical Capacitance Vs. Drain-to-Source Voltage

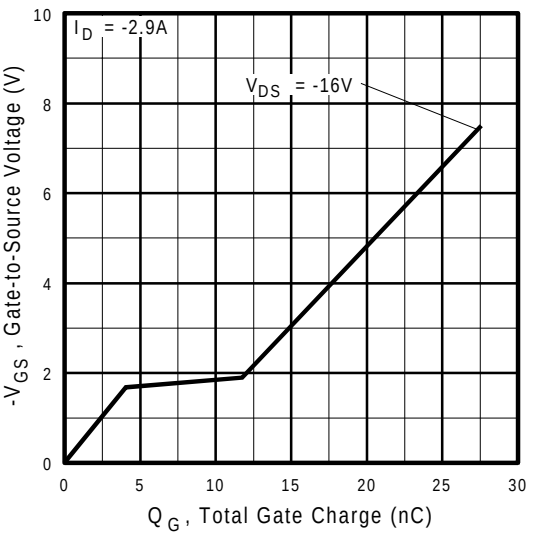


Fig 10. Typical Gate Charge Vs. Gate-to-Source Voltage

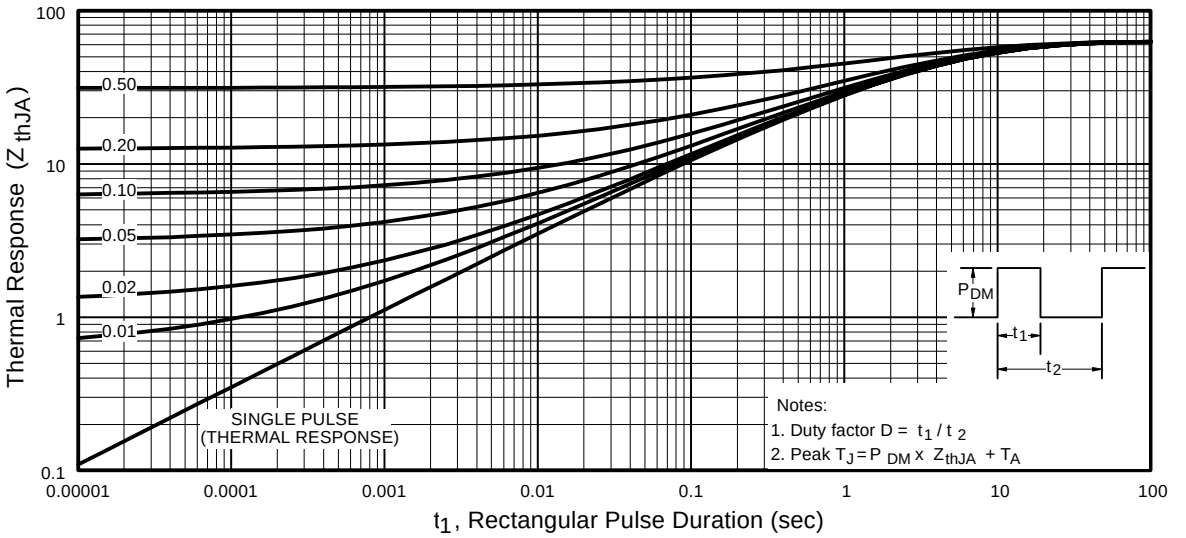
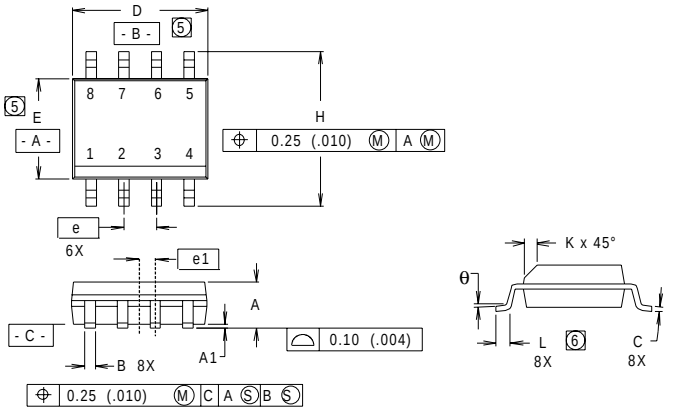


