

**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>	±25	V
Drain Current (Note 5)	Steady State	T <sub>A</sub> = +25°C	I <sub>D</sub>	-12	A
		T <sub>A</sub> = +70°C		-9	
Pulsed Drain Current (Note 6)			I <sub>DM</sub>	-80	A

**Thermal Characteristics**

Characteristic	Symbol	Value	Unit
Total Power Dissipation (Note 5)	P <sub>D</sub>	2.5	W
Thermal Resistance, Junction to Ambient	R <sub>θJA</sub>	50	°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
OFF CHARACTERISTICS (Note 7)						
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> = -30V, V <sub>GS</sub> = 0V
Gate-Source Leakage	I <sub>GSS</sub>	—	—	±100	nA	V <sub>GS</sub> = ±20V, V <sub>DS</sub> = 0V
		—	—	±800		V <sub>GS</sub> = ±25V, V <sub>DS</sub> = 0V
ON CHARACTERISTICS (Note 7)						
Gate Threshold Voltage	V <sub>GS(TH)</sub>	-1	—	-2	V	V <sub>DS</sub> = V <sub>GS</sub> , I <sub>D</sub> = -250μA
Static Drain-Source On-Resistance	R <sub>DS(ON)</sub>	—	11.6	14	mΩ	V <sub>GS</sub> = -10V, I <sub>D</sub> = -8A
		—	18.6	25		V <sub>GS</sub> = -4.5V, I <sub>D</sub> = -5A
Forward Transconductance	g <sub>fs</sub>	—	12	—	S	V <sub>DS</sub> = -10V, I <sub>D</sub> = -12A
Diode Forward Voltage (Note 7)	V <sub>SD</sub>	-0.5	—	-1.1	V	V <sub>GS</sub> = 0V, I <sub>S</sub> = -2A
DYNAMIC CHARACTERISTICS						
Input Capacitance	C <sub>iSS</sub>	—	1802	—	pF	V <sub>DS</sub> = -15V, V <sub>GS</sub> = 0V, f = 1.0MHz
Output Capacitance	C <sub>oSS</sub>	—	415	—	pF	
Reverse Transfer Capacitance	C <sub>rSS</sub>	—	295	—	pF	
Gate Resistance	R <sub>G</sub>	—	2.3	—	Ω	V <sub>GS</sub> = 0V, V <sub>DS</sub> = 0V, f = 1MHz
SWITCHING CHARACTERISTICS						
Total Gate Charge	Q <sub>g</sub>	—	15.3 30.7	—	nC	V <sub>DS</sub> = -15V, V <sub>GS</sub> = -4.5V, I <sub>D</sub> = -8A
Gate-Source Charge	Q <sub>gs</sub>	—	3.5	—		V <sub>DS</sub> = -15V, V <sub>GS</sub> = -10V, I <sub>D</sub> = -8A
Gate-Drain Charge	Q <sub>gd</sub>	—	7.9	—		V <sub>DS</sub> = -15V, V <sub>GS</sub> = -10V, I <sub>D</sub> = -8A
Turn-On Delay Time	t <sub>D(ON)</sub>	—	5.1	—	ns	V <sub>GS</sub> = -10V, V <sub>DS</sub> = -15V, R <sub>D</sub> = 15Ω, R <sub>G</sub> = 6Ω
Rise Time	t <sub>R</sub>	—	8	—		
Turn-Off Delay Time	t <sub>D(OFF)</sub>	—	46	—		
Fall Time	t <sub>F</sub>	—	30	—		

- Notes:
- Device mounted on 2 oz. copper pads on FR-4 PCB with R<sub>θJA</sub> = 50°C/W.
  - Pulse width ≤10μs, Duty Cycle ≤1%.
  - Short duration pulse test used to minimize self-heating effect.

