

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

Characteristic			Symbol	Value	Unit
Drain-Source Voltage			V <sub>DSS</sub>	-20	V
Gate-Source Voltage			V <sub>GSS</sub>	±6	V
Continuous Drain Current (Note 5)	Steady State	T <sub>A</sub> = +25°C	I <sub>D</sub>	-0.82	A
		T <sub>A</sub> = +85°C		-0.54	
Pulsed Drain Current (Note 6)			I <sub>DM</sub>	-6	A

**Thermal Characteristics**

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 5)	P <sub>D</sub>	0.31	W
Thermal Resistance, Junction to Ambient @T <sub>A</sub> = +25°C (Note 5)	R <sub>θJA</sub>	398	°C/W
Operating and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-55 to +150	°C

Notes: 5. Device mounted on FR-4 PCB, with minimum recommended pad layout.  
6. Repetitive rating, pulse width limited by junction temperature.

**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>	-20	-	-	V	V <sub>GS</sub> = 0V, I <sub>D</sub> = -250μA
Zero Gate Voltage Drain Current T <sub>J</sub> = +25°C	I <sub>DSS</sub>	-	-	-100	nA	V <sub>DS</sub> = -20V, V <sub>GS</sub> = 0V
Gate-Source Leakage	I <sub>GSS</sub>	-	-	±2.0	μA	V <sub>GS</sub> = ±4.5V, V <sub>DS</sub> = 0V
<b>ON CHARACTERISTICS (Note 7)</b>						
Gate Threshold Voltage	V <sub>GS(th)</sub>	-0.5	-	-1.0	V	V <sub>DS</sub> = V <sub>GS</sub> , I <sub>D</sub> = -250μA
Static Drain-Source On-Resistance	R <sub>DS(on)</sub>	-	0.5	0.75	Ω	V <sub>GS</sub> = -4.5V, I <sub>D</sub> = -430mA
			0.7	1.05		V <sub>GS</sub> = -2.5V, I <sub>D</sub> = -300mA
			1.0	1.5		V <sub>GS</sub> = -1.8V, I <sub>D</sub> = -150mA
Forward Transfer Admittance	Y <sub>fs</sub>	-	0.9	-	S	V <sub>DS</sub> = -10V, I <sub>D</sub> = -250mA
Diode Forward Voltage	V <sub>SD</sub>	-	-0.8	-1.2	V	V <sub>GS</sub> = 0V, I <sub>S</sub> = -150mA
<b>DYNAMIC CHARACTERISTICS (Note 8)</b>						
Input Capacitance	C <sub>iss</sub>	-	59.76	-	pF	V <sub>DS</sub> = -16V, V <sub>GS</sub> = 0V, f = 1.0MHz
Output Capacitance	C <sub>oss</sub>	-	12.07	-	pF	
Reverse Transfer Capacitance	C <sub>rss</sub>	-	6.36	-	pF	
Total Gate Charge	Q <sub>g</sub>	-	622.4	-	pC	V <sub>GS</sub> = -4.5V, V <sub>DS</sub> = -10V, I <sub>D</sub> = -250mA
Gate-Source Charge	Q <sub>gs</sub>	-	100.3	-	pC	
Gate-Drain Charge	Q <sub>gd</sub>	-	132.2	-	pC	
Turn-On Delay Time	t <sub>D(on)</sub>	-	5.1	-	ns	V <sub>DD</sub> = -10V, V <sub>GS</sub> = -4.5V, R <sub>L</sub> = 47Ω, R <sub>G</sub> = 10Ω, I <sub>D</sub> = -200mA
Turn-On Rise Time	t <sub>r</sub>	-	8.1	-	ns	
Turn-Off Delay Time	t <sub>D(off)</sub>	-	28.4	-	ns	
Turn-Off Fall Time	t <sub>f</sub>	-	20.7	-	ns	

Notes: 7. Short duration pulse test used to minimize self-heating effect.  
8. Guaranteed by design. Not subject to production testing.

