

**Maximum Ratings** (@T<sub>A</sub> = +25°C, unless otherwise specified.)

Characteristic			Symbol	Value	Unit
Drain-Source Voltage			V <sub>DSS</sub>	30	V
Gate-Source Voltage			V <sub>GSS</sub>	±20	V
Continuous Drain Current (Note 5) V <sub>GS</sub> = 10V	Steady State	T <sub>A</sub> = +25°C	I <sub>D</sub>	6.7	A
		T <sub>A</sub> = +70°C		5.3	
	t < 10s	T <sub>A</sub> = +25°C	I <sub>D</sub>	8.7	A
		T <sub>A</sub> = +70°C		6.9	
Pulsed Drain Current (10μs Pulse, Duty Cycle = 1%)			I <sub>DM</sub>	60	A
Maximum Body Diode Continuous Current			I <sub>S</sub>	2.0	A
Avalanche Current (Note 6) L = 0.1mH			I <sub>AR</sub>	19	A
Repetitive Avalanche Energy (Note 6) L = 0.1mH			E <sub>AR</sub>	18	mJ

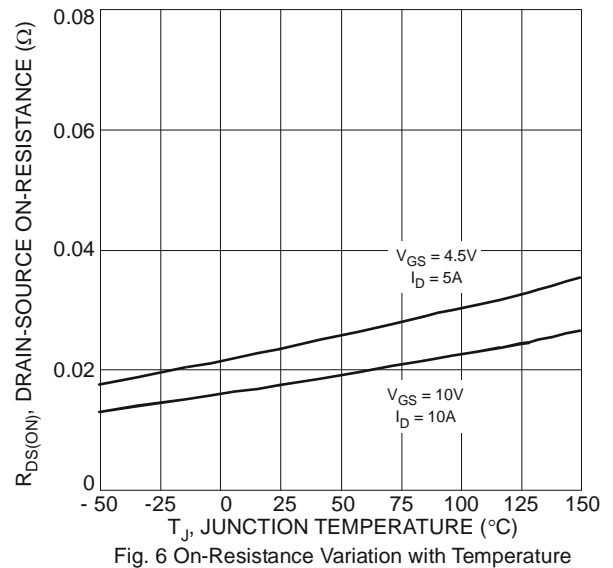
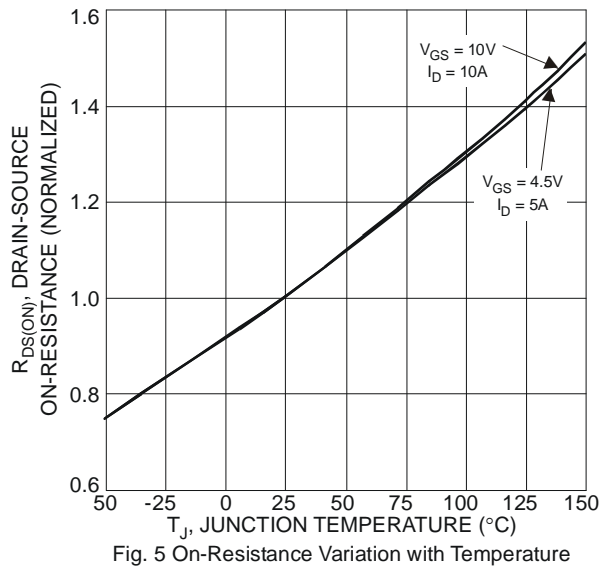
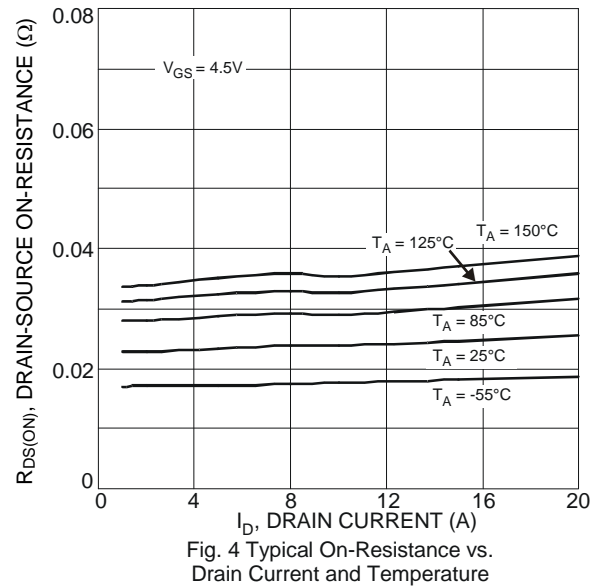
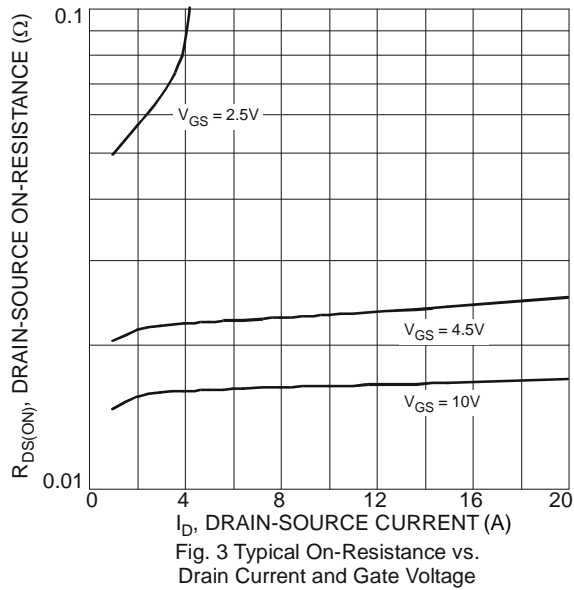
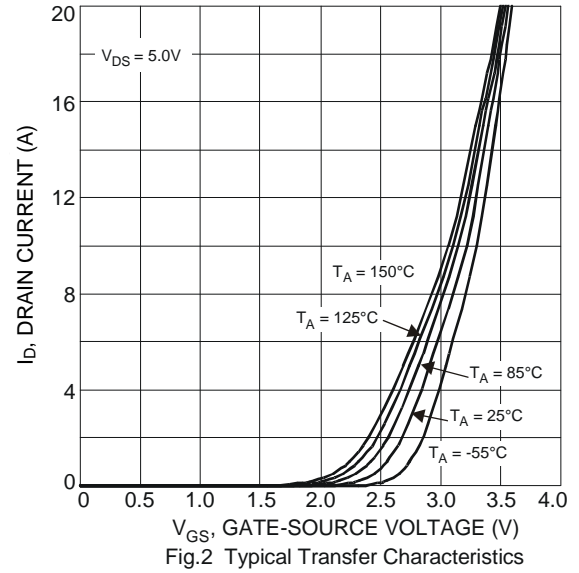
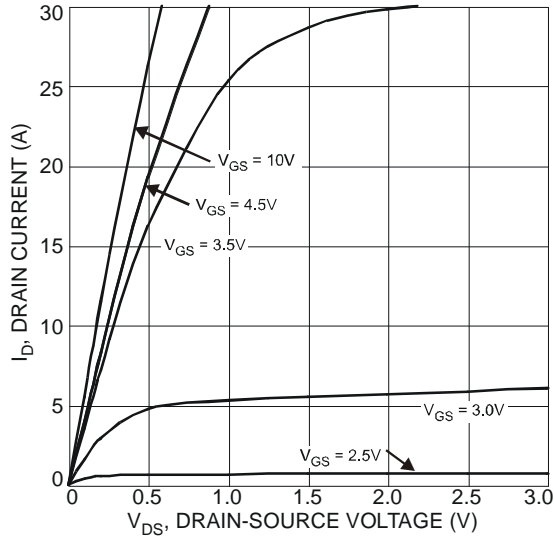
**Thermal Characteristics** (@T<sub>A</sub> = +25°C, unless otherwise specified.)

Characteristic		Symbol	Value	Unit
Total Power Dissipation (Note 5)		P <sub>D</sub>	1.5	W
Thermal Resistance, Junction to Ambient (Note 5)	Steady State	R <sub>θJA</sub>	83	°C/W
	t < 10s		50	°C/W
Thermal Resistance, Junction to Case (Note 5)		R <sub>θJC</sub>	14.5	°C/W
Operating and Storage Temperature Range		T <sub>J</sub> , T <sub>STG</sub>	-55 to +150	°C

