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

Characteristic			Symbol	Value	Units
Drain-Source Voltage			V_{DSS}	-30	V
Gate-Source Voltage			V_{GSS}	±20	V
Drain Current (Note 6) V_{GS} = -10V	Steady State	T_A = +25°C T_A = +70°C	I_D	-3.8 -2.9	A
Pulsed Drain Current (Note 7)			I_{DM}	-11	A

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

Characteristic	Symbol	Value	Units
Total Power Dissipation (Note 6)	P_D	1.08	W
Thermal Resistance, Junction to Ambient @T_A = +25°C (Note 6)	$R_{\theta JA}$	115	°C/W
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}	-30	—	—	V	V_{GS} = 0V, I_D = -250µA
Zero Gate Voltage Drain Current	I_{DSS}	—	—	-800	nA	V_{DS} = -30V, V_{GS} = 0V
Gate-Source Leakage	I_{GSS}	—	—	±100	nA	V_{GS} = ±20V, V_{DS} = 0V
ON CHARACTERISTICS (Note 8)						
Gate Threshold Voltage	$V_{GS(th)}$	-1.0	-1.8	-2.1	V	V_{DS} = V_{GS}, I_D = -250µA
Static Drain-Source On-Resistance	$R_{DS(ON)}$	—	56 98	70 120	mΩ	V_{GS} = -10V, I_D = -3.8A V_{GS} = -4.5V, I_D = -3.0A
Forward Transfer Admittance	$\|Y_{fs}\|$	—	3.6	—	S	V_{DS} = -5V, I_D = -2.7A
Diode Forward Voltage (Note 7)	V_{SD}	—	—	-1.26	V	V_{GS} = 0V, I_S = -2.7A
DYNAMIC CHARACTERISTICS (Note 9)						
Input Capacitance	C_{iss}	—	336	1008	pF	V_{DS} = -25V, V_{GS} = 0V, f = 1.0MHz
Output Capacitance	C_{oss}	—	70	210	pF	
Reverse Transfer Capacitance	C_{rss}	—	49	147	pF	
Gate Resistance	R_G	—	4.6	—	Ω	V_{GS} = 0V, V_{DS} = 0V, f = 1MHz
SWITCHING CHARACTERISTICS (Note 9)						
Total Gate Charge	Q_g	—	4.0	8.0	nC	V_{DS} = -15V, V_{GS} = -4.5V, I_D = -3.8A
		—	7.8	—		V_{DS} = -15V, V_{GS} = -10V, I_D = -3.8A
Gate-Source Charge	Q_{gs}	—	1.0	—		
Gate-Drain Charge	Q_{gd}	—	2.5	—		
Turn-On Delay Time	$t_{d(on)}$	—	6.0	12.0	ns	V_{DS} = -15V, V_{GS} = -10V, I_D = -1A, R_G = 6.0Ω
Rise Time	t_r	—	5.0	10.0		
Turn-Off Delay Time	$t_{d(off)}$	—	17.6	35.2		
Fall Time	t_f	—	9.5	19.0		

Notes:
6. Device mounted on FR-4 PCB on 2 oz., 0.5 in.^{2} copper pads and t ≤5 sec.
7. Pulse width ≤10µS, Duty Cycle ≤1%.
8. Short duration pulse test used to minimize self-heating effect.
9. Guaranteed by design. Not subject to production testing.

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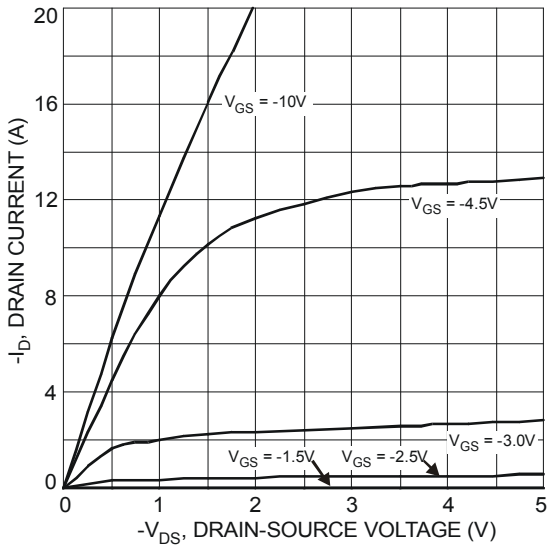

