

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

Characteristic			Symbol	Value	Units
Drain-Source Voltage			V <sub>DSS</sub>	30	V
Gate-Source Voltage			V <sub>GSS</sub>	±12	V
Continuous Drain Current (Note 5) V <sub>GS</sub> = 4.5V	Steady State	T <sub>A</sub> = +25°C	I <sub>D</sub>	1.5	A
		T <sub>A</sub> = +70°C		1.2	
Continuous Drain Current (Note 6) V <sub>GS</sub> = 4.5V	Steady State	T <sub>A</sub> = +25°C	I <sub>D</sub>	2.0	A
		T <sub>A</sub> = +70°C		1.6	
Pulsed Drain Current (10μs pulse, duty cycle = 1%)			I <sub>DM</sub>	8	A
Maximum Body Diode Continuous Current (Note 6)			I <sub>S</sub>	1.6	A

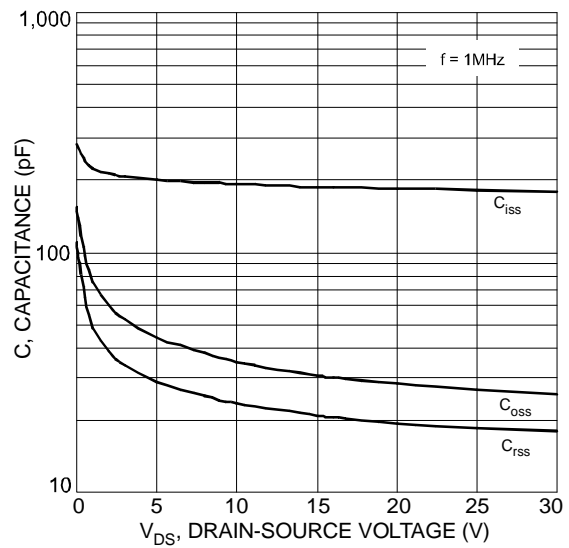
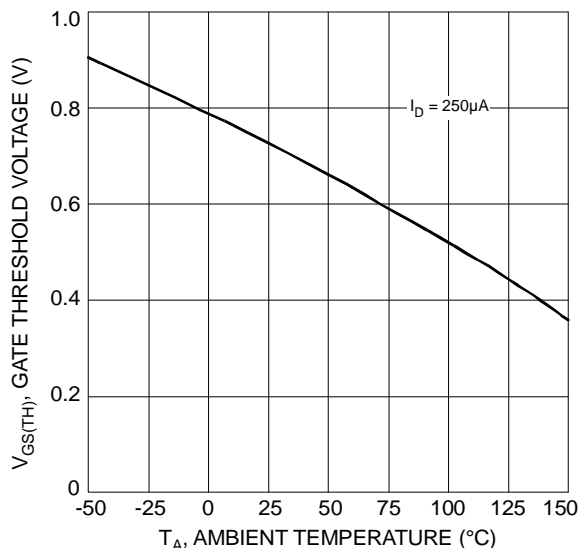
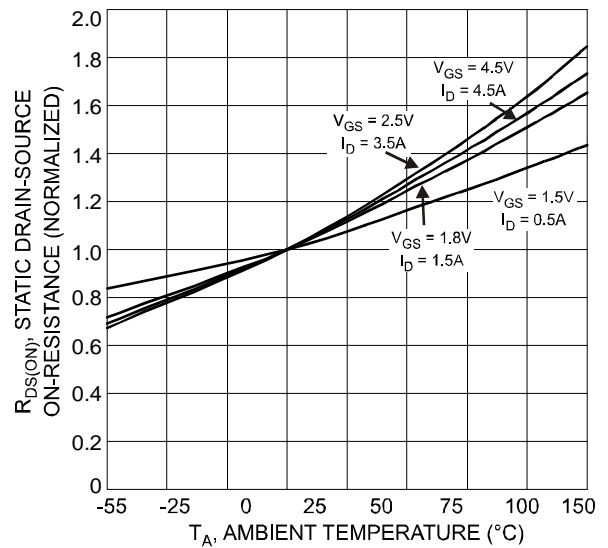
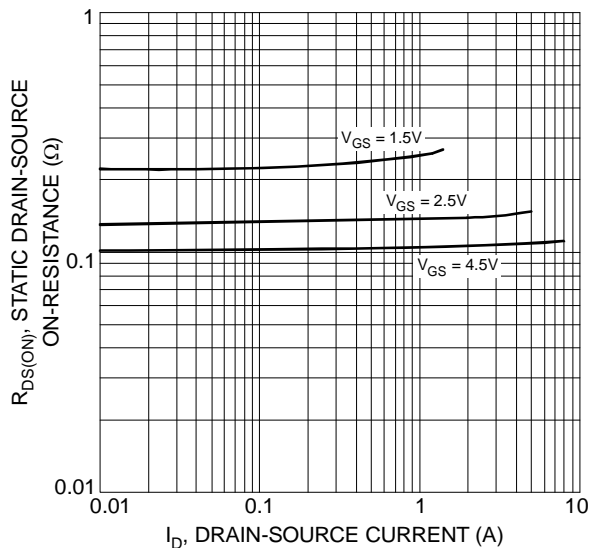
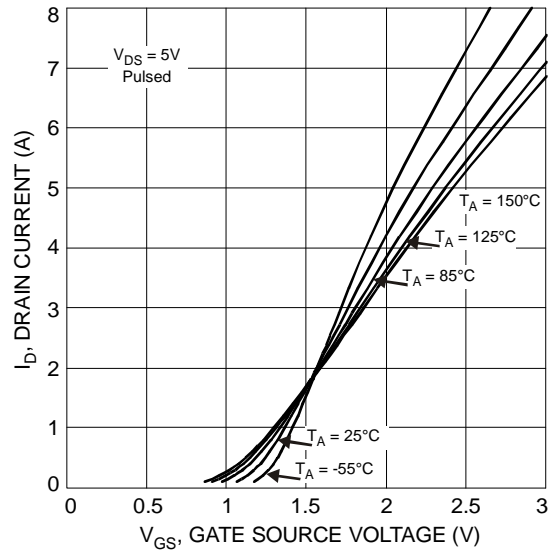
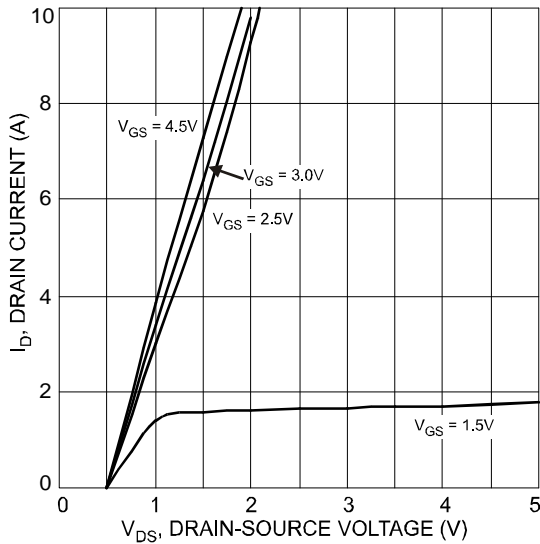
**Thermal Characteristics**

