

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

Characteristic			Symbol	Value	Units
Drain-Source Voltage			V <sub>DSS</sub>	60	V
Drain-Gate Voltage R <sub>GS</sub> ≤ 1.0MΩ			V <sub>DGR</sub>	60	V
Gate-Source Voltage			V <sub>GSS</sub>	±20	V
Continuous Pulsed				±40	
Continuous Drain Current (Note 5) V <sub>GS</sub> = 10V	Steady State	T <sub>A</sub> = +25°C T <sub>A</sub> = +70°C	I <sub>D</sub>	250 200	mA
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>	300 240	mA
Maximum Body Diode Forward Current (Note 6)			I <sub>S</sub>	500	mA
Pulsed Drain Current (10μs pulse, duty cycle = 1%)			I <sub>DM</sub>	800	mA

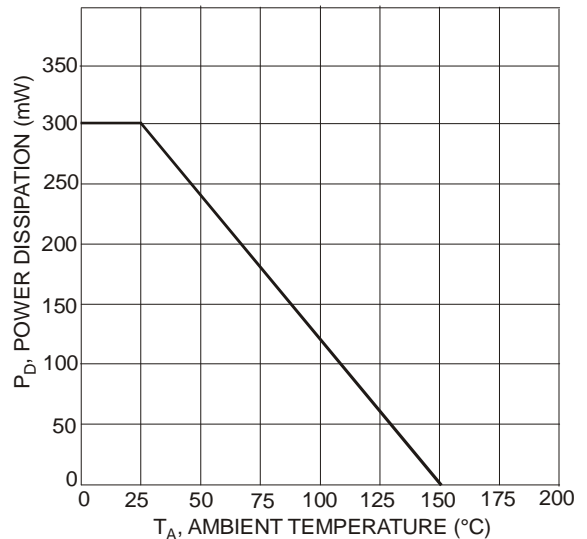
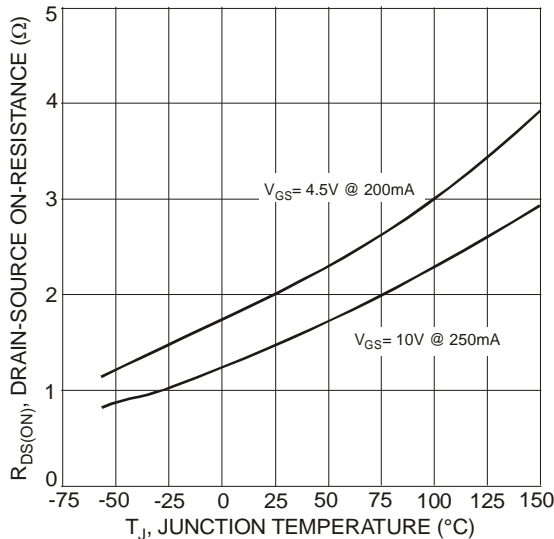
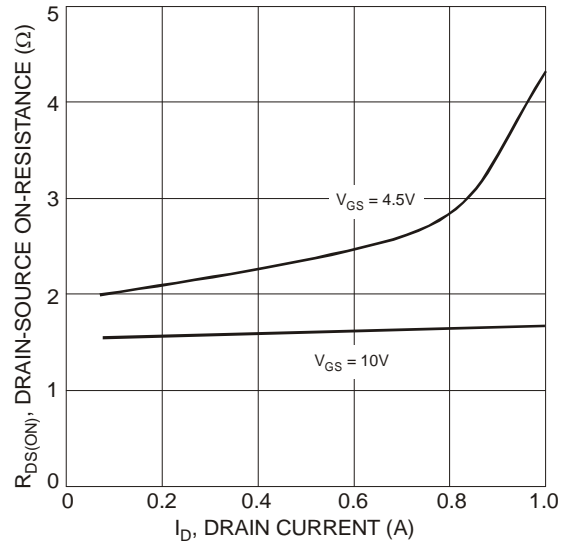
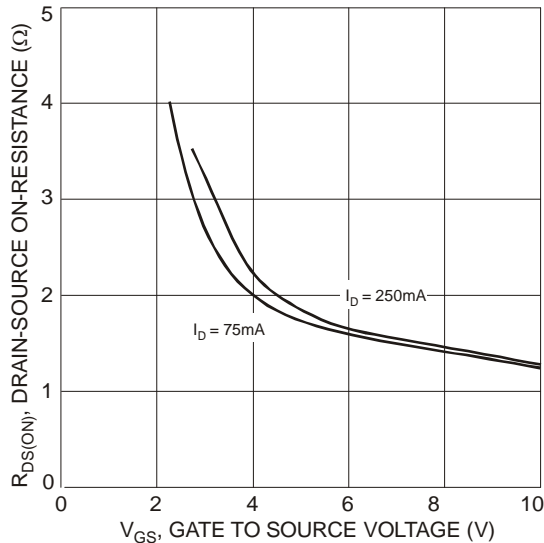
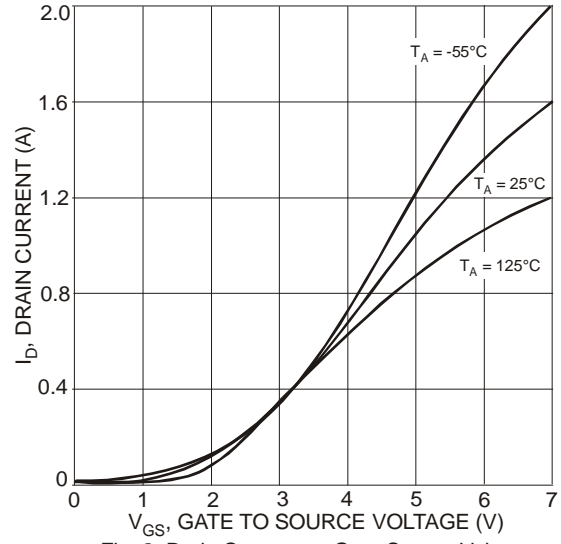
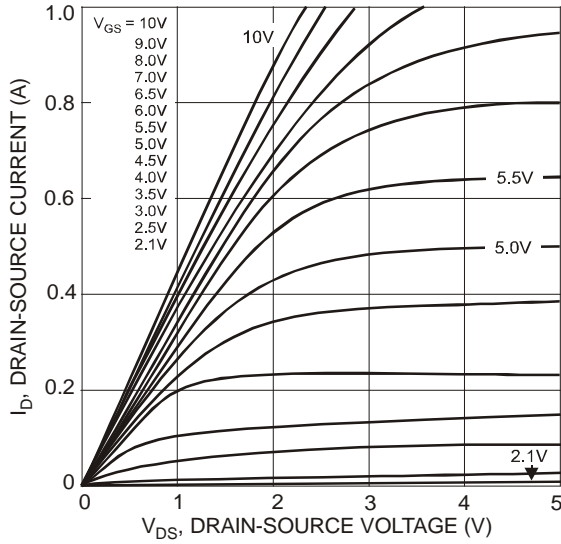
**Thermal Characteristics** (@T<sub>A</sub> = +25°C, unless otherwise specified.)

