

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

Characteristic			Symbol	Value	Units
Drain-Source Voltage			V _{DSS}	60	V
Gate-Source Voltage			V _{GSS}	±20	V
Continuous Drain Current (Note 6) V _{GS} = 10V	Steady State	T _A = +25°C	I _D	1.6	A
		T _A = +70°C		1.2	
	t<10s	T _A = +25°C	I _D	2.0	A
		T _A = +70°C		1.6	
Continuous Drain Current (Note 7) V _{GS} = 10V	Steady State	T _A = +25°C	I _D	2.3	A
		T _A = +70°C		1.8	
	t<10s	T _A = +25°C	I _D	2.9	A
		T _A = +70°C		2.3	
Maximum Continuous Body Diode Forward Current (Note 7)			I _S	1.5	A
Pulsed Drain Current (10μs pulse, duty cycle = 1%)			I _{DM}	10	A

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

Characteristic		Symbol	Value	Units
Total Power Dissipation (Note 6)	T _A = +25°C	P _D	0.7	W
	T _A = +70°C		0.4	
Thermal Resistance, Junction to Ambient (Note 6)	Steady State	R _{θJA}	183	°C/W
	t < 10s		115	
Total Power Dissipation (Note 7)	T _A = +25°C	P _D	1.3	W
	T _A = +70°C		0.8	
Thermal Resistance, Junction to Ambient (Note 7)	Steady State	R _{θJA}	94	°C/W
	t < 10s		61	
Thermal Resistance, Junction to Case		R _{θJC}	39	
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 8)						
Drain-Source Breakdown Voltage	BV _{DSS}	60	—	—	V	V _{GS} = 0V, I _D = 250μA
Zero Gate Voltage Drain Current	I _{DSS}	—	—	1	μA	V _{DS} = 60V, V _{GS} = 0V
Gate-Source Leakage	I _{GSS}	—	—	±100	nA	V _{GS} = ±20V, V _{DS} = 0V
ON CHARACTERISTICS (Note 8)						
Gate Threshold Voltage	V _{GS(th)}	1	—	3	V	V _{DS} = V _{GS} , I _D = 250μA
Static Drain-Source On-Resistance	R _{DS(on)}	—	92	140	mΩ	V _{GS} = 10V, I _D = 1.8A
			115	170		V _{GS} = 4.5V, I _D = 1.3A
Forward Transfer Admittance	Y _{fs}	—	2.2	—	S	V _{DS} = 15V, I _D = 1.8A
Diode Forward Voltage	V _{SD}	—	0.75	1.0	V	V _{GS} = 0V, I _S = 0.45A
DYNAMIC CHARACTERISTICS (Note 9)						
Input Capacitance	C _{iss}	—	315	—	pF	V _{DS} = 40V, V _{GS} = 0V f = 1.0MHz
Output Capacitance	C _{oss}	—	18	—		
Reverse Transfer Capacitance	C _{rss}	—	16	—		
Gate Resistnace	R _g	—	0.65	—	Ω	V _{DS} = 0V, V _{GS} = 0V, f = 1.0MHz
Total Gate Charge (V _{GS} = 10V)	Q _g	—	8.6	—	nC	V _{DS} = 30V, I _D = 1.8A
Total Gate Charge (V _{GS} = 5V)	Q _g	—	4.1	—		
Gate-Source Charge	Q _{gs}	—	1.0	—		
Gate-Drain Charge	Q _{gd}	—	1.7	—		
Turn-On Delay Time	t _{D(on)}	—	2.6	—	ns	V _{DS} = 30V, V _{GS} = 10V, R _G = 6.0Ω, I _D = 1.8A
Turn-On Rise Time	t _r	—	3.6	—		
Turn-Off Delay Time	t _{D(off)}	—	16.3	—		
Turn-Off Fall Time	t _f	—	2.7	—		
Reverse Recovery Time	t _{rr}	—	16.8	—	ns	I _F = 1.8A, di/dt = 100A/μs
Reverse Recovery Charge	Q _{rr}	—	9.0	—	nC	

- 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 thermal vias to bottom layer 1in. square copper plate.
 - Short duration pulse test used to minimize self-heating effect.
 - Guaranteed by design. Not subject to production testing.