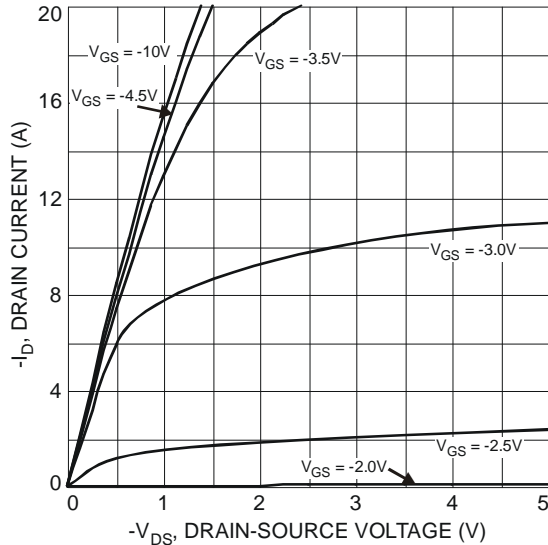


Fig. 1 Typical Output Characteristic

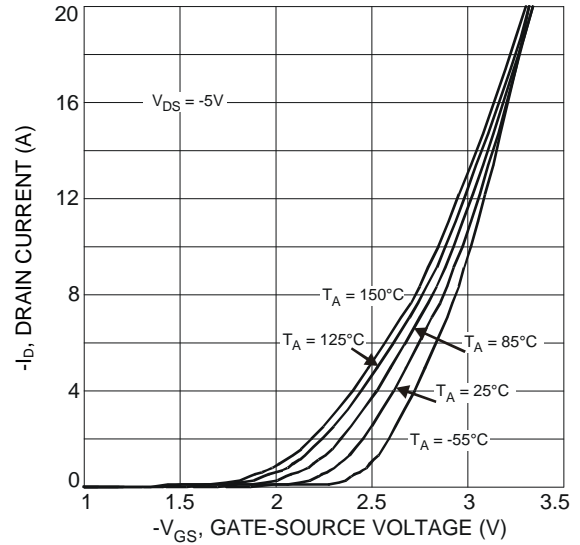


Fig. 2 Typical Transfer Characteristic

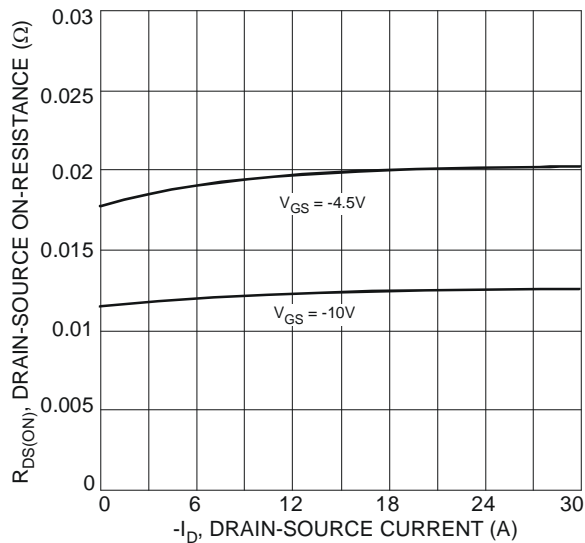


Fig. 3 Typical On-Resistance vs. Drain Current and Gate Voltage

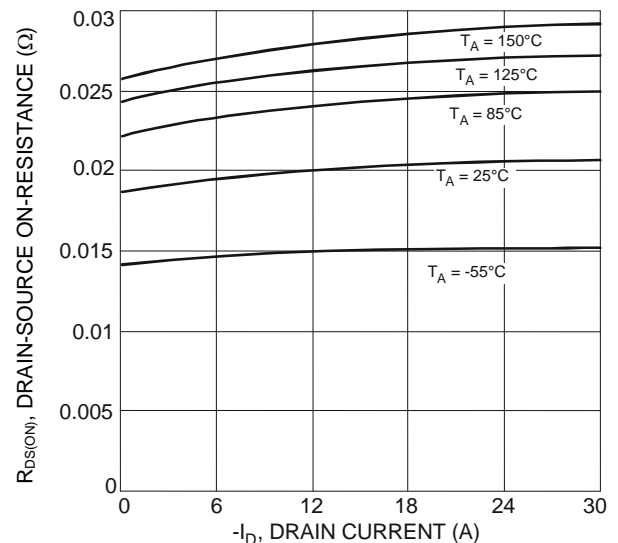


Fig. 4 Typical On-Resistance vs. Drain Current and Temperature

