

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

Characteristic			Symbol	Value	Units
Drain-Source Voltage			V <sub>DSS</sub>	80	V
Gate-Source Voltage			V <sub>GSS</sub>	±20	V
Continuous Drain Current (Note 6) V <sub>GS</sub> = 10V	Steady State	T <sub>A</sub> = +25°C T <sub>A</sub> = +70°C	I <sub>D</sub>	9.7 7.8	A
	t < 10s	T <sub>A</sub> = +25°C T <sub>A</sub> = +70°C	I <sub>D</sub>	11.6 9.3	A
Maximum Continuous Body Diode Forward Current (Note 6)			I <sub>S</sub>	3	A
Pulsed Drain Current (10µs Pulse, Duty Cycle = 1%)			I <sub>DM</sub>	80	A
Avalanche Current, L=0.1mH			I <sub>AS</sub>	11.6	A
Avalanche Energy, L=0.1mH			E <sub>AS</sub>	10.2	mJ

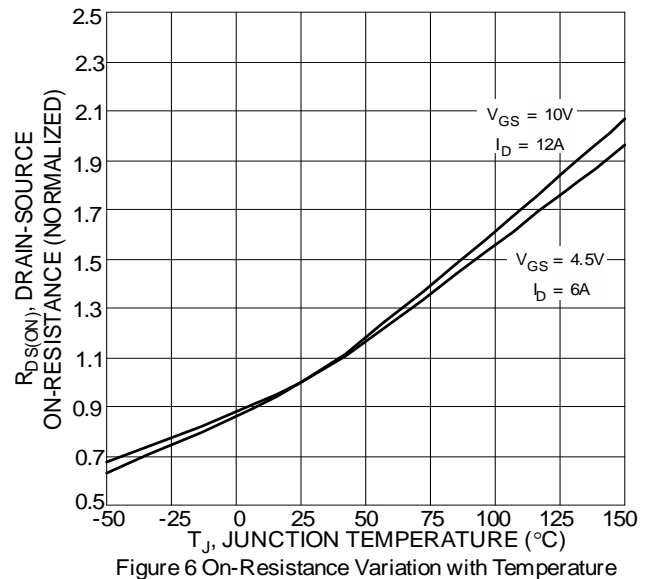
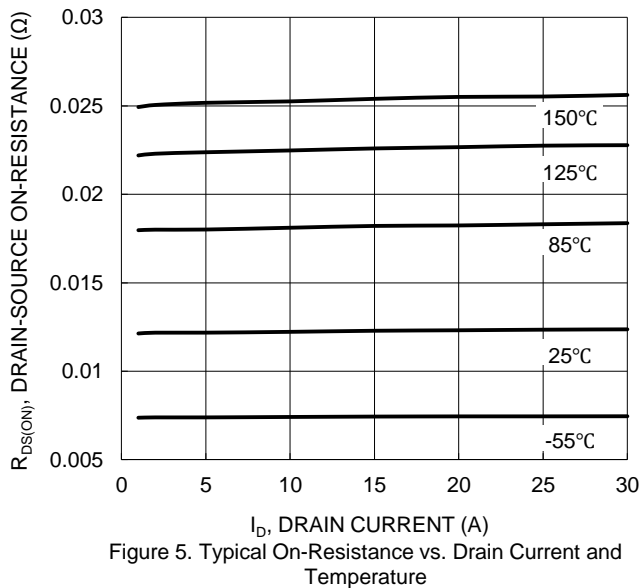
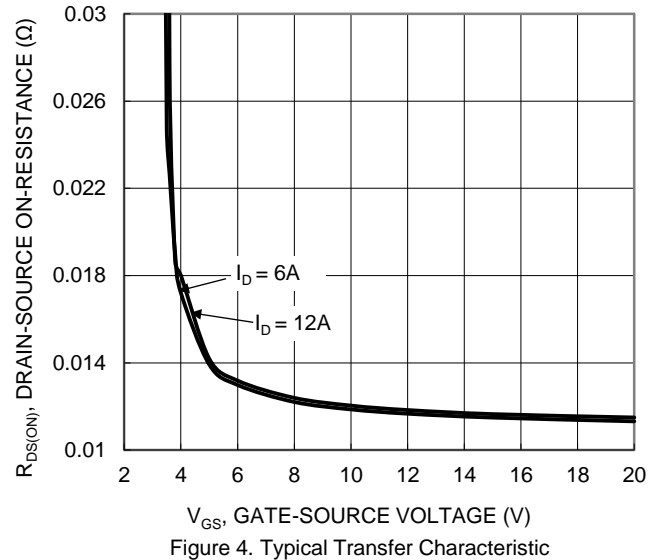
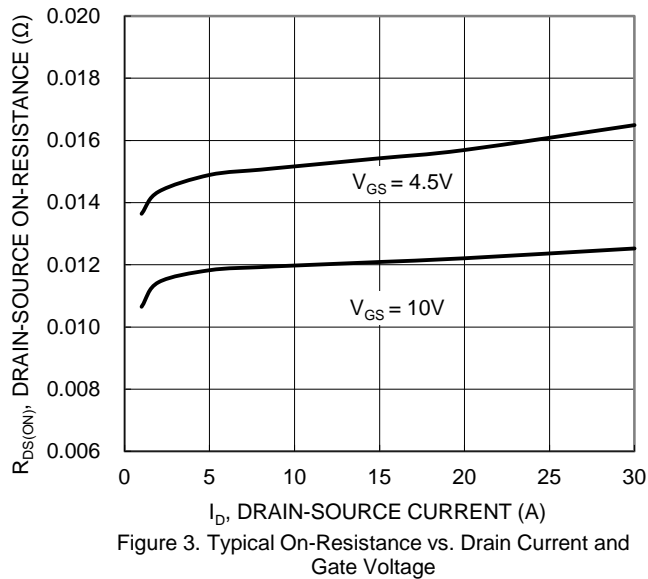
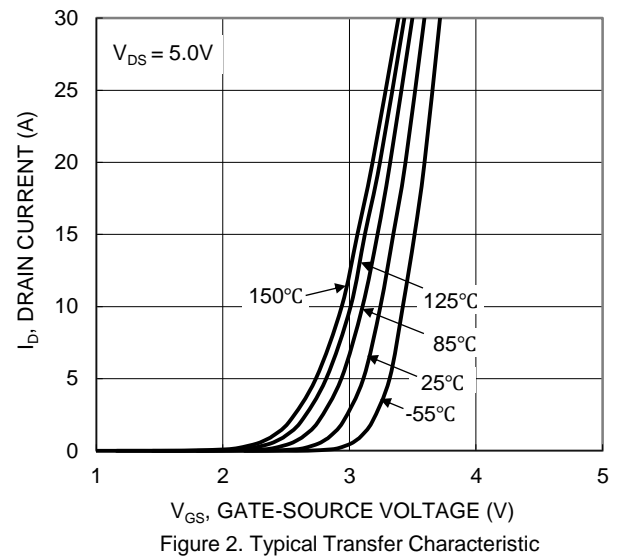
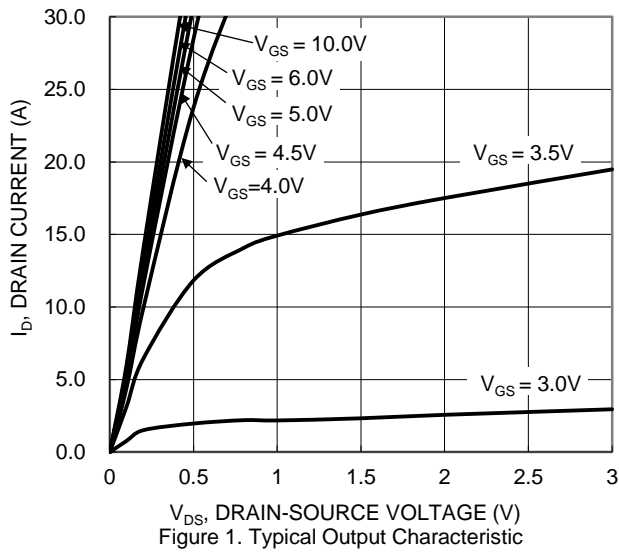
**Thermal Characteristics** (@T<sub>A</sub> = +25°C, unless otherwise specified.)

