Maximum Ratings (@T_A = +25°C, unless otherwise specified.)

Characteristic			Symbol	Value	Unit
Drain-Source Voltage			V_{DSS}	30	V
Gate-Source Voltage			V_{GSS}	±20	V
Continuous Drain Current (Note 5) V_{GS} = 10V	Steady State	T_A = +25°C T_A = +85°C	I_D	11 6.6	A
Pulsed Drain Current (Note 6)			I_{DM}	80	A
Avalanche Current (Notes 6 & 7)			I_{AR}	17	A
Repetitive Avalanche Energy (Notes 6 & 7) L = 0.3mH			E_{AR}	43	mJ

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 5)	P_D	1.55	W
Thermal Resistance, Junction to Ambient @T_A = +25°C (Note 5)	$R_{\theta JA}$	81.3	°C/W
Operating and Storage Temperature Range	T_J, T_{STG}	-55 to +150	°C

Electrical Characteristics (@T_A = +25°C, unless otherwise specified.)

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
OFF CHARACTERISTICS (Note 8)						
Drain-Source Breakdown Voltage	BV_{DSS}	30	-	-	V	V_{GS} = 0V, I_D = 250µA
Zero Gate Voltage Drain Current	I_{DSS}	-	-	0.1	mA	V_{DS} = 30V, V_{GS} = 0V
Gate-Source Leakage	I_{GSS}	-	-	±100	nA	V_{GS} = ±20V, V_{DS} = 0V
ON CHARACTERISTICS (Note 8)						
Gate Threshold Voltage	$V_{GS(TH)}$	1.0	1.5	2.5	V	V_{DS} = V_{GS}, I_D = 250µA
Static Drain-Source On-Resistance	$R_{DS(ON)}$	- -	8.5 9.5	11.9 14.9	mΩ	V_{GS} = 10V, I_D = 11A V_{GS} = 4.5V, I_D = 8.8A
Forward Transfer Admittance	$\|Y_{fs}\|$	-	18	-	S	V_{DS} = 5V, I_D = 10A
Diode Forward Voltage	V_{SD}	-	0.45	1	V	V_{GS} = 0V, I_S = 1A
DYNAMIC CHARACTERISTICS (Note 9)						
Input Capacitance	C_{iss}	-	1276	-	pF	V_{DS} = 15V, V_{GS} = 0V, f = 1.0MHz
Output Capacitance	C_{oss}	-	160	-	pF	
Reverse Transfer Capacitance	C_{rss}	-	136	-	pF	
Gate Resistance	R_g	-	1.48	2.7	Ω	V_{DS} = 0V, V_{GS} = 0V, f = 1MHz
Total Gate Charge (V_{GS} = 4.5V)	Q_g	-	14.3	-	nC	V_{DS} = 15V, V_{GS} = 4.5V, I_D = 8.8A
Total Gate Charge (V_{GS} = 10V)	Q_g	-	30.6	-	nC	V_{DS} = 15V, V_{GS} = 10V, I_D = 8.8A
Gate-Source Charge	Q_{gs}	-	3.4	-	nC	
Gate-Drain Charge	Q_{gd}	-	4.3	-	nC	
Turn-On Delay Time	$t_{D(ON)}$	-	15.8	-	ns	V_{GS} = 4.5V, V_{DS} = 15V, R_G = 1.8Ω, I_D =8.8A
Turn-On Rise Time	t_R	-	27.8	-	ns	
Turn-Off Delay Time	$t_{D(OFF)}$	-	29.7	-	ns	
Turn-Off Fall Time	t_F	-	13.6	-	ns	

Notes:
5. Device mounted on 1in * 1in FR-4 PCB with 2oz. Copper. The value in any given application depends on the user's specific board design.
6. Repetitive rating, pulse width limited by junction temperature.
7. I_{AR} and E_{AR} ratings are based on low frequency and duty cycles to keep T_J = +25°C.
8. Short duration pulse test used to minimize self-heating effect.
9. Guaranteed by design. Not subject to production testing.