Characteristic		Symbol	Value	Units
Total Power Dissipation	(Note 5)	P <sub>D</sub>	370	mW
	(Note 6)		540	
Thermal Resistance, Junction to Ambient	(Note 5)	R <sub>θJA</sub>	348	°C/W
	(Note 6)		241	
Thermal Resistance, Junction to Case	(Note 6)	R <sub>θJC</sub>	91	
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.)

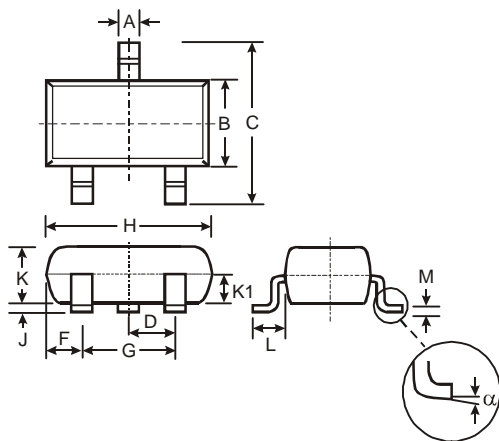
Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
OFF CHARACTERISTICS (Note 7)						
Drain-Source Breakdown Voltage	BV <sub>DSS</sub>	60	70	—	V	V <sub>GS</sub> = 0V, I <sub>D</sub> = 10μA
Zero Gate Voltage Drain Current @ T <sub>C</sub> = +25°C @ T <sub>C</sub> = +125°C	I <sub>DSS</sub>	—	—	1.0 500	μA	V <sub>DS</sub> = 60V, V <sub>GS</sub> = 0V
Gate-Body Leakage	I <sub>GSS</sub>	—	—	±10	nA	V <sub>GS</sub> = ±15V, V <sub>DS</sub> = 0V
ON CHARACTERISTICS (Note 7)						
Gate Threshold Voltage	V <sub>GS(th)</sub>	1.0	—	2.5	V	V <sub>DS</sub> = V <sub>GS</sub> , I <sub>D</sub> = 250μA
Static Drain-Source On-Resistance @ T <sub>J</sub> = +25°C	R <sub>DS(ON)</sub>	— —	1.6 2.0	3 4	Ω	V <sub>GS</sub> = 10V, I <sub>D</sub> = 250mA V <sub>GS</sub> = 4.5V, I <sub>D</sub> = 200mA
On-State Drain Current	I <sub>D(ON)</sub>	0.8	1.0	—	A	V <sub>GS</sub> = 10V, V <sub>DS</sub> = 7.5V
Forward Transconductance	g <sub>FS</sub>	80	—	—	mS	V <sub>DS</sub> = 10V, I <sub>D</sub> = 0.2A
DYNAMIC CHARACTERISTICS (Note 8)						
Input Capacitance	C <sub>iSS</sub>	—	22	50	pF	V <sub>DS</sub> = 25V, V <sub>GS</sub> = 0V, f = 1.0MHz
Output Capacitance	C <sub>oSS</sub>	—	11	25	pF	
Reverse Transfer Capacitance	C <sub>rSS</sub>	—	2.0	5.0	pF	
Gate resistance	R <sub>g</sub>	—	120	—	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>	—	223	—	pC	V <sub>DS</sub> = 10V, I <sub>D</sub> = 250mA
Gate-Source Charge	Q <sub>gs</sub>	—	82	—	pC	
Gate-Drain Charge	Q <sub>gd</sub>	—	178	—	pC	
SWITCHING CHARACTERISTICS (Note 8)						
Turn-On Delay Time	t <sub>D(ON)</sub>	—	7.0	20	ns	V <sub>DD</sub> = 30V, I <sub>D</sub> = 0.2A, R <sub>L</sub> = 150Ω, V <sub>GEN</sub> = 10V, R <sub>GEN</sub> = 25Ω
Turn-Off Delay Time	t <sub>D(OFF)</sub>	—	11	20	ns	

- Notes:
5. Device mounted on FR-4 PCB, with minimum recommended pad layout.
  6. Device mounted on 1" x 1" FR-4 PCB with high coverage 2oz. Copper, single sided.
  7. Short duration pulse test used to minimize self-heating effect.
  8. Guaranteed by design. Not subject to product testing.



## Package Outline Dimensions

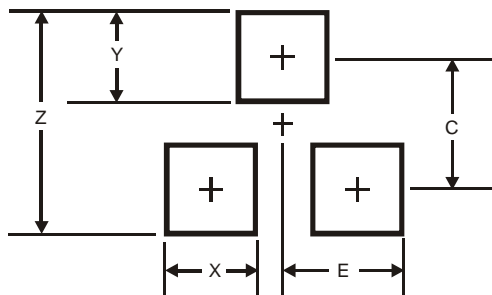
Please see AP02001 at <http://www.diodes.com/datasheets/ap02001.pdf> for the latest version.



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
$\alpha$	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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