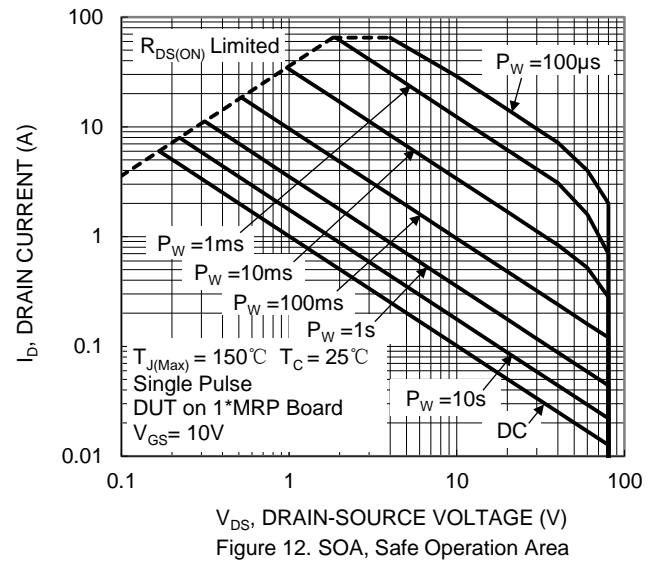
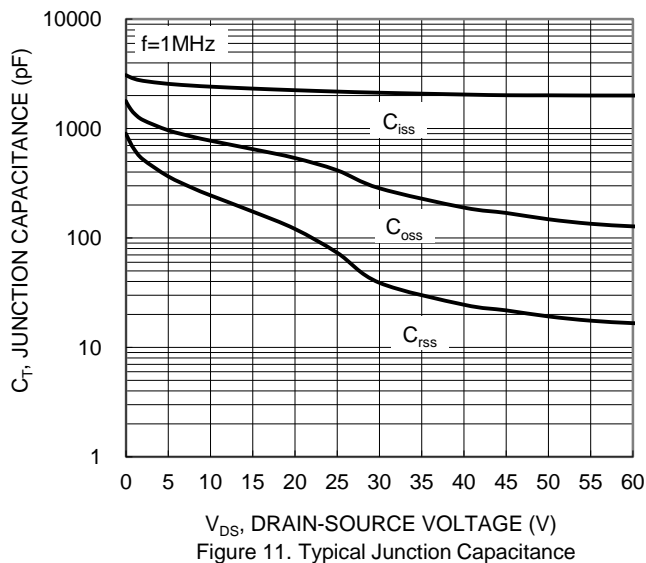
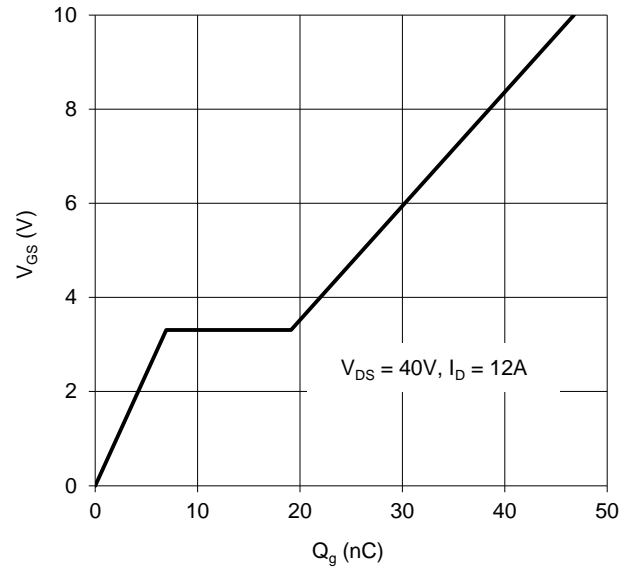
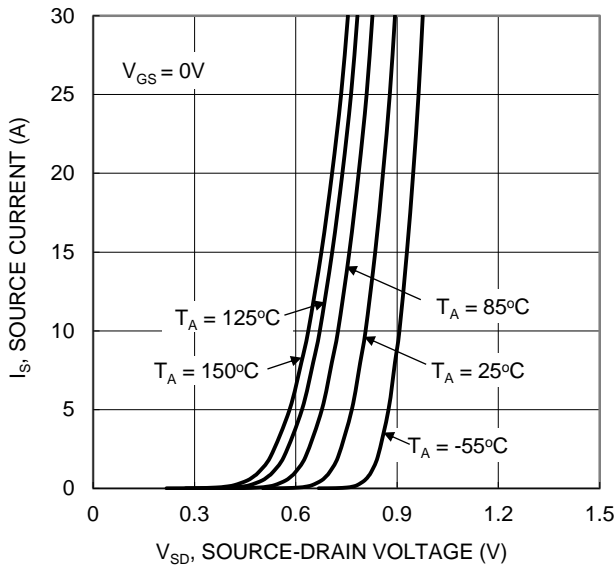
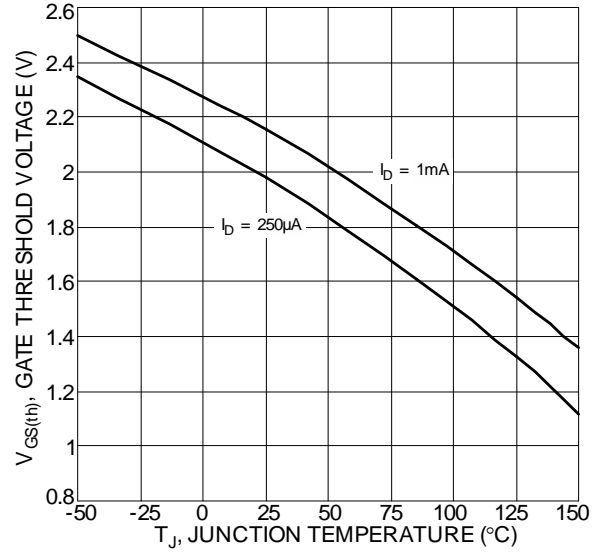
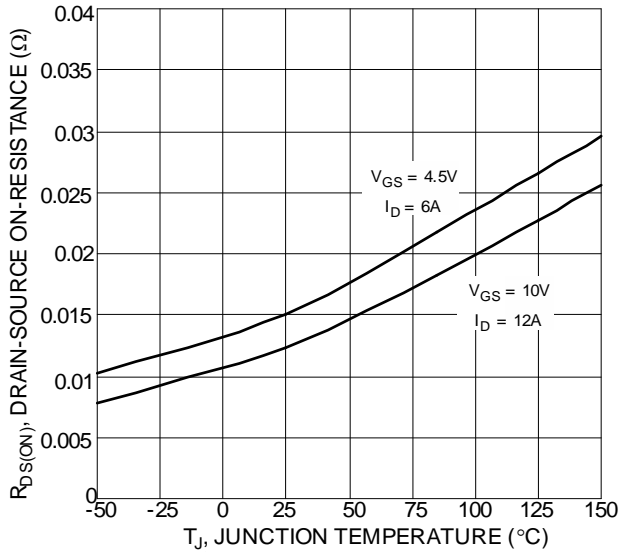
Characteristic			Symbol	Value	Units
Total Power Dissipation (Note 5)			P <sub>D</sub>	1.5	W
Thermal Resistance, Junction to Ambient (Note 5)	Steady State		R <sub>θJA</sub>	80	°C/W
	t < 10s			48	°C/W
Total Power Dissipation (Note 6)			P <sub>D</sub>	2	W
Thermal Resistance, Junction to Ambient (Note 6)	Steady State		R <sub>θJA</sub>	53	°C/W
	t < 10s			37	°C/W
Thermal Resistance, Junction to Case (Note 6)			R <sub>θJC</sub>	6.5	°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</b> (Note 7)						