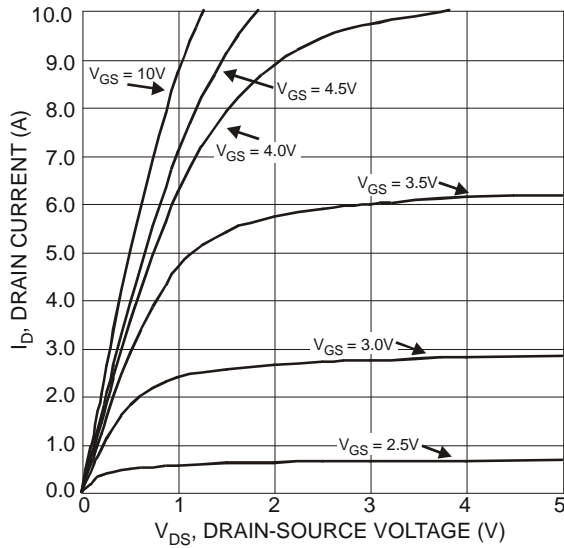


Figure 1 Typical Output Characteristic

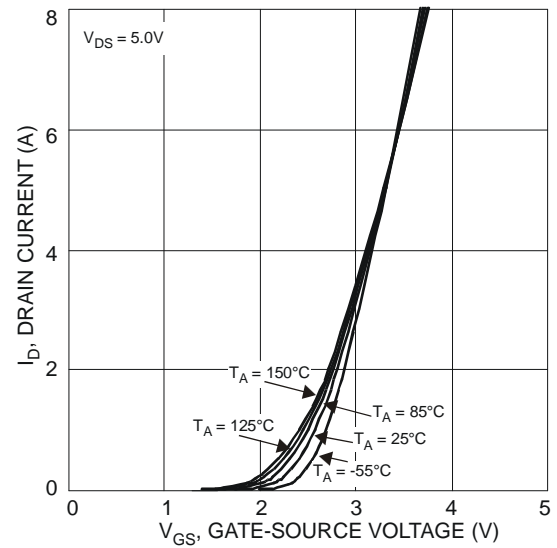


Figure 2 Typical Transfer Characteristics

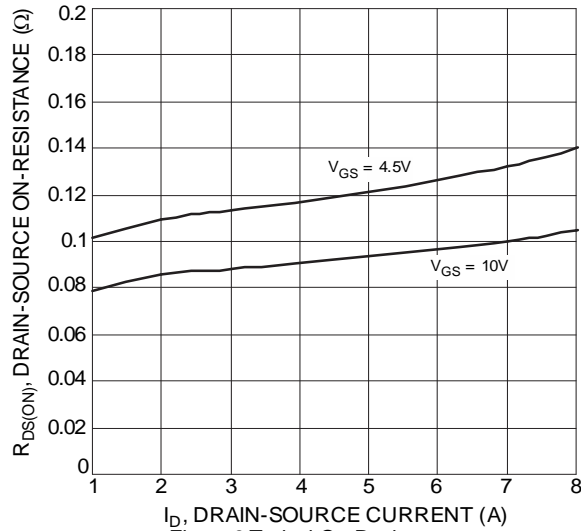


Figure 3 Typical On-Resistance vs. Drain Current and Gate Voltage