Characteristic		Symbol	Value	Units
Total Power Dissipation	(Note 5)	P <sub>D</sub>	0.7	W
	(Note 6)		1.3	
Thermal Resistance, Junction to Ambient	(Note 5)	R <sub>θJA</sub>	176	°C/W
	(Note 6)		102	
Thermal Resistance, Junction to Case	(Note 6)	R <sub>θJC</sub>	45	°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	37	—	V	V <sub>GS</sub> = 0V, I <sub>D</sub> = 100μA
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>	—	—	±10	μA	V <sub>GS</sub> = ±12V, V <sub>DS</sub> = 0V
<b>ON CHARACTERISTICS (Note 7)</b>						
Gate Threshold Voltage	V <sub>GS(th)</sub>	0.5	—	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>	—	100	150	mΩ	V <sub>GS</sub> = 4.5V, I <sub>D</sub> = 4.5A
			140	200		V <sub>GS</sub> = 2.5V, I <sub>D</sub> = 3.5A
			185	250		V <sub>GS</sub> = 1.8V, I <sub>D</sub> = 1.5A
			240	300		V <sub>GS</sub> = 1.5V, I <sub>D</sub> = 0.5A
			—	—		V <sub>GS</sub> = 1.5V, I <sub>D</sub> = 0.5A
Forward Transfer Admittance	Y <sub>fs</sub>	—	5	—	S	V <sub>DS</sub> = 5V, I <sub>D</sub> = 2.4A
Diode Forward Voltage	V <sub>SD</sub>	—	0.8	1.1	V	V <sub>GS</sub> = 0V, I = 0.5A
<b>DYNAMIC CHARACTERISTICS (Note 8)</b>						
Input Capacitance	C <sub>iss</sub>	—	193	—	pF	V <sub>DS</sub> = 10V, V <sub>GS</sub> = 0V f = 1.0MHz
Output Capacitance	C <sub>oss</sub>	—	35	—	pF	
Reverse Transfer Capacitance	C <sub>rss</sub>	—	23	—	pF	
Turn-On Delay Time	t <sub>d(on)</sub>	—	7	—	ns	V <sub>DD</sub> = 10V, R <sub>L</sub> = 10Ω I <sub>D</sub> = 1A, V <sub>GEN</sub> = 4.5V, R <sub>G</sub> = 6Ω
Rise Time	t <sub>r</sub>	—	24	—		
Turn-Off Delay Time	t <sub>d(off)</sub>	—	24	—		
Fall Time	t <sub>f</sub>	—	12	—		