Drain-Source Breakdown Voltage	BV <sub>DSS</sub>	80	—	—	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> = 64V, V <sub>GS</sub> = 0V
Gate-Source Leakage	I <sub>GSS</sub>	—	—	±100	nA	V <sub>GS</sub> = ±20V, V <sub>DS</sub> = 0V
<b>ON CHARACTERISTICS</b> (Note 7)						
Gate Threshold Voltage	V <sub>GS(TH)</sub>	1	—	3	V	V <sub>DS</sub> = V <sub>GS</sub> , I <sub>D</sub> = 250µA
Static Drain-Source On-Resistance	R <sub>DS(ON)</sub>	—	12.7	16.5	mΩ	V <sub>GS</sub> = 10V, I <sub>D</sub> = 12A
		—	15	20		V <sub>GS</sub> = 4.5V, I <sub>D</sub> = 6A
Diode Forward Voltage	V <sub>SD</sub>	—	0.9	1.2	V	V <sub>GS</sub> = 0V, I <sub>S</sub> = 20A
<b>DYNAMIC CHARACTERISTICS</b> (Note 8)						
Input Capacitance	C <sub>ISS</sub>	—	1,949	—	pF	V <sub>DS</sub> = 40V, V <sub>GS</sub> = 0V, f = 1MHz