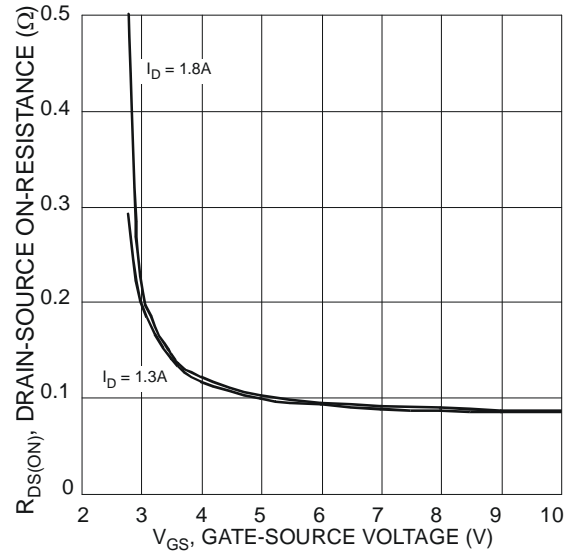


Figure 4 Typical Drain-Source On Resistance vs. Gate-Source Voltage

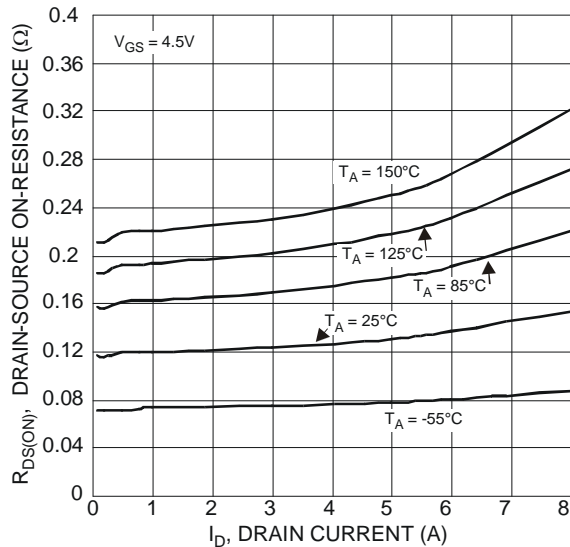


Figure 5 Typical On-Resistance vs. Drain Current and Temperature

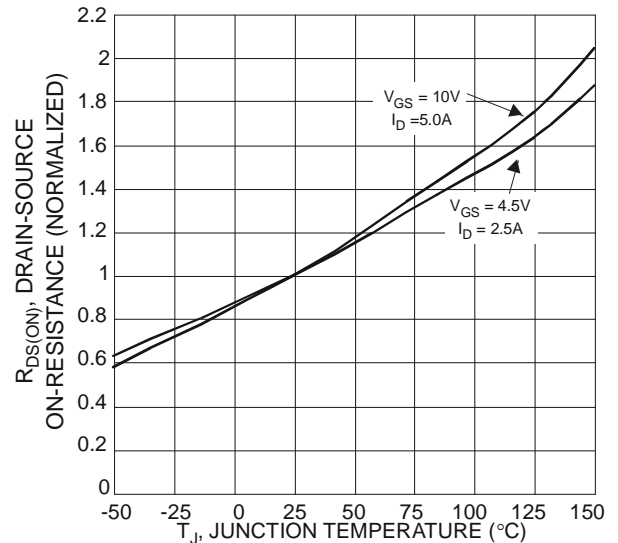