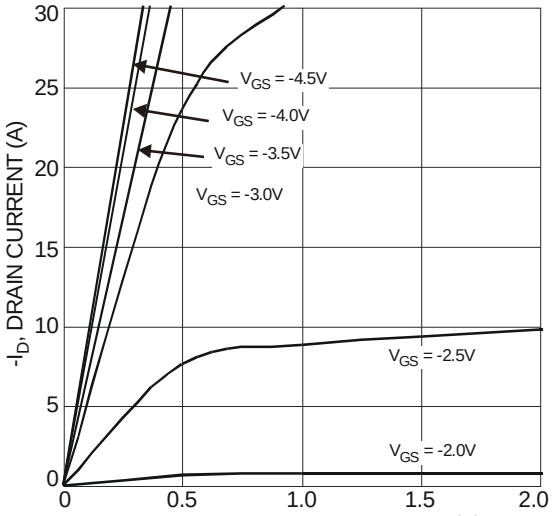


Fig. 1 Typical Output Characteristics

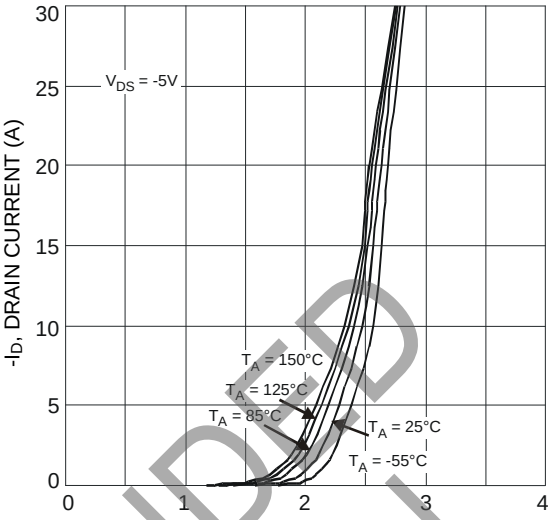


Fig. 2 Typical Transfer Characteristics

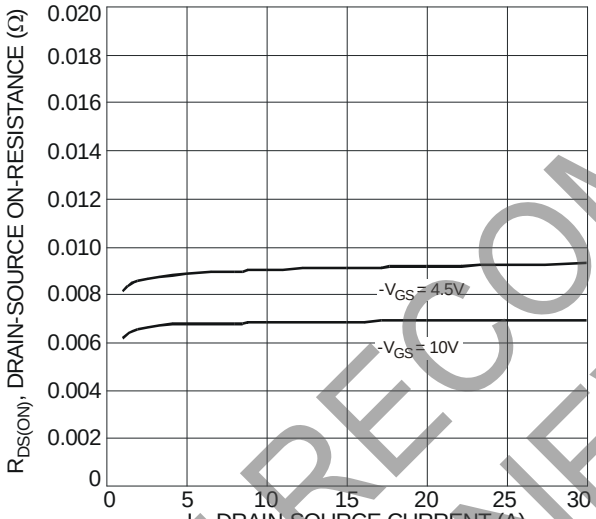


Fig. 3 Typical On-Resistance vs. Drain Current and Gate Voltage

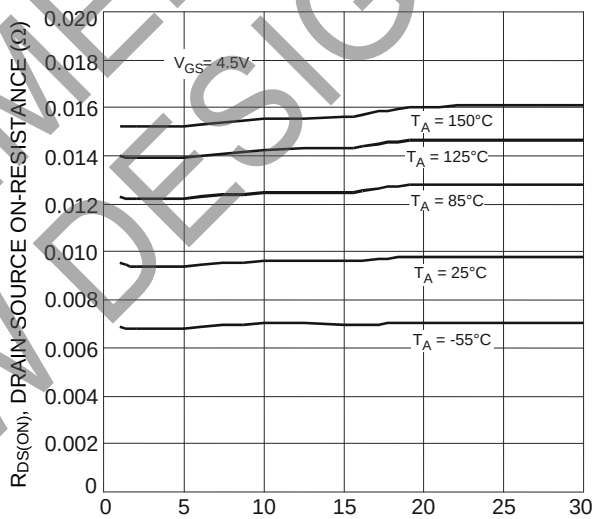


Fig. 4 Typical Drain-Source On-Resistance vs. Drain Current and Temperature

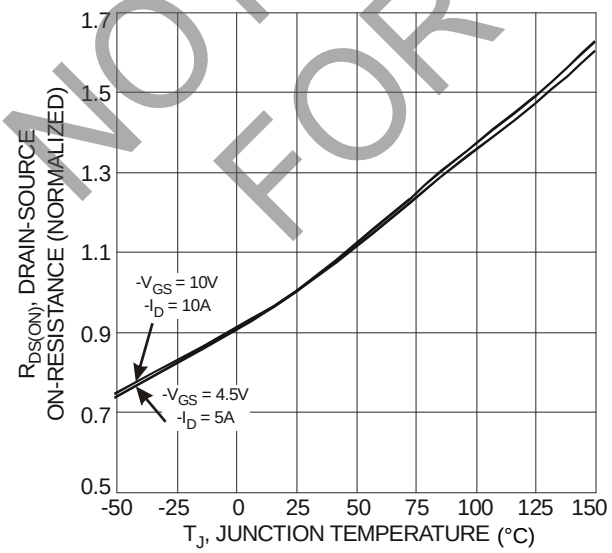


