

Maximum Ratings (@T_A = +25°C, unless otherwise specified.)

Characteristic			Symbol	Value	Units
Drain-Source Voltage			V _{DSS}	100	V
Gate-Source Voltage			V _{GSS}	±20	V
Continuous Drain Current (Note 6) V _{GS} = 10V	Steady State	T _A = +25°C T _A = +70°C	I _D	3.6 2.9	A
Pulsed Drain Current (10µs pulse, duty cycle ≤ 1%)			I _{DM}	16	A
Maximum Body Diode Continuous Current (Note 6)			I _S	2.5	A

Thermal Characteristics (@T_A = +25°C, unless otherwise specified.)

Characteristic		Symbol	Value	Units
Total Power Dissipation	(Note 5)	P _D	1.3	W
	(Note 6)		2.1	
Thermal Resistance, Junction to Ambient	(Note 5)	R _{θJA}	94	°C/W
	(Note 6)		58	
Thermal Resistance, Junction to Case	(Note 6)	R _{θJC}	8.2	
Operating and Storage Temperature Range		T _J , T _{STG}	-55 to +150	°C

Electrical Characteristics (@T_A = +25°C, unless otherwise specified.)

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
OFF CHARACTERISTICS (Note 7)						
Drain-Source Breakdown Voltage	BV _{DSS}	100	—	—	V	V _{GS} = 0V, I _D = 250µA
Zero Gate Voltage Drain Current	I _{DSS}	—	—	1.0	µA	V _{DS} = 80V, V _{GS} = 0V
Gate-Body Leakage	I _{GSS}	—	—	±100	nA	V _{GS} = ±20V, V _{DS} = 0V
ON CHARACTERISTICS (Note 7)						
Gate Threshold Voltage	V _{GS(th)}	1.5	2.6	3.0	V	V _{DS} = V _{GS} , I _D = 250µA
Static Drain-Source On-Resistance	R _{DS(on)}	—	77	110	mΩ	V _{GS} = 10V, I _D = 3.3A
		—	84	122		V _{GS} = 6.0V, I _D = 3.0A
Diode Forward Voltage	V _{SD}	—	0.8	1.2	V	V _{GS} = 0V, I _S = 3.2A
DYNAMIC CHARACTERISTICS (Note 8)						
Input Capacitance	C _{iss}	—	549	—	pF	V _{DS} = 50V, V _{GS} = 0V, f = 1.0MHz
Output Capacitance	C _{oss}	—	41	—		
Reverse Transfer Capacitance	C _{rss}	—	19	—		
Gate Resistance	R _g	—	1.6	—	Ω	V _{DS} = 0V, V _{GS} = 0V, f = 1.0MHz
Total Gate Charge (V _{GS} = 10V)	Q _g	—	10	—	nC	V _{DS} = 50V, I _D = 3.3A
Total Gate Charge (V _{GS} = 4.5V)	Q _g	—	5.2	—		
Gate-Source Charge	Q _{gs}	—	2.3	—		
Gate-Drain Charge	Q _{gd}	—	2.6	—		
Turn-On Delay Time	t _{D(on)}	—	3.8	—	nS	V _{DD} = 50V, V _{GS} = 10V, R _G = 6.0Ω, I _D = 3.3A
Turn-On Rise Time	t _r	—	1.8	—		
Turn-Off Delay Time	t _{D(off)}	—	11	—		
Turn-Off Fall Time	t _f	—	2.5	—		
Reverse Recovery Time	t _{rr}	—	21	—	nS	V _{GS} = 0V, I _S = 1.1A, di/dt = 100A/µs
Reverse Recovery Charge	Q _{rr}	—	17	—	nC	

- 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 1inch square copper plate.
7. Short duration pulse test used to minimize self-heating effect.
8. Guaranteed by design. Not subject to product testing.