Output Capacitance	C <sub>OSS</sub>	—	177	—		
Reverse Transfer Capacitance	C <sub>RSS</sub>	—	10	—		
Gate Resistance	R <sub>G</sub>	—	0.7	—	Ω	V <sub>DS</sub> = 0V, V <sub>GS</sub> = 0V, f = 1MHz
Total Gate Charge (V <sub>GS</sub> = 4.5V)	Q <sub>G</sub>	—	15	—	nC	V <sub>DS</sub> = 40V, I <sub>D</sub> = 12A
Total Gate Charge (V <sub>GS</sub> = 10V)	Q <sub>G</sub>	—	34	—		
Gate-Source Charge	Q <sub>GS</sub>	—	6	—		
Gate-Drain Charge	Q <sub>GD</sub>	—	4.5	—		
Turn-On Delay Time	t <sub>D(ON)</sub>	—	4.9	—	ns	V <sub>DD</sub> = 40V, V <sub>GS</sub> = 10V, I <sub>D</sub> = 12A, R <sub>G</sub> = 1.6Ω
Turn-On Rise Time	t <sub>R</sub>	—	3.8	—		
Turn-Off Delay Time	t <sub>D(OFF)</sub>	—	16.5	—		
Turn-Off Fall Time	t <sub>F</sub>	—	3.5	—		