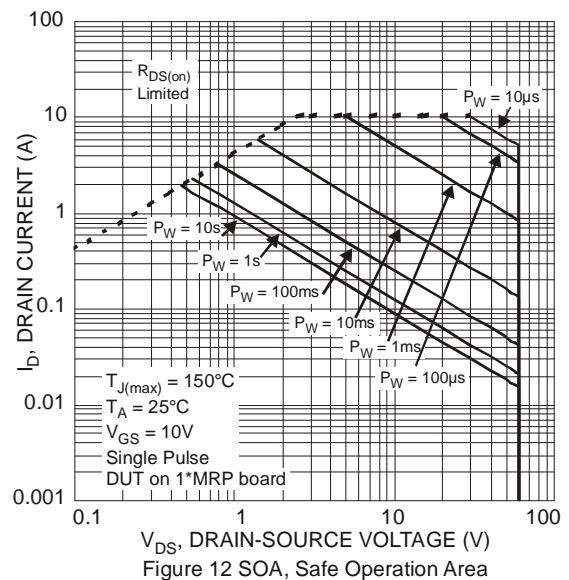
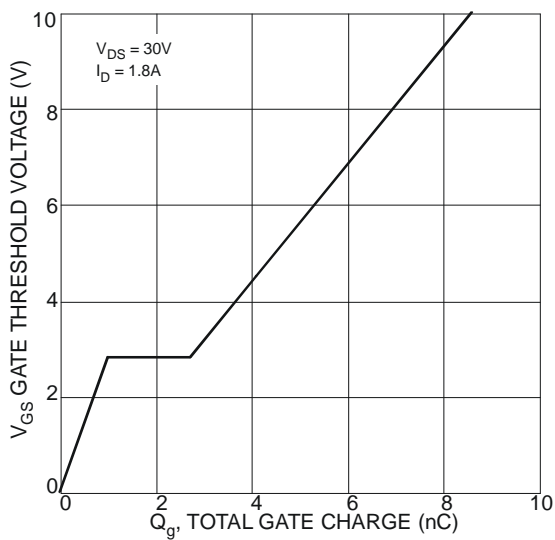
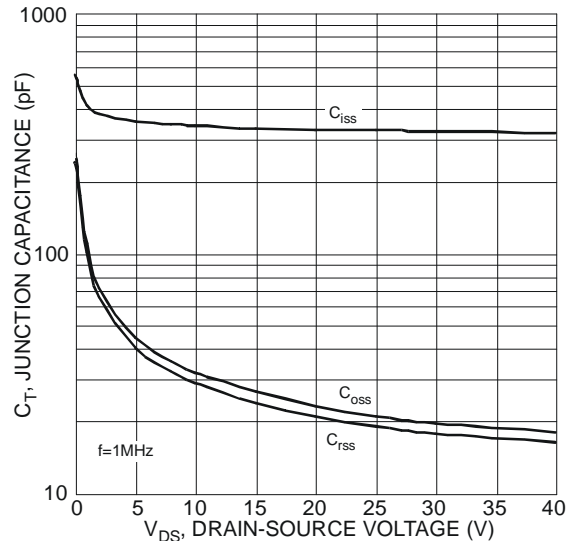
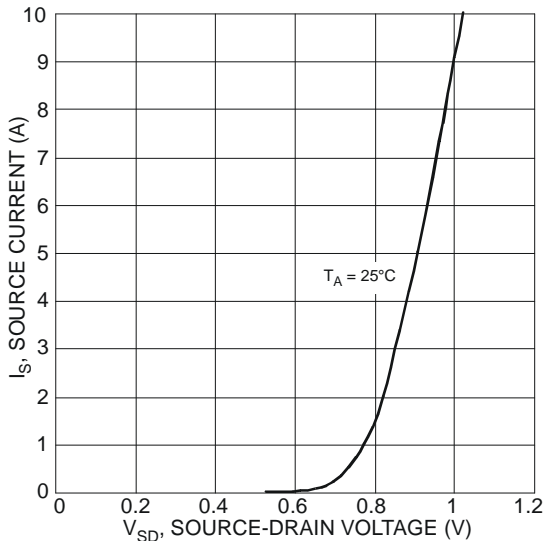
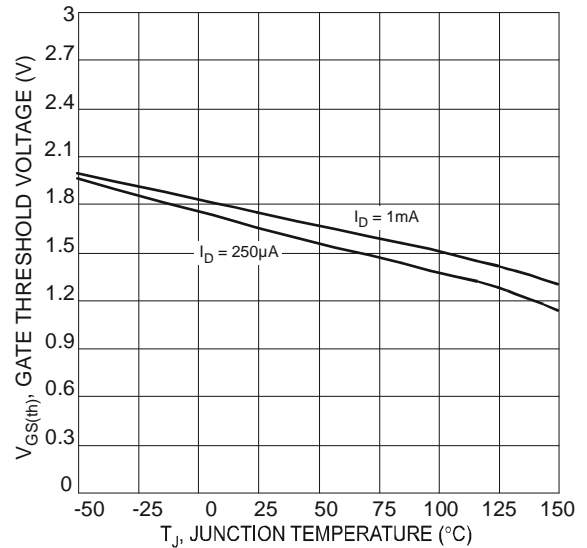
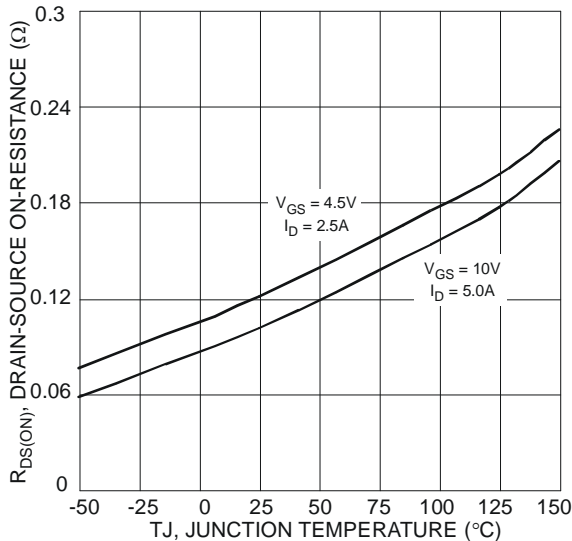
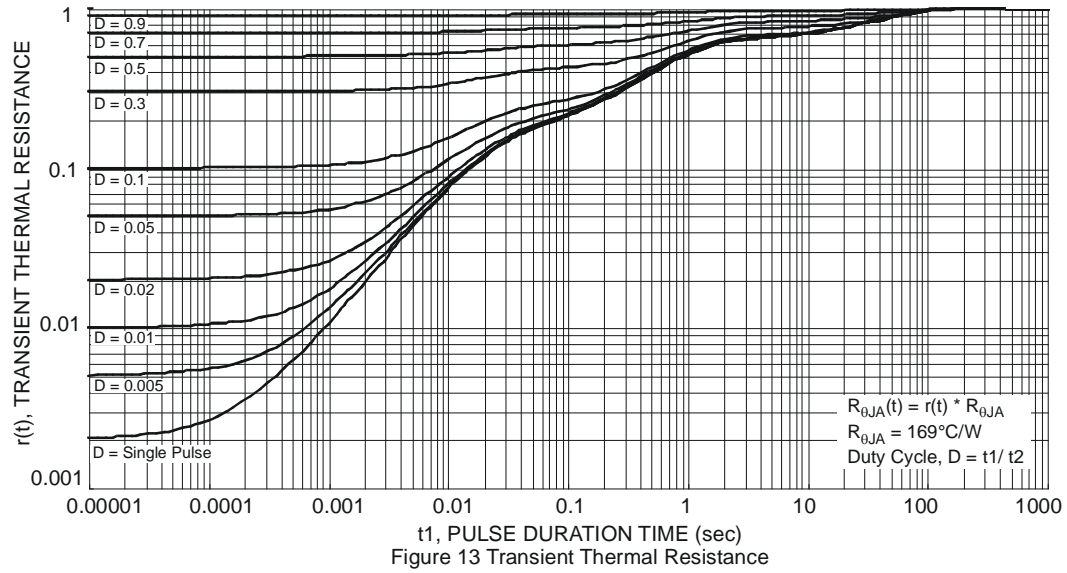