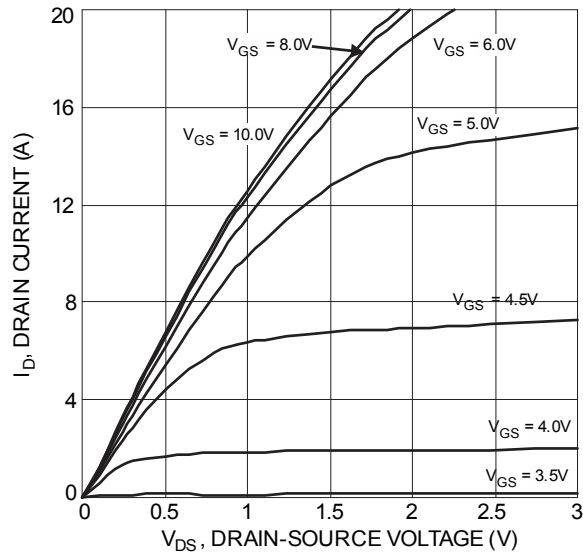


Figure 1 Typical Output Characteristics

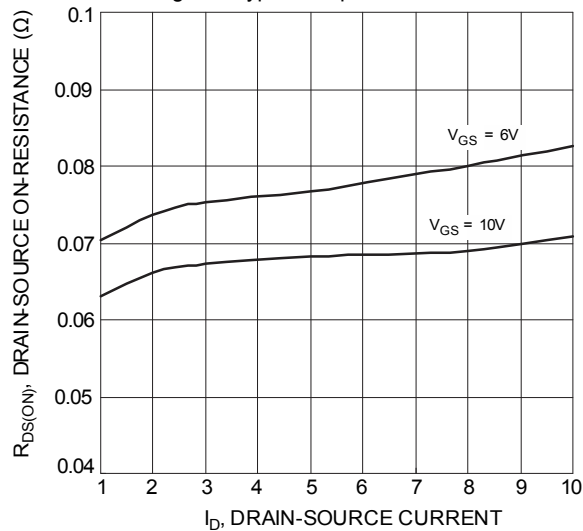


Figure 3 Typical On-Resistance vs. Drain Current and Gate Voltage

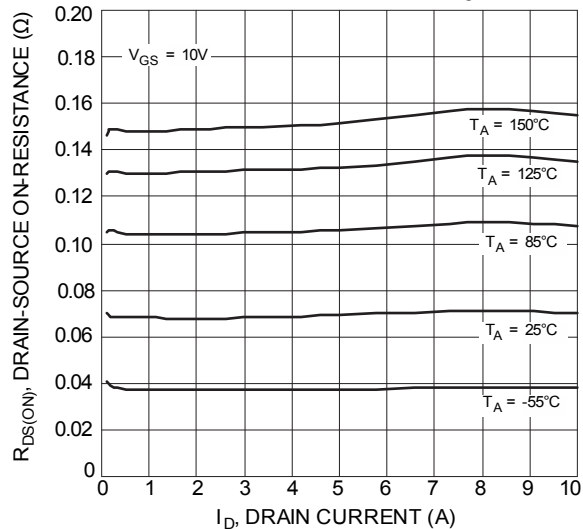