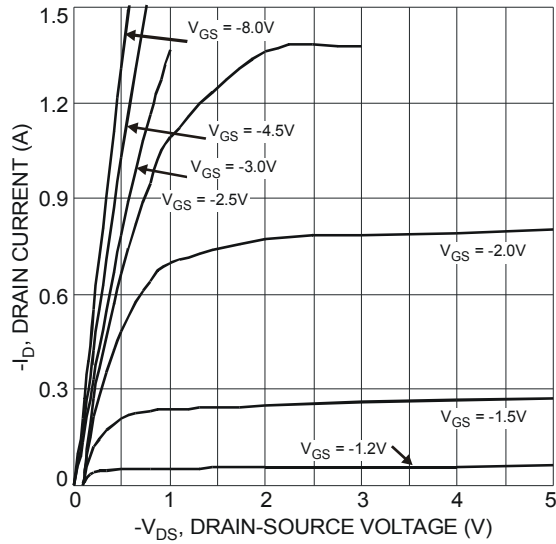


Fig. 1 Typical Output Characteristic

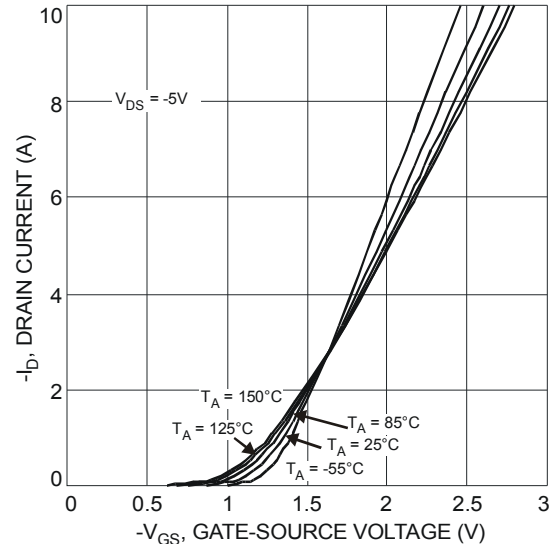


Fig. 2 Typical Transfer Characteristic

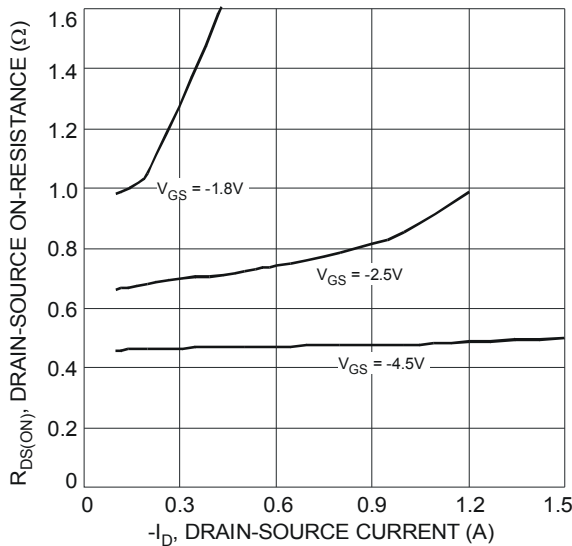


Fig. 3 Typical On-Resistance vs. Drain Current and Gate Voltage

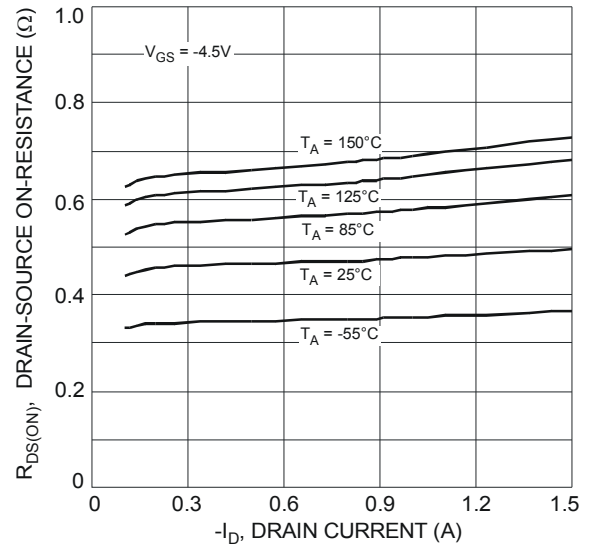


Fig. 4 Typical On-Resistance vs. Drain Current and Temperature

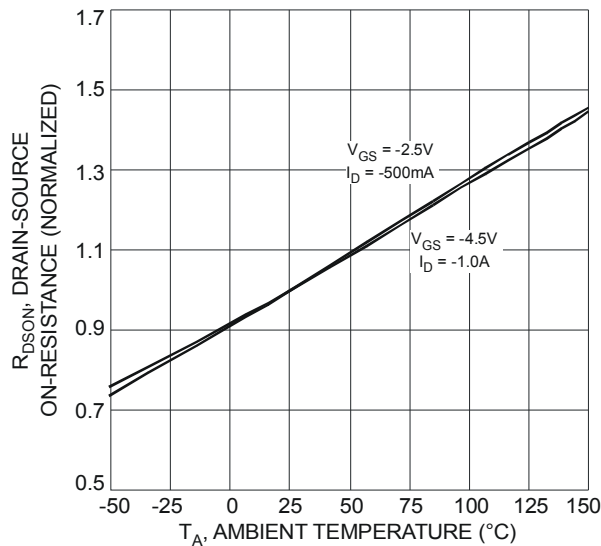


Fig. 5 On-Resistance Variation with Temperature

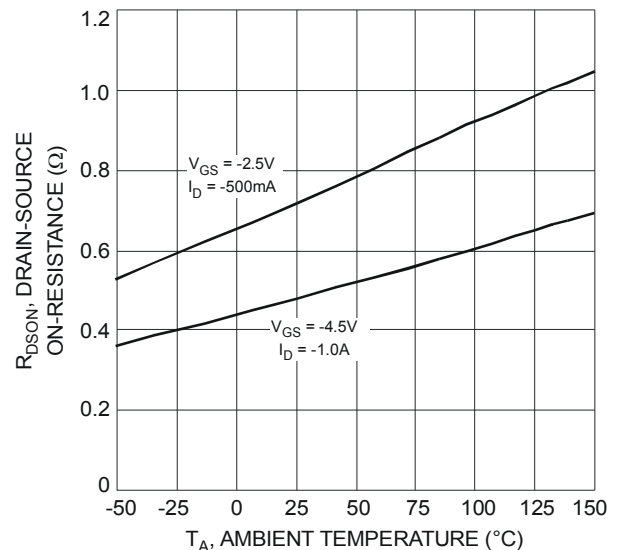