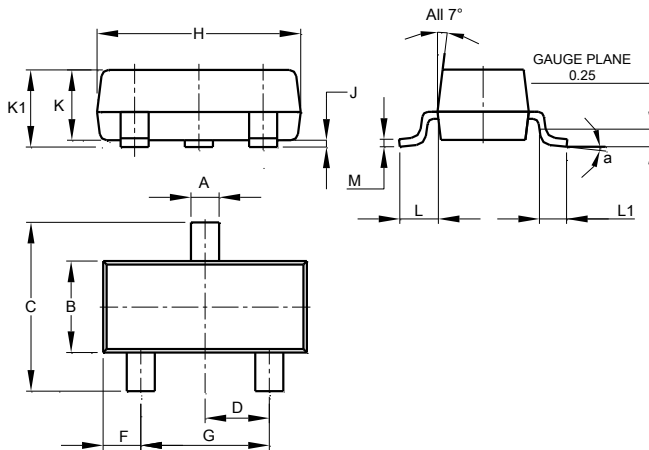
Figure 6 On-Resistance Variation with Temperature





Package Outline Dimensions

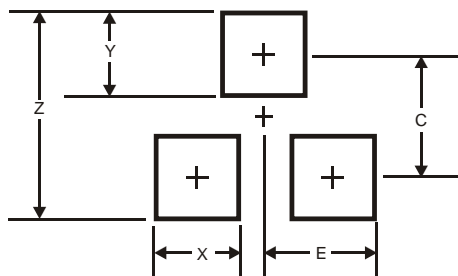
Please see AP02002 at <http://www.diodes.com/datasheets/ap02002.pdf> for the latest version.



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	0.890	1.00	0.975
K1	0.903	1.10	1.025
L	0.45	0.61	0.55
L1	0.25	0.55	0.40
M	0.085	0.150	0.110
α	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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