**Electrical Characteristics** (@T<sub>A</sub> = +25°C, unless otherwise specified.)

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
<b>OFF CHARACTERISTICS (Note 7)</b>						
Drain-Source Breakdown Voltage	BV <sub>DSS</sub>	30	—	—	V	V <sub>GS</sub> = 0V, I <sub>D</sub> = 250µA
Zero Gate Voltage Drain Current	I <sub>DSS</sub>	—	—	1	µA	V <sub>DS</sub> = 24V, V <sub>GS</sub> = 0V
Gate-Source Leakage	I <sub>GSS</sub>	—	—	±10	µA	V <sub>GS</sub> = ±20V, V <sub>DS</sub> = 0V
<b>ON CHARACTERISTICS (Note 7)</b>						
Gate Threshold Voltage	V <sub>GS(TH)</sub>	1	1.7	2.1	V	V <sub>DS</sub> = V <sub>GS</sub> , I <sub>D</sub> = 250µA
Static Drain-Source On-Resistance	R <sub>DS(ON)</sub>	—	16	22	mΩ	V <sub>GS</sub> = 10V, I <sub>D</sub> = 10A
		—	23	30		V <sub>GS</sub> = 4.5V, I <sub>D</sub> = 6A
Forward Transfer Admittance	Y <sub>fs</sub>	—	8.3	—	S	V <sub>DS</sub> = 5V, I <sub>D</sub> = 6.9A
Diode Forward Voltage	V <sub>SD</sub>	0.5	—	1.2	V	V <sub>GS</sub> = 0V, I <sub>S</sub> = 1A
<b>DYNAMIC CHARACTERISTICS (Note 8)</b>						
Input Capacitance	C <sub>iss</sub>	—	697	—	pF	V <sub>DS</sub> = 15V, V <sub>GS</sub> = 0V, f = 1.0MHz
Output Capacitance	C <sub>oss</sub>	—	97	—		
Reverse Transfer Capacitance	C <sub>rss</sub>	—	67	—		
Gate Resistance	R <sub>g</sub>	—	1.47	—	Ω	V <sub>DS</sub> = 0V, V <sub>GS</sub> = 0V, f = 1.0MHz
Total Gate Charge (V <sub>GS</sub> = 4.5V)	Q <sub>g</sub>	—	6.0	—	nC	V <sub>GS</sub> = 10V, V <sub>DS</sub> = 15V, I <sub>D</sub> = 9A
Total Gate Charge (V <sub>GS</sub> = 10V)	Q <sub>g</sub>	—	13.2	—		
Gate-Source Charge	Q <sub>gs</sub>	—	2.2	—		
Gate-Drain Charge	Q <sub>gd</sub>	—	1.8	—		
Turn-On Delay Time	t <sub>D(ON)</sub>	—	4.3	—	ns	V <sub>DD</sub> = 15V, V <sub>GS</sub> = 10V, R <sub>L</sub> = 15Ω, I <sub>D</sub> = 1A, R <sub>G</sub> = 6Ω
Turn-On Rise Time	t <sub>R</sub>	—	4.4	—		
Turn-Off Delay Time	t <sub>D(OFF)</sub>	—	20.1	—		
Turn-Off Fall Time	t <sub>F</sub>	—	4.1	—		
Reverse Recovery Time	t <sub>RR</sub>	—	7.3	—	ns	I <sub>F</sub> = 9A, di/dt = 500A/µs
Reverse Recovery Charge	Q <sub>RR</sub>	—	7.9	—	nC	

- Notes: 5. Device mounted on FR-4 substrate PC board, 2oz copper, with 1inch square copper plate.  
6. I<sub>AR</sub> and E<sub>AR</sub> ratings are based on low frequency and duty cycles to keep T<sub>J</sub> = +25°C.  
7. Short duration pulse test used to minimize self-heating effect.  
8. Guaranteed by design. Not subject to product testing.