- Notes:
5. Device mounted on FR-4 substrate PC board, 2oz. copper, with minimum recommended pad layout.
  6. Device mounted on FR-4 substrate PC board, 2oz. copper, with 1-inch square copper plate.
  7. Short duration pulse test used to minimize self-heating effect.
  8. Guaranteed by design. Not subject to product testing.





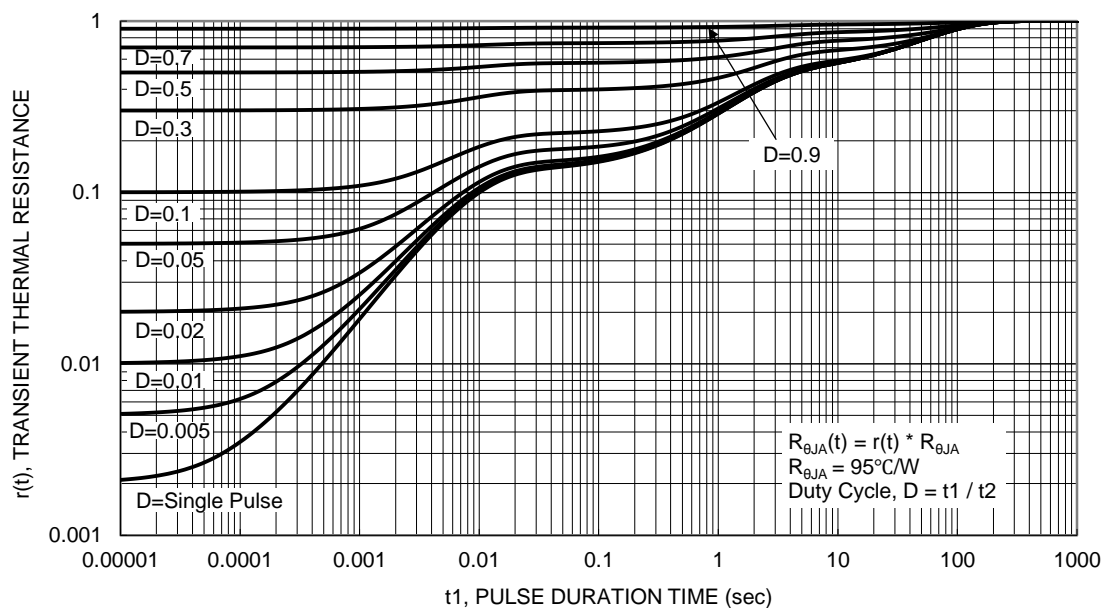
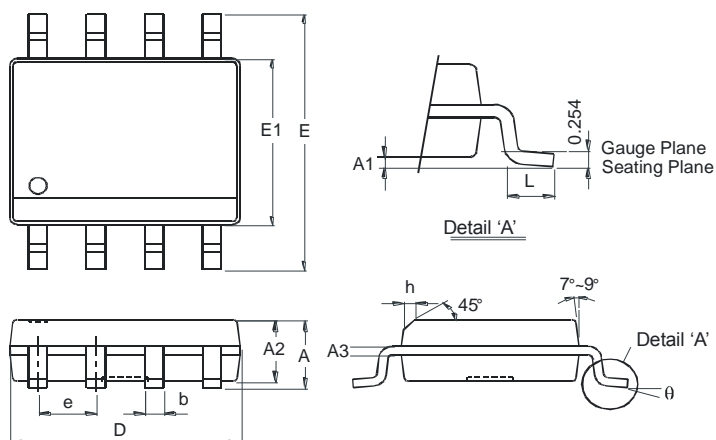


Figure 13. Transient Thermal Resistance

## Package Outline Dimensions

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

SO-8

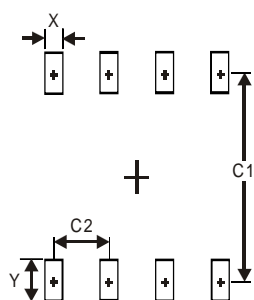


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Dim	Min	Max
A	–	1.75
A1	0.10	0.20
A2	1.30	1.50
A3	0.15	0.25
b	0.3	0.5
D	4.85	4.95
E	5.90	6.10
E1	3.85	3.95
e	1.27 Typ	
h	–	0.35
L	0.62	0.82
θ	0°	8°
All Dimensions in mm		

## Suggested Pad Layout

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

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

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