Fig. 1 Typical Output Characteristics

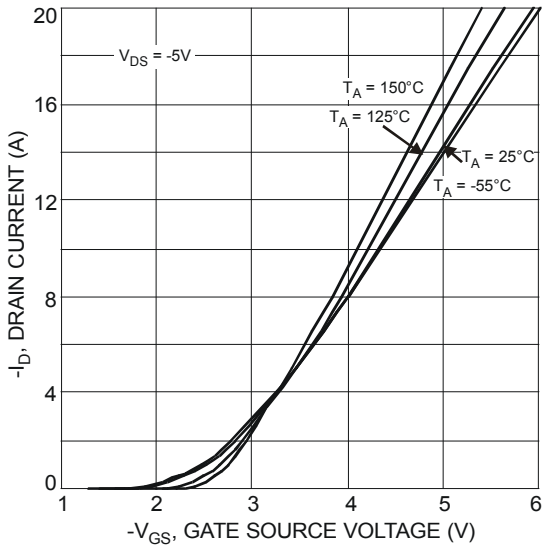

Fig. 2 Typical Transfer Characteristics

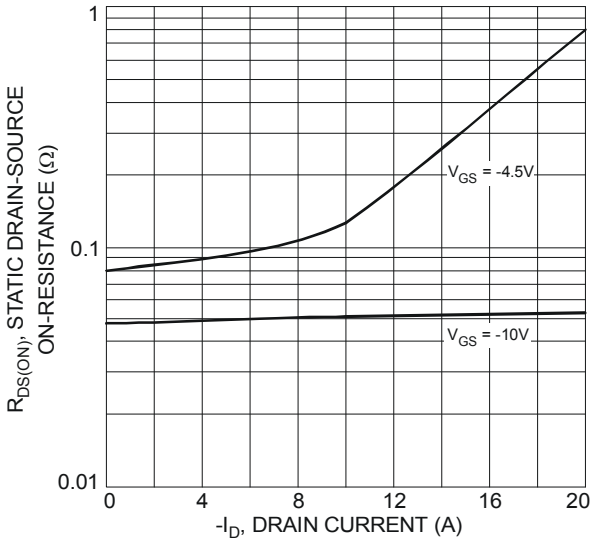

Fig. 3 Typical On-Resistance
vs. Drain Current and Gate Voltage

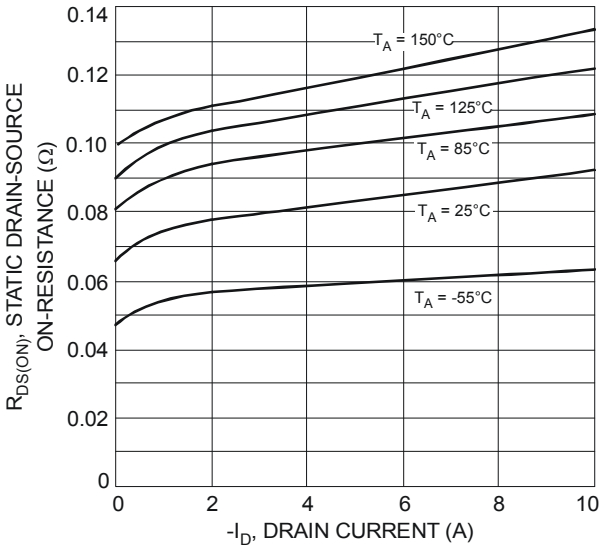

Fig. 4 Typical On-Resistance
vs. Drain Current and Temperature

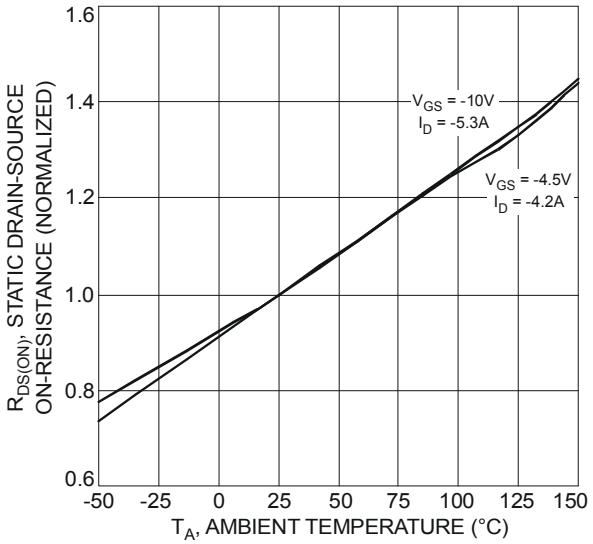

Fig. 5 On-Resistance Variation with Temperature

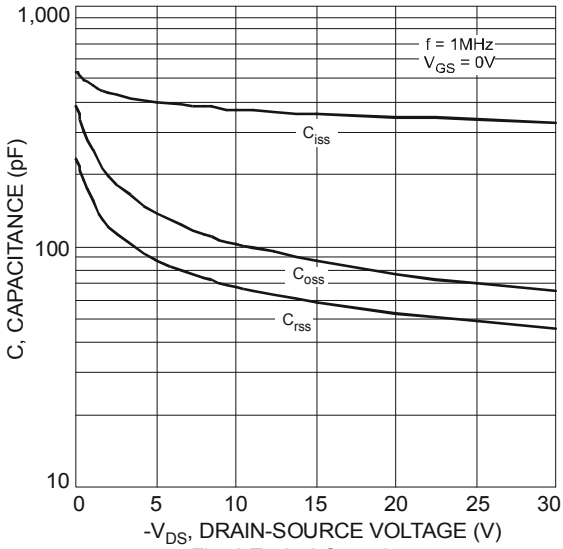

Fig. 6 Typical Capacitance

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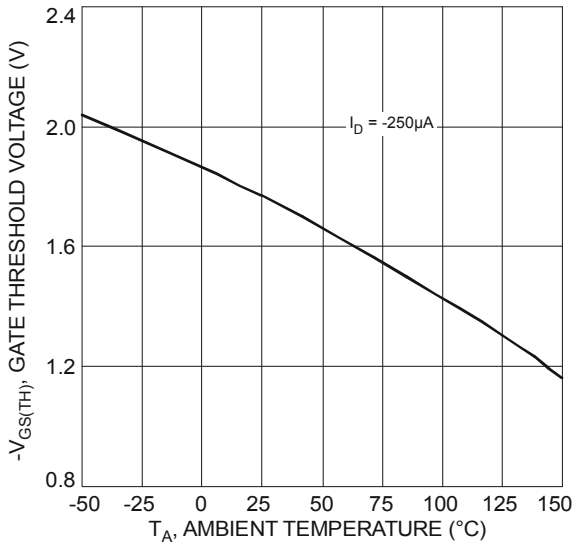