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



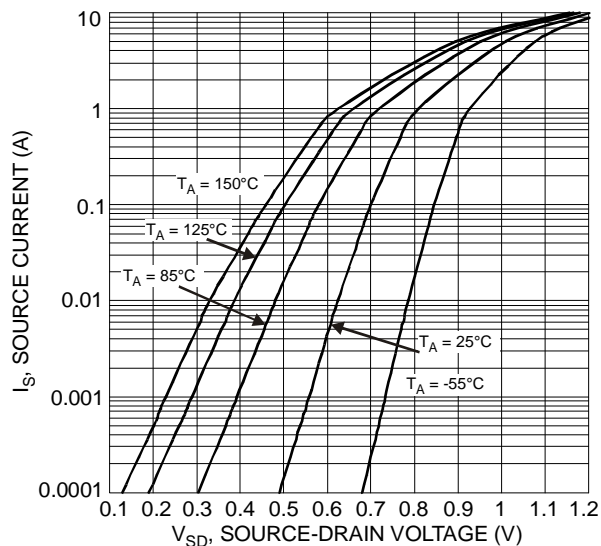


Fig. 7 Reverse Drain Current vs. Source-Drain Voltage

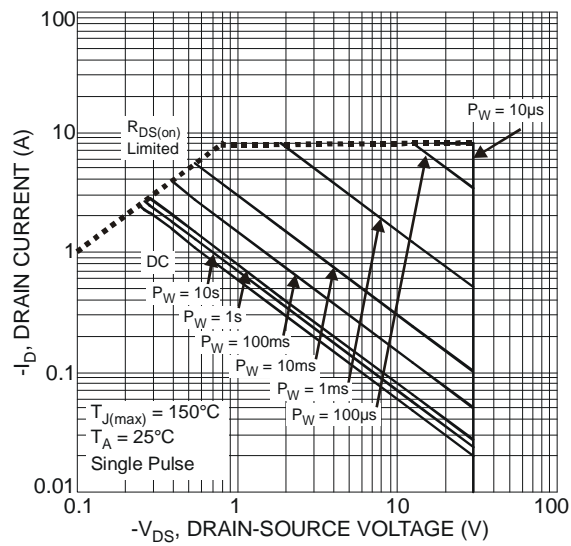


Fig. 8 SOA, Safe Operation Area

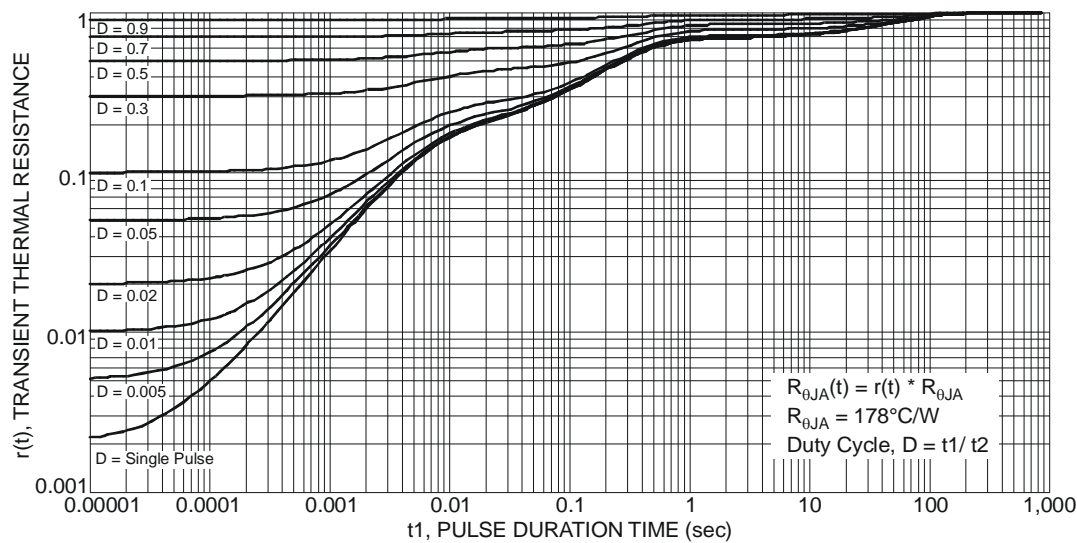
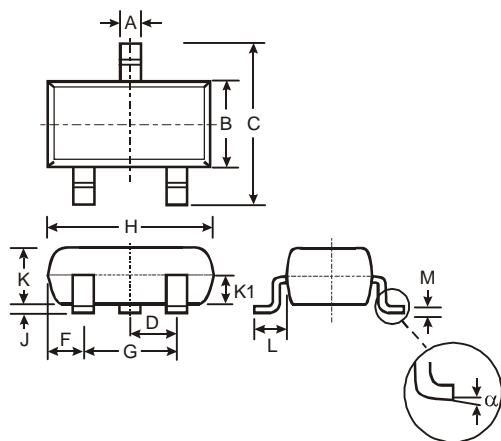


Fig. 9 Transient Thermal Resistance

## Package Outline Dimensions

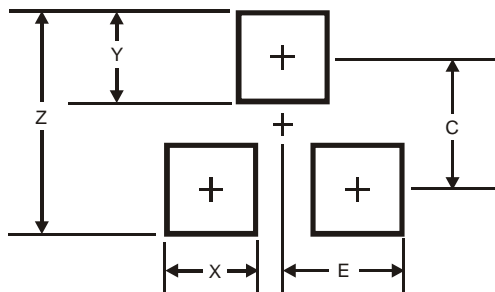
Please see AP02002 at <http://www.diodes.com/datasheets/ap02002.pdf> for latest version.



SOT23			
Dim	Min	Max	Typ
A	0.37	0.51	0.40
B	1.20	1.40	1.30
C	2.30	2.50	2.40
D	0.89	1.03	0.915
F	0.45	0.60	0.535
G	1.78	2.05	1.83
H	2.80	3.00	2.90
J	0.013	0.10	0.05
K	0.903	1.10	1.00
K1	-	-	0.400
L	0.45	0.61	0.55
M	0.085	0.18	0.11
α	0°	8°	-
All Dimensions in mm			

## Suggested Pad Layout

Please see AP02001 at <http://www.diodes.com/datasheets/ap02001.pdf> for the latest version.



Dimensions	Value (in mm)
Z	2.9
X	0.8
Y	0.9
C	2.0
E	1.35

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