Figure 5 Typical On-Resistance vs. Drain Current and Temperature

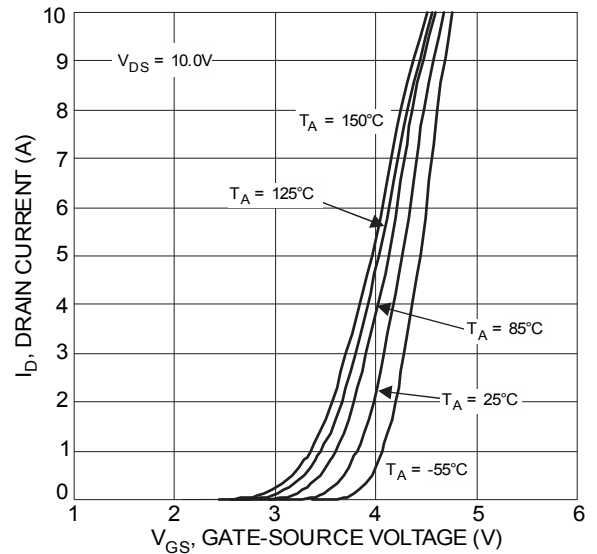


Figure 2 Typical Transfer Characteristics

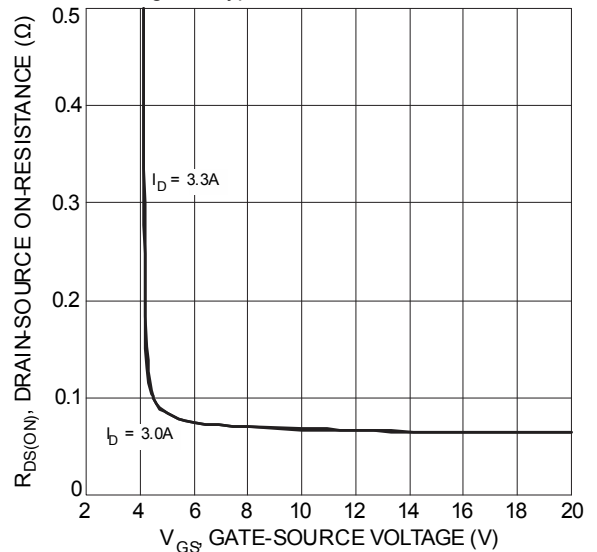


Figure 4 Typical Transfer Characteristics

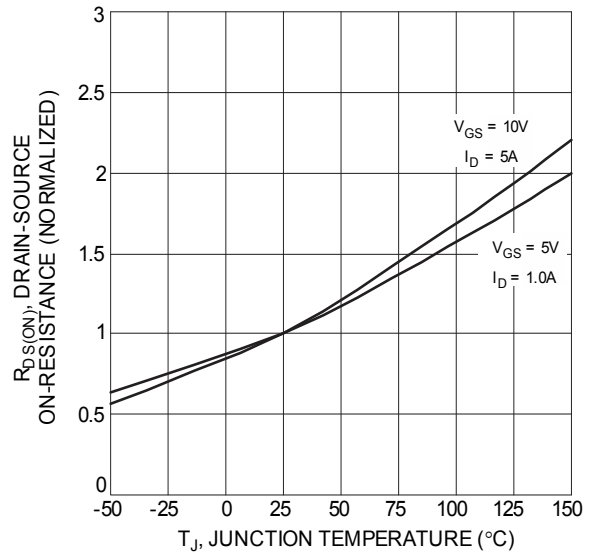
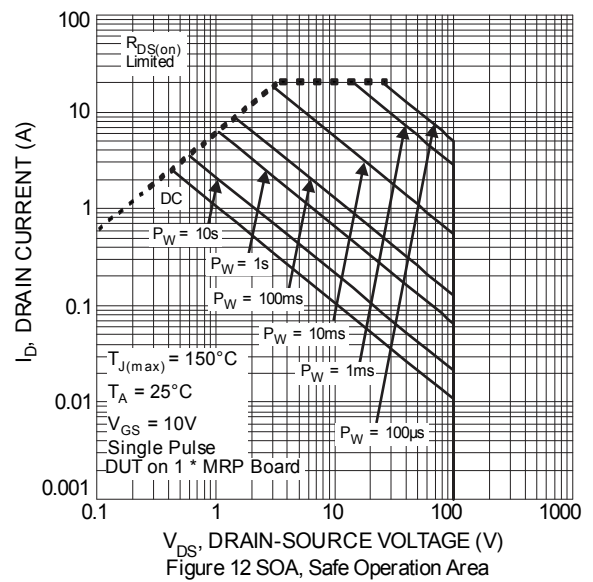