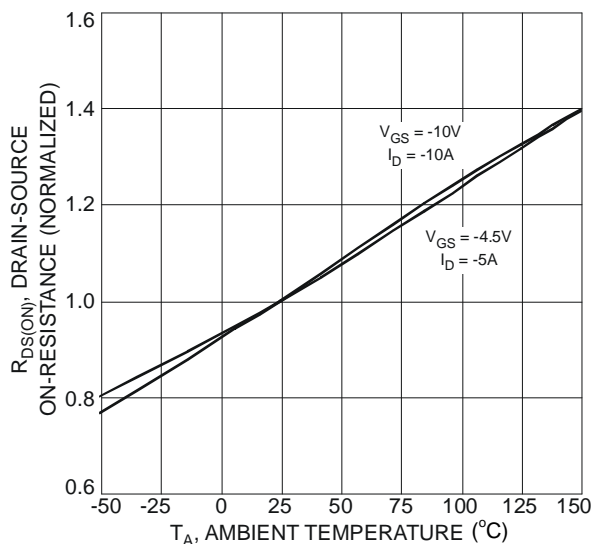


Fig. 5 Normalized On-Resistance vs. Ambient Temperature

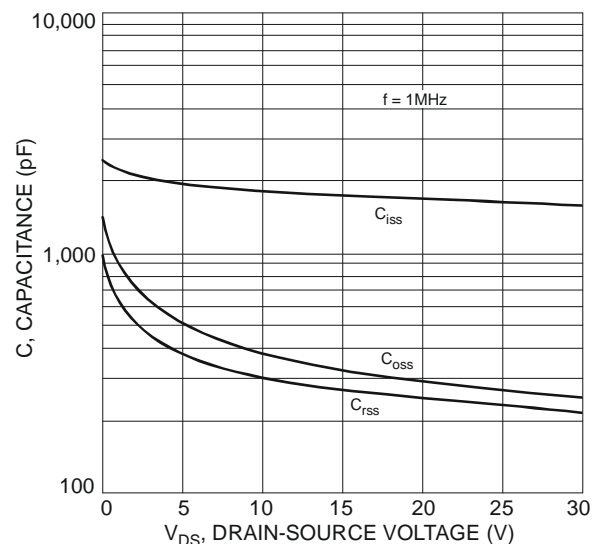


Fig. 6 Typical Total Capacitance

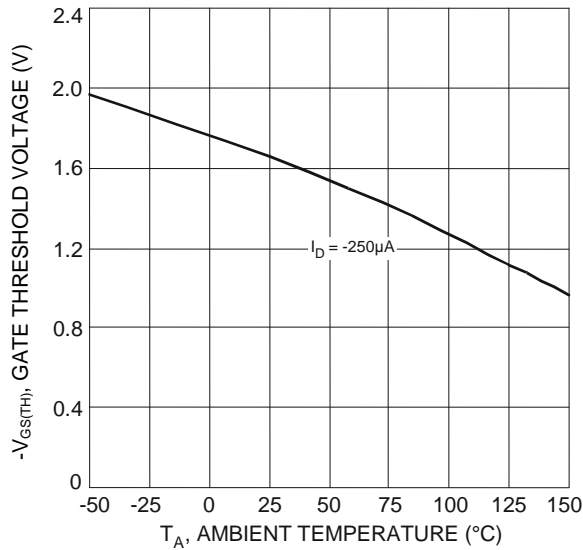


Fig. 7 Gate Threshold Variation vs. Ambient Temperature

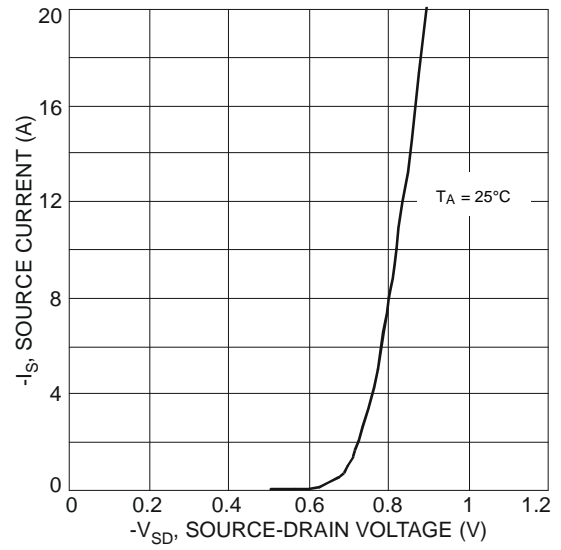


Fig. 8 Diode Forward Voltage vs. Current