Fig. 5 On-Resistance Variation with Temperature

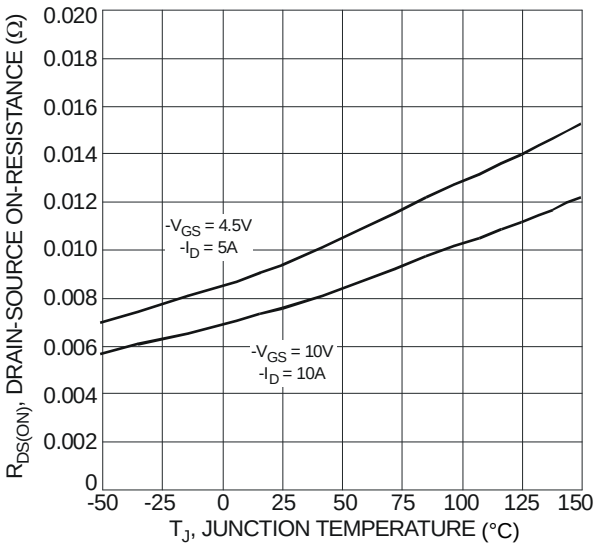


Fig. 6 On-Resistance Variation with Temperature

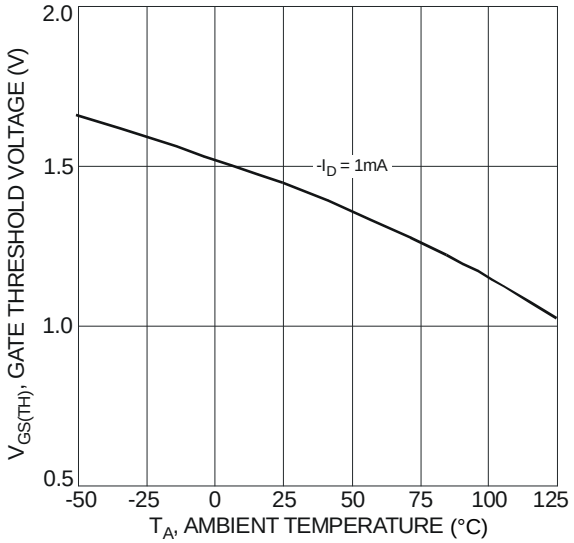


Fig. 7 Gate Threshold Variation vs. Ambient Temperature

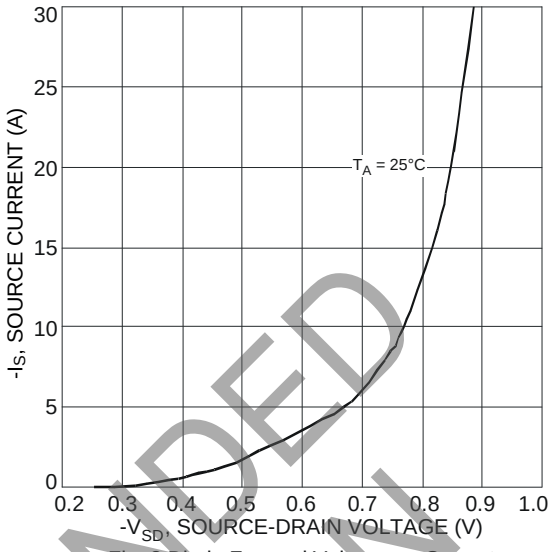


Fig. 8 Diode Forward Voltage vs. Current

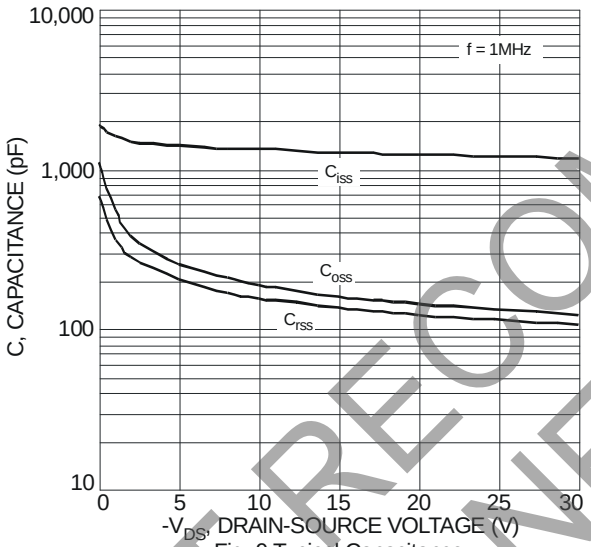


Fig. 9 Typical Capacitance