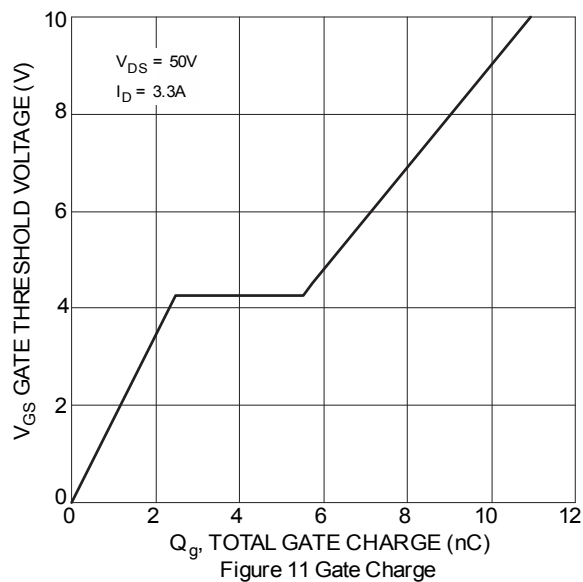
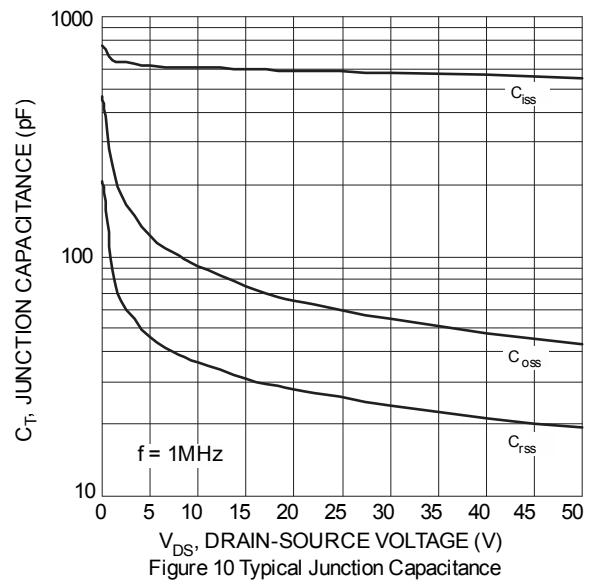
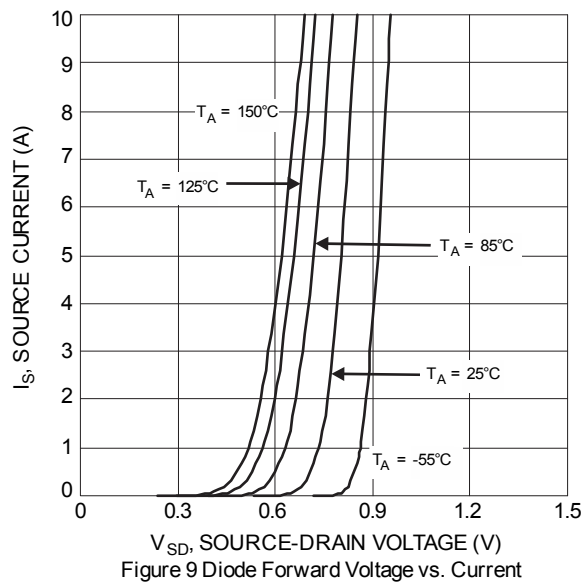
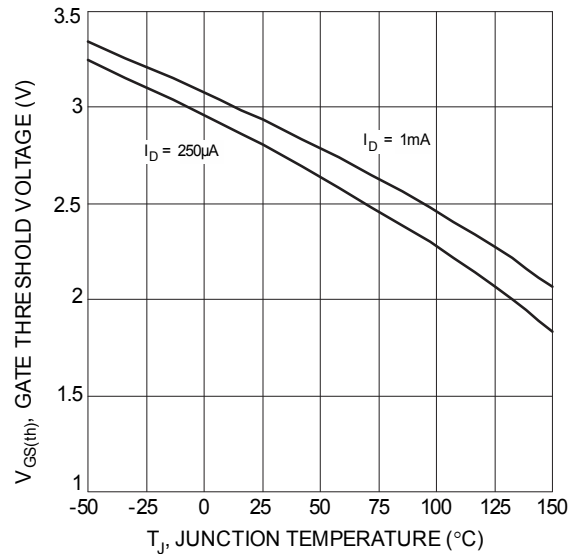
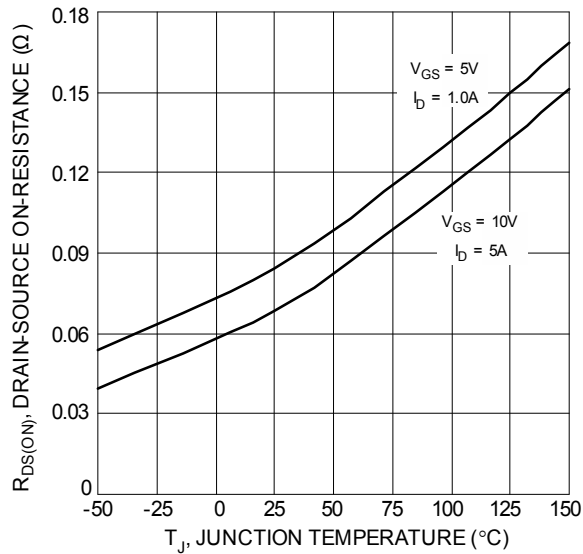
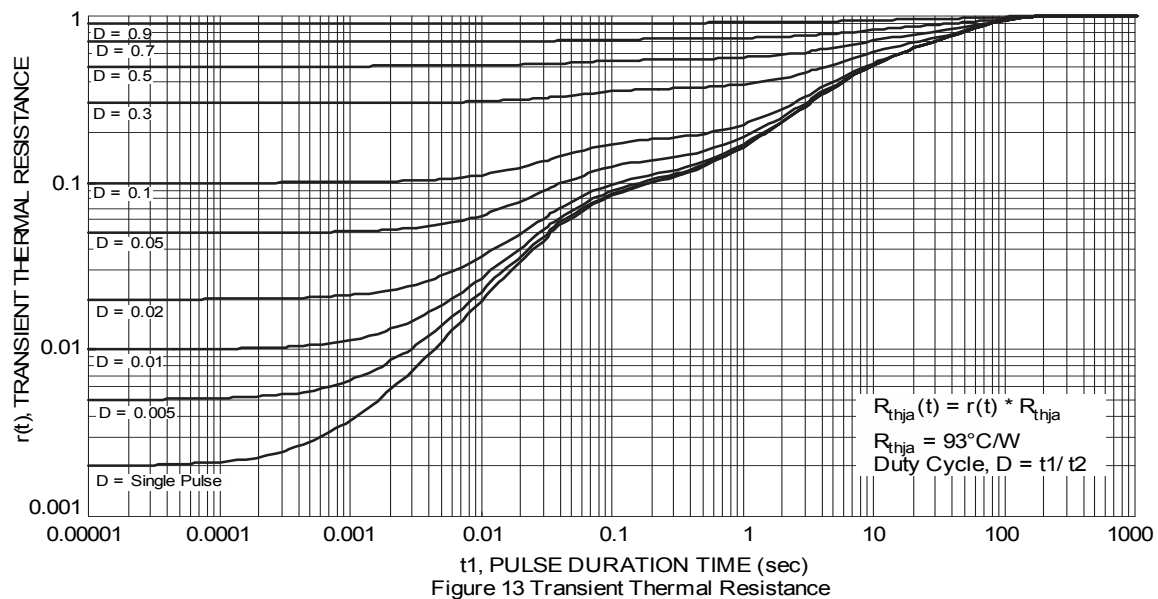