Fig. 7 Gate Threshold Variation vs. Ambient Temperature

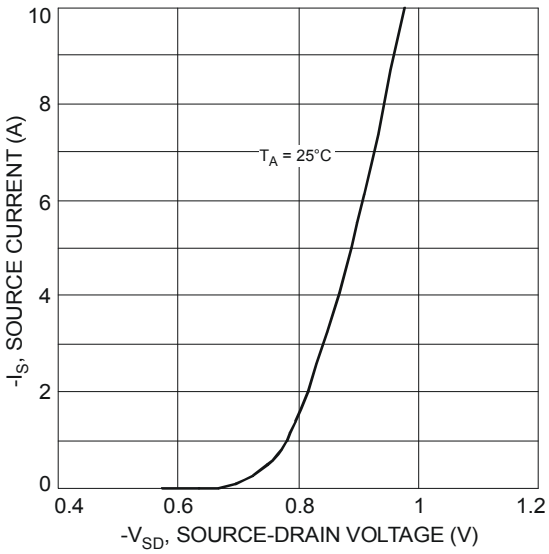


Fig. 8 Diode Forward Voltage vs. Current

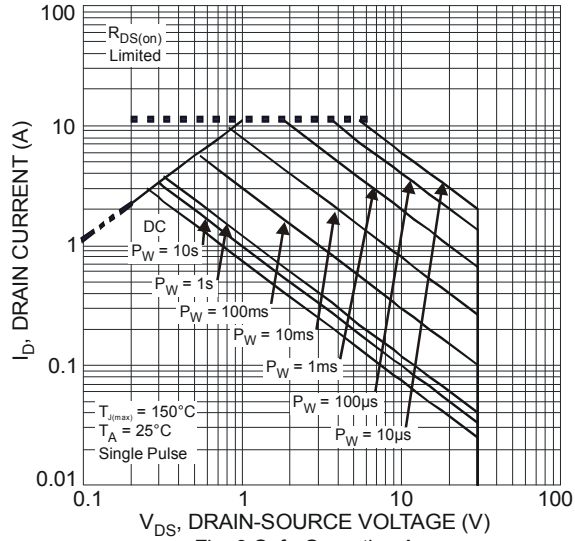
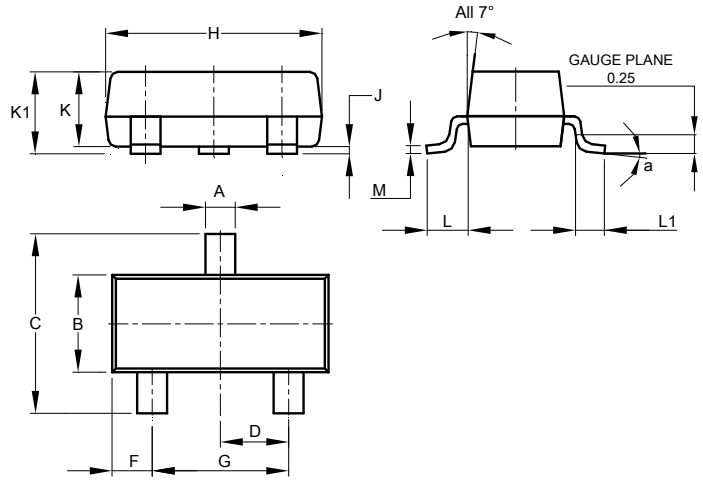


Fig. 9 Safe Operation Area

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	0.890	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			

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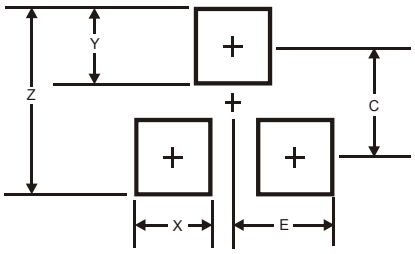
Suggested Pad Layout

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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