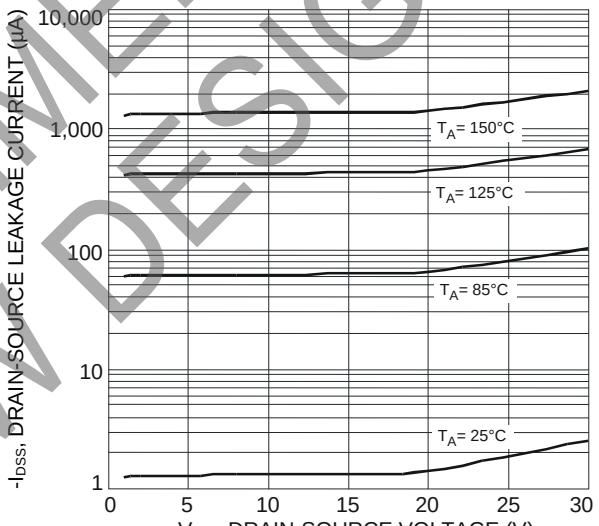


Fig. 10 Typical Drain-Source Leakage Current vs. Drain-Source Voltage

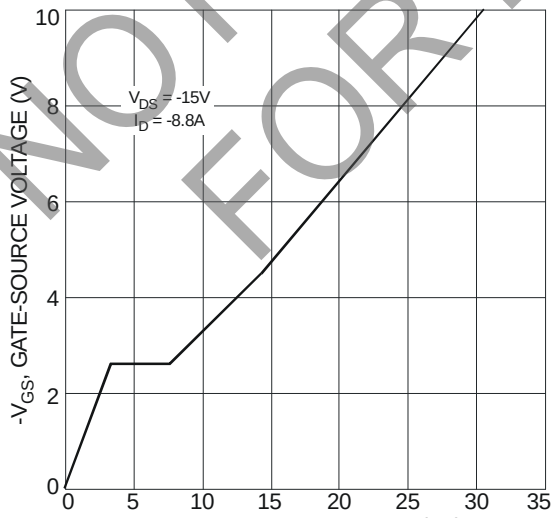


Fig. 11 Gate-Source Voltage vs. Total Gate Charge

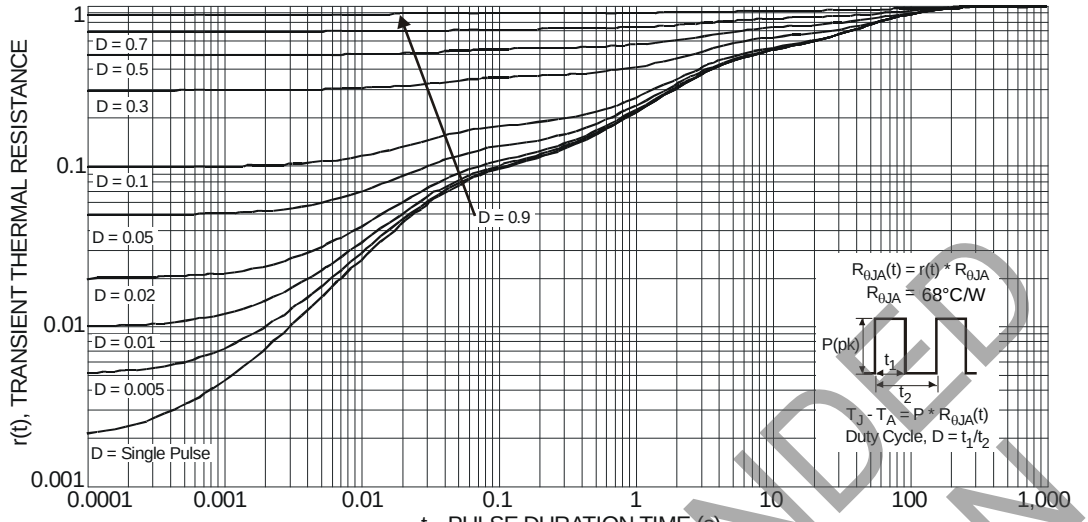
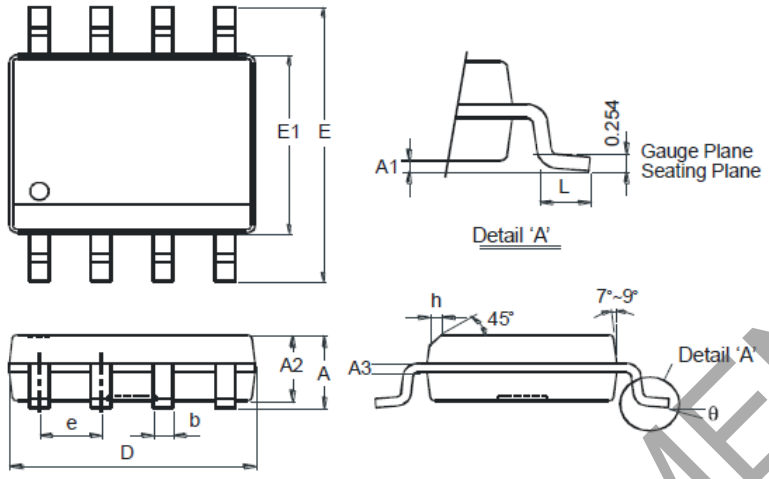


Fig. 12 Transient Thermal Response

Package Outline Dimensions

Please see http://www.diodes.com/package-outlines.html for the latest version.

SO-8



SO-8		
Dim	Min	Max
A	-	1.75
A1	0.10	0.20
A2	1.30	1.50
A3	0.15	0.25
b	0.3	0.5
D	4.85	4.95
E	5.90	6.10
E1	3.85	3.95
e	1.27 Typ	
h	-	0.35
L	0.62	0.82
θ	0°	8°
All Dimensions in mm		

Suggested Pad Layout

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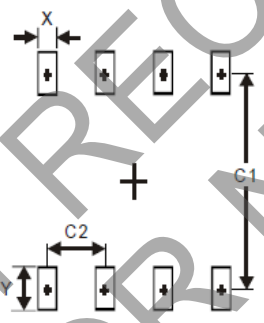
SO-8



Dimensions	Value (in mm)
X	0.60
Y	1.55
C1	5.4
C2	1.27

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