Fig. 6 On-Resistance Variation with Temperature

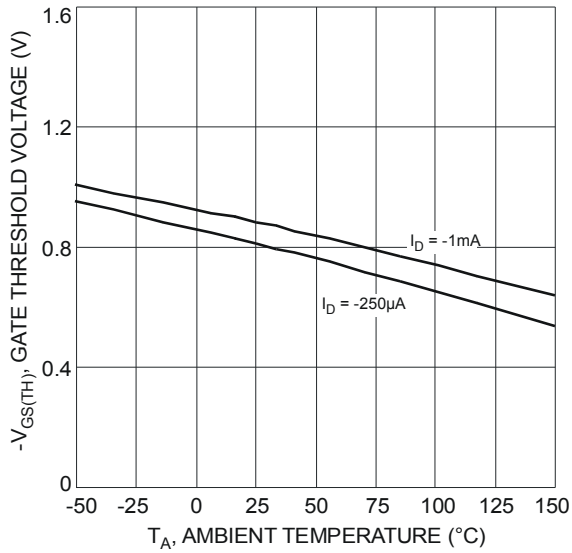


Fig. 7 Gate Threshold Variation vs. Ambient Temperature

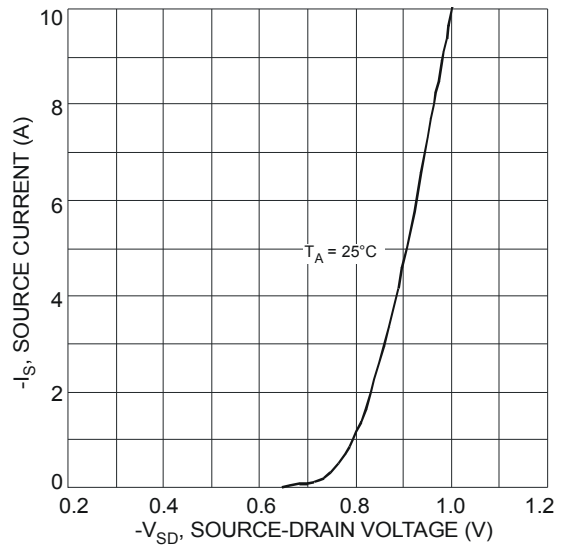


Fig. 8 Diode Forward Voltage vs. Current

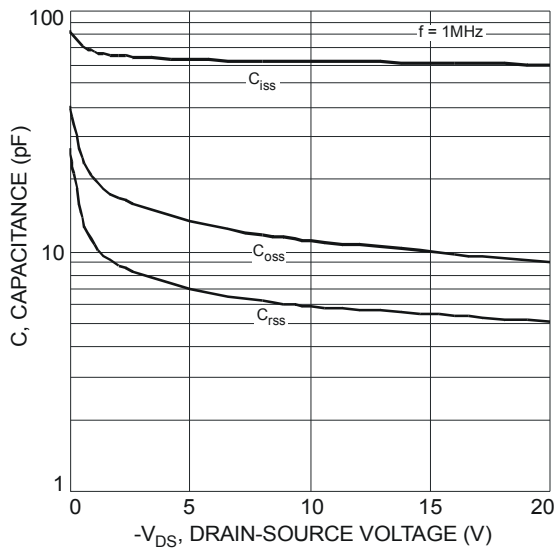


Fig. 9 Typical Total Capacitance

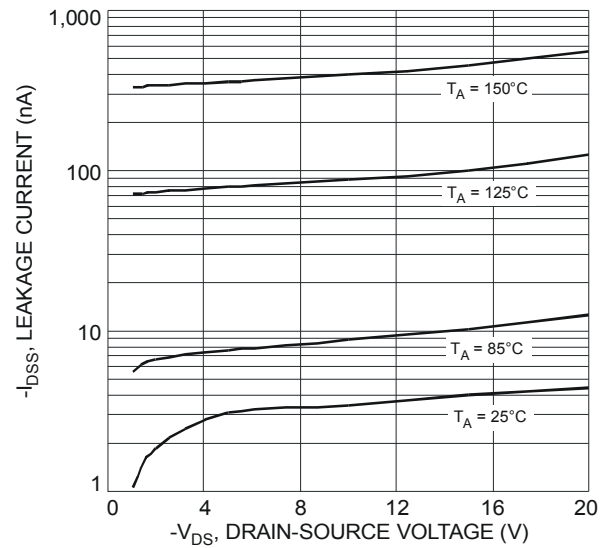


Fig. 10 Typical Leakage Current vs. Drain-Source Voltage

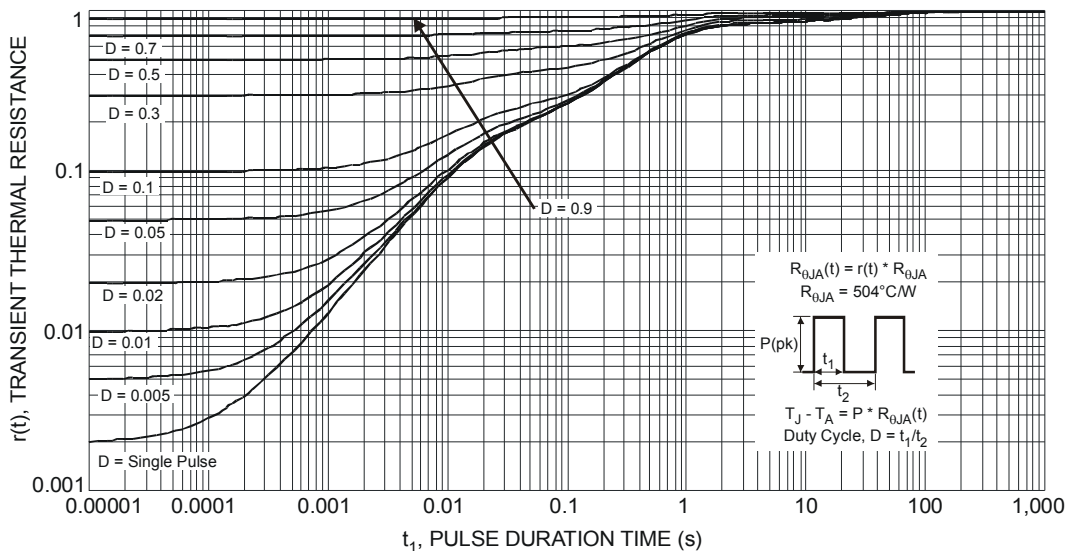
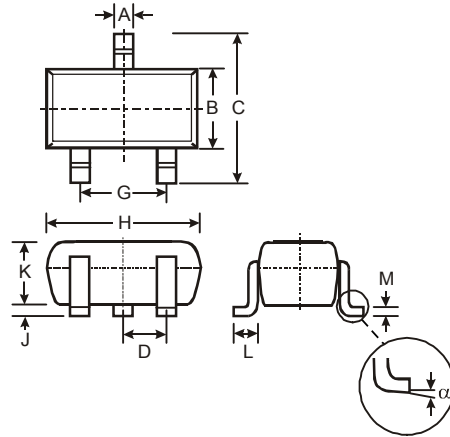


Fig. 11 Transient Thermal Response

## Package Outline Dimensions

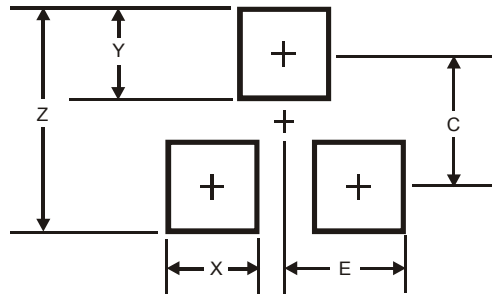
Please see AP02002 at <http://www.diodes.com/datasheets/ap02002.pdf> for latest version.



SOT-323			
Dim	Min	Max	Typ
A	0.25	0.40	0.30
B	1.15	1.35	1.30
C	2.00	2.20	2.10
D	-	-	0.65
G	1.20	1.40	1.30
H	1.80	2.20	2.15
J	0.0	0.10	0.05
K	0.90	1.00	0.95
L	0.25	0.40	0.30
M	0.10	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	2.8
X	0.7
Y	0.9
C	1.9
E	1.0

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