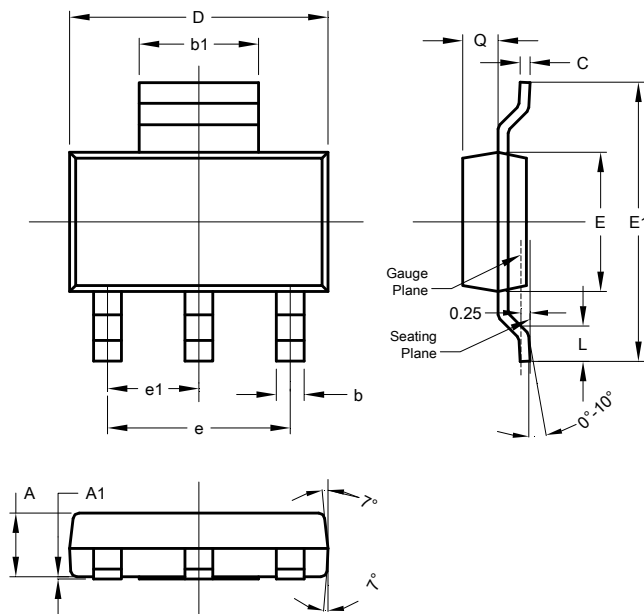
Figure 6 On-Resistance Variation with Temperature





Package Outline Dimensions & Suggested Pad Layout

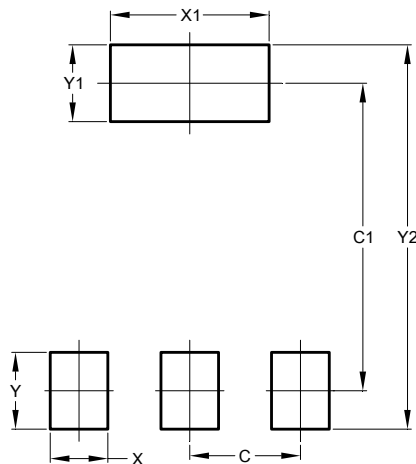
Please see AP02002 at <http://www.diodes.com/datasheets/ap02002.pdf> for the latest version.



SOT223			
Dim	Min	Max	Typ
A	1.55	1.65	1.60
A1	0.010	0.15	0.05
b	0.60	0.80	0.70
b1	2.90	3.10	3.00
C	0.20	0.30	0.25
D	6.45	6.55	6.50
E	3.45	3.55	3.50
E1	6.90	7.10	7.00
e	-	-	4.60
e1	-	-	2.30
L	0.85	1.05	0.95
Q	0.84	0.94	0.89
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)
C	2.30
C1	6.40
X	1.20
X1	3.30
Y	1.60
Y1	1.60
C2	8.00

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