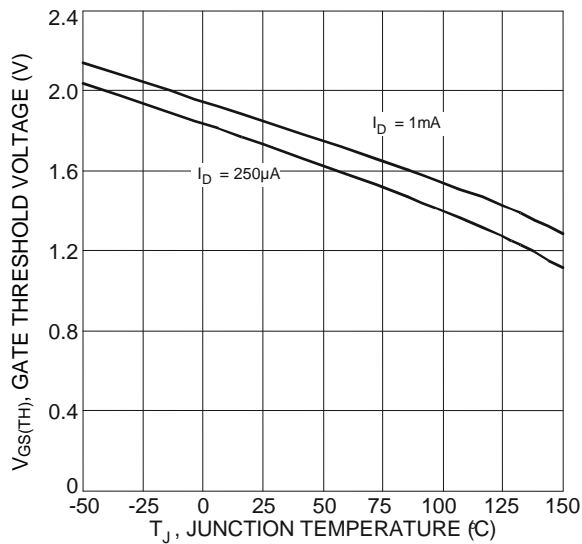


Fig. 7 Gate Threshold Variation vs. Junction Temperature

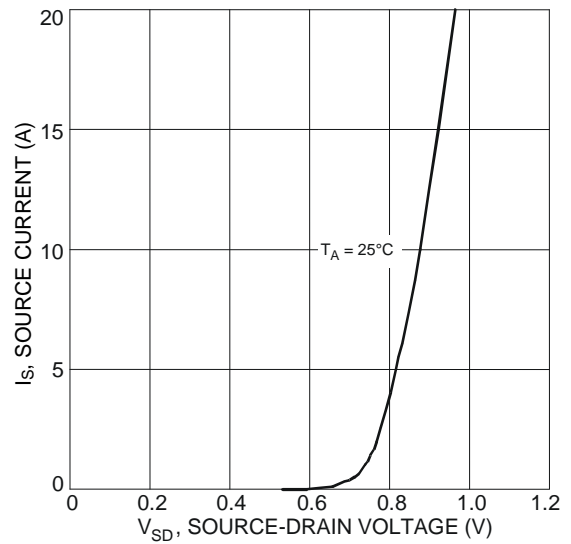


Fig. 8 Diode Forward Voltage vs. Current

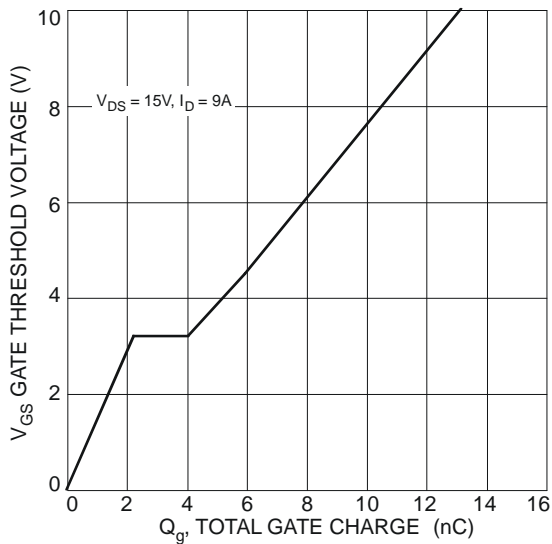


Fig. 9 Gate Charge

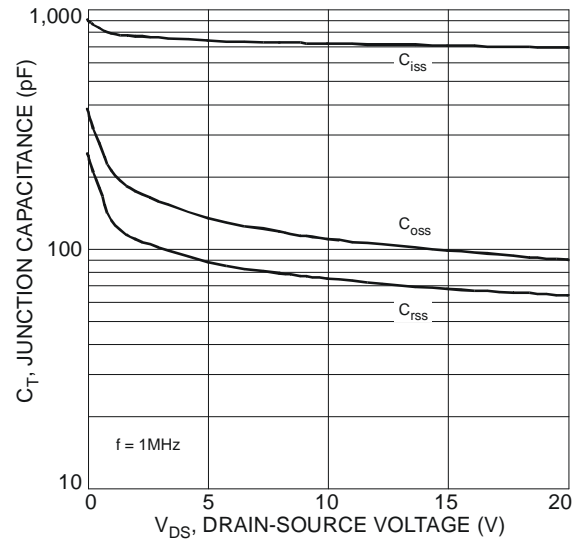


Fig. 10 Typical Junction Capacitance

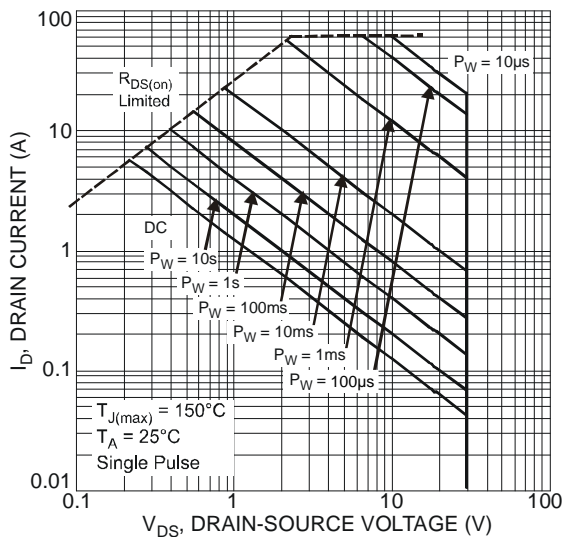
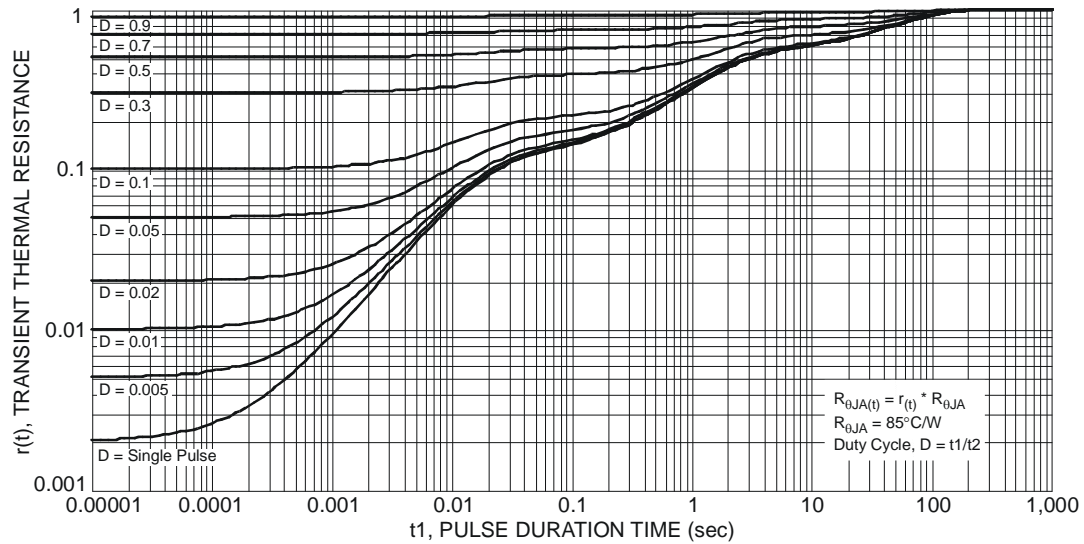
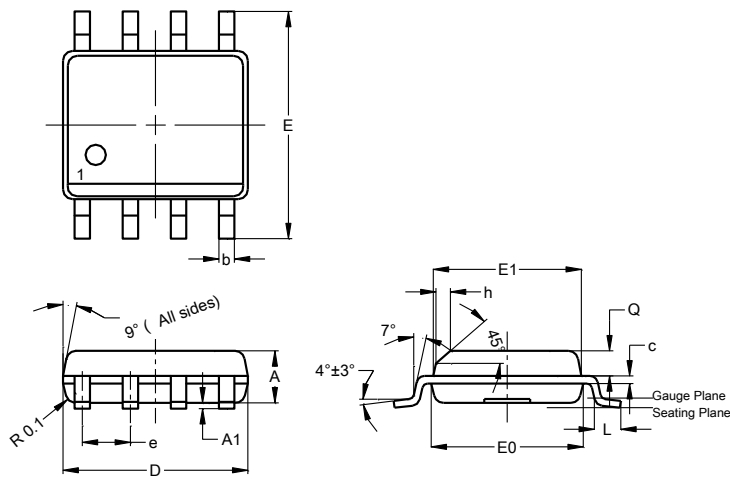


Fig. 11 SOA, Safe Operation Area



## Package Outline Dimensions

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

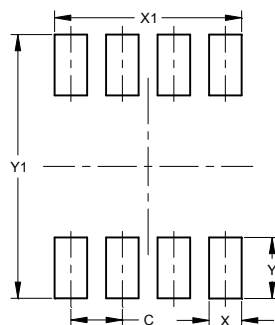


SO-8			
Dim	Min	Max	Typ
A	1.40	1.50	1.45
A1	0.10	0.20	0.15
b	0.30	0.50	0.40
c	0.15	0.25	0.20
D	4.85	4.95	4.90
E	5.90	6.10	6.00
E1	3.80	3.90	3.85
E0	3.85	3.95	3.90
e	--	--	1.27
h	-	--	0.35
L	0.62	0.82	0.72
Q	0.60	0.70	0.65

All Dimensions in mm

## Suggested Pad Layout

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



Dimensions	Value (in mm)
C	1.27
X	0.802
X1	4.612
Y	1.505
Y1	6.50

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