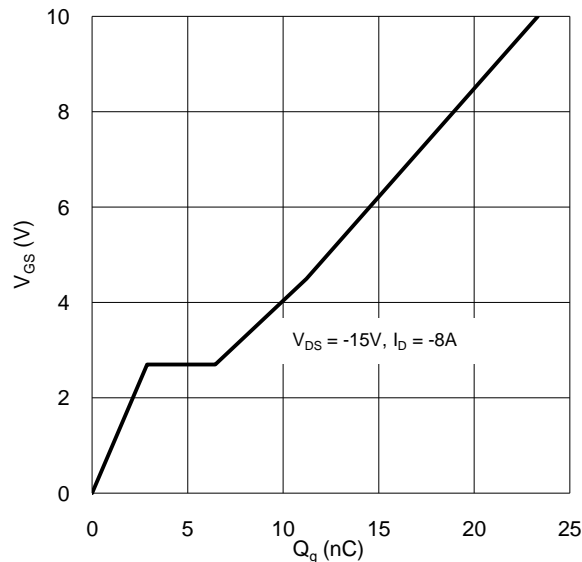


Fig. 9 Gate Charge

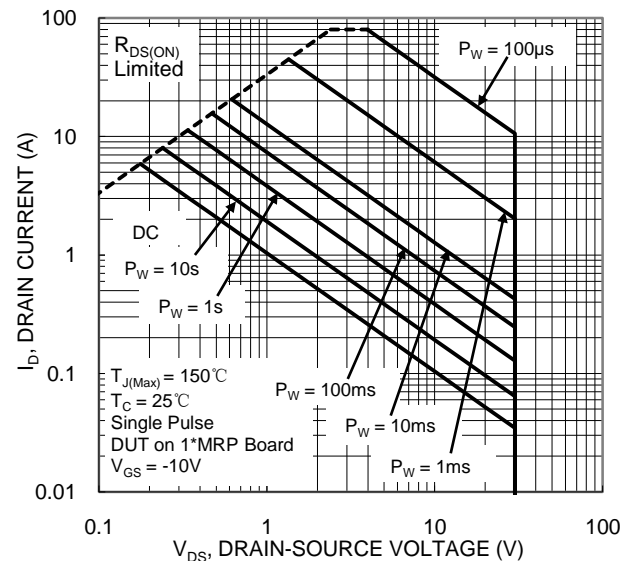


Fig. 10 SOA, Safe Operation Area

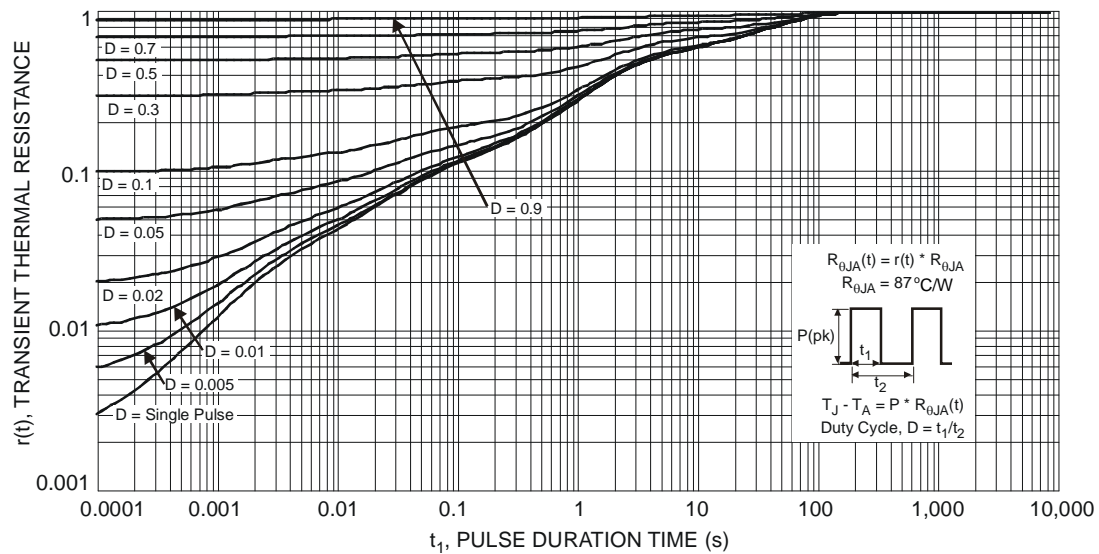
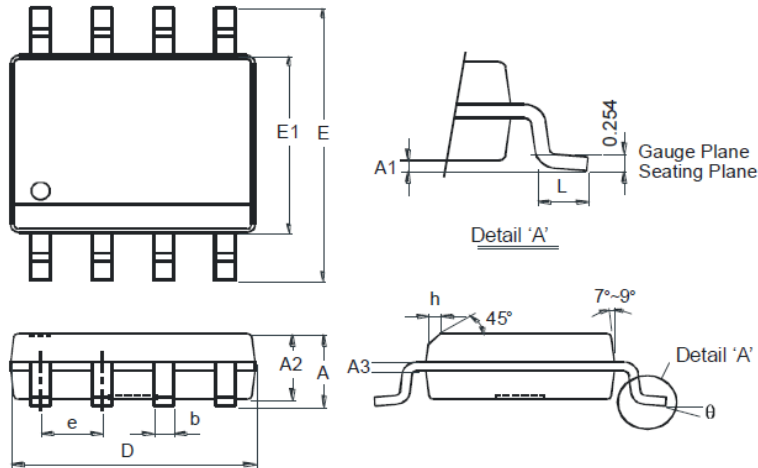


Fig. 11 Transient Thermal Response

## Package Outline Dimensions

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

### SO-8

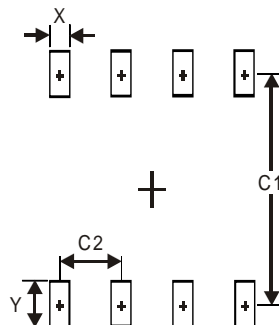


SO-8		
Dim	Min	Max
A	-	1.75
A1	0.10	0.20
A2	1.30	1.50
A3	0.15	0.25
b	0.3	0.5
D	4.85	4.95
E	5.90	6.10
E1	3.85	3.95
e	1.27 Typ	
h	-	0.35
L	0.62	0.82
θ	0°	8°
All Dimensions in mm		

## Suggested Pad Layout

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

### SO-8



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

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