Fig 11. Maximum Effective Transient Thermal Impedance, Junction-to-Ambient

Package Outline

SO8 Outline



DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	.0532	.0688	1.35	1.75
A1	.0040	.0098	0.10	0.25
B	.014	.018	0.36	0.46
C	.0075	.0098	0.19	0.25
D	.189	.196	4.80	4.98
E	.150	.157	3.81	3.99
e	.050 BASIC		1.27 BASIC	
e1	.025 BASIC		0.635 BASIC	
H	.2284	.2440	5.80	6.20
K	.011	.019	0.28	0.48
L	0.16	.050	0.41	1.27
θ	0°	8°	0°	8°

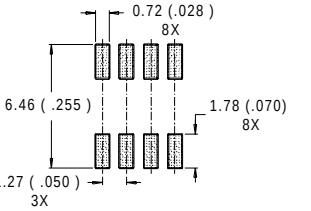
NOTES:

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M-1982.
2. CONTROLLING DIMENSION : INCH.
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 0.25 (.006).

[6] DIMENSIONS IS THE LENGTH OF LEAD FOR SOLDERING TO A SUBSTRATE..

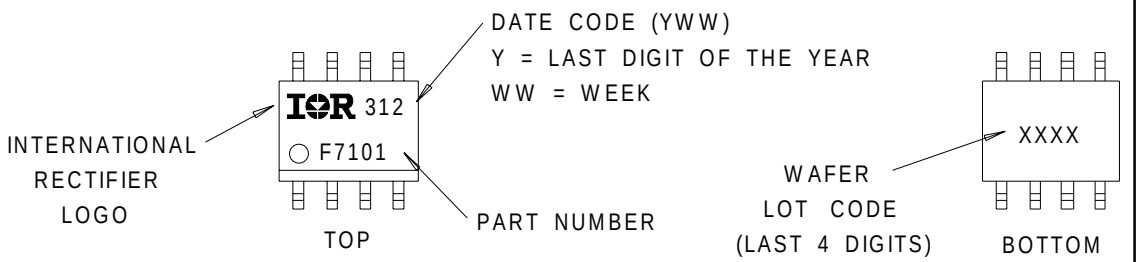
RECOMMENDED FOOTPRINT



Part Marking Information

SO8

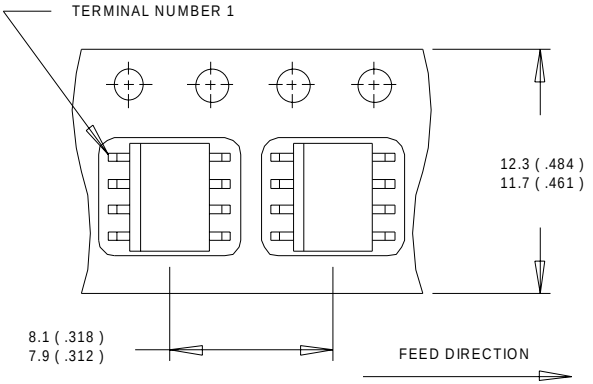
EXAMPLE : THIS IS AN IRF7101



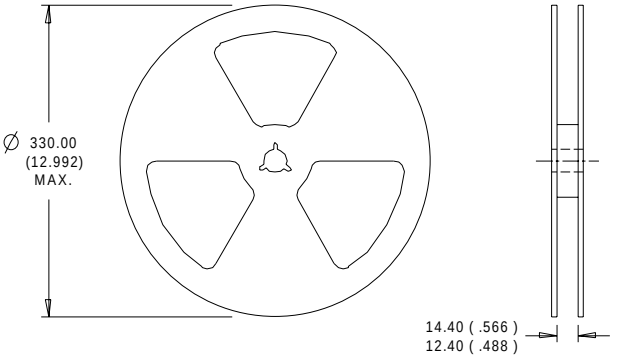
Tape & Reel Information

SO8

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.

International
IOR Rectifier

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IR GERMANY: Saalburgstrasse 157, 61350 Bad Homburg Tel: ++ 49 6172 96590
IR ITALY: Via Liguria 49, 10071 Borgaro, Torino Tel: ++ 39 11 451 0111
IR FAR EAST: K&H Bldg., 2F, 30-4 Nishi-Ikebukuro 3-Chome, Toshima-Ku, Tokyo Japan 171 Tel: 81 3 3983 0086
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