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

Characteristic			Symbol	Value	Unit
Drain-Source Voltage			V_{DSS}	-30	V
Gate-Source Voltage			V_{GSS}	±20	V
Continuous Drain Current (Note 6)	V_{GS} = -10V	T_A = +25°C T_A = +70°C	I_D	300 250	mA
Pulsed Drain Current (Note 6)			I_{DM}	-1	A

Thermal Characteristics @T_A = 25°C unless otherwise specified

Characteristic		Symbol	Value	Units
Total Power Dissipation	(Note 5)	P_D	370	mW
	(Note 6)		540	
Thermal Resistance, Junction to Ambient	(Note 5)	$R_{\theta JA}$	348	°C/W
	(Note 6)		241	
Thermal Resistance, Junction to Case	(Note 6)	$R_{\theta JC}$	91	
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}	-30	—	—	V	V_{GS} = 0V, I_D = -1mA
Zero Gate Voltage Drain Current T_J = +25°C	I_{DSS}	—	—	-1	µA	V_{DS} = -30V, V_{GS} = 0V
Gate-Source Leakage	I_{GSS}	—	—	±10	µA	V_{GS} = ±16V, V_{DS} = 0V
ON CHARACTERISTICS (Note 7)						
Gate Threshold Voltage	$V_{GS(th)}$	-1.4 -1.2	— —	-2.4 -2.0	V	V_{DS} = V_{GS}, I_D = -250µA V_{DS} = -5V, I_D = -1µA
Static Drain-Source On-Resistance	$R_{DS\ (ON)}$	—	—	2.4	Ω	V_{GS} = -10V, I_D = -0.3A
				4		V_{GS} = -4.5V, I_D = -0.25A
Forward Transfer Admittance	$\|Y_{fs}\|$	—	6	—	S	V_{DS} = -10V, I_D = -400mA
Diode Forward Voltage	V_{SD}	—	0.8	1.2	V	V_{GS} = 0V, I_S = -300mA
DYNAMIC CHARACTERISTICS (Note 8)						
Input Capacitance	C_{iss}	—	51.16	—	pF	V_{DS} = -15V, V_{GS} = 0V, f = 1.0MHz
Output Capacitance	C_{oss}	—	10.85	—	pF	
Reverse Transfer Capacitance	C_{rss}	—	8.88	—	pF	
Gate Resistance	R_g	—	275	—	Ω	V_{DS} = 0V, V_{GS} = 0V, f = 1MHz
Total Gate Charge	Q_g	—	0.6	—	nC	V_{GS} = -4.5V; V_{DS} = -10V, I_D = -1A
Total Gate Charge	Q_g	—	1.2	—	nC	V_{GS} = -10V; V_{DS} = -10V, I_D = -1A
Gate-Source Charge	Q_{gs}	—	0.2	—	nC	
Gate-Drain Charge	Q_{gd}	—	0.3	—	nC	
Turn-On Delay Time	$t_{D(on)}$	—	9.86	—	ns	V_{DS} = -15V, I_D = -1A, V_{GS} = -10V, R_G = 6Ω
Turn-On Rise Time	t_r	—	11.5	—	ns	
Turn-Off Delay Time	$t_{D(off)}$	—	31.8	—	ns	
Turn-Off Fall Time	t_f	—	21.9	—	ns	

Notes:
5. Device mounted on FR-4 PC board, with minimum recommended pad layout, single sided.
6. Device mounted on FR-4 substrate PC board, 2oz copper, with 1inch square copper pad layout
7 .Short duration pulse test used to minimize self-heating effect.
8. Guaranteed by design. Not subject to production testing.

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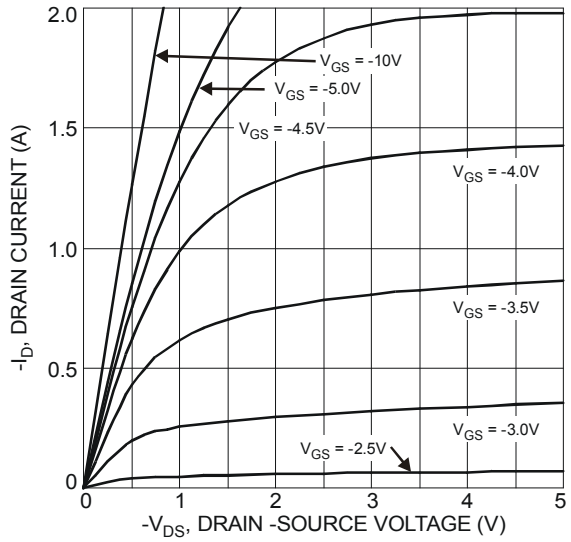

Figure 1 Typical Output Characteristics

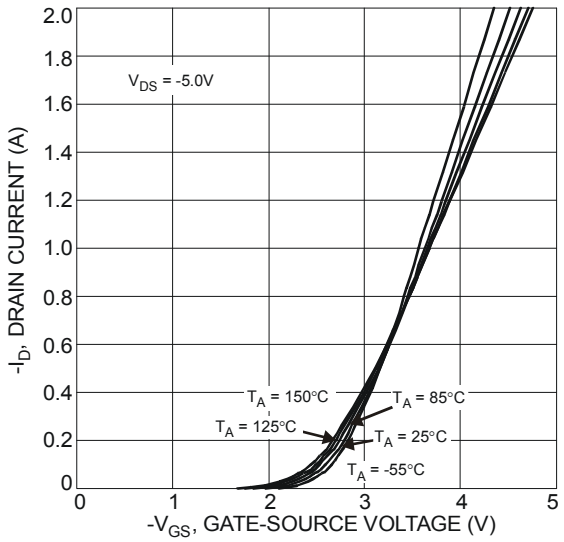

Figure 2 Typical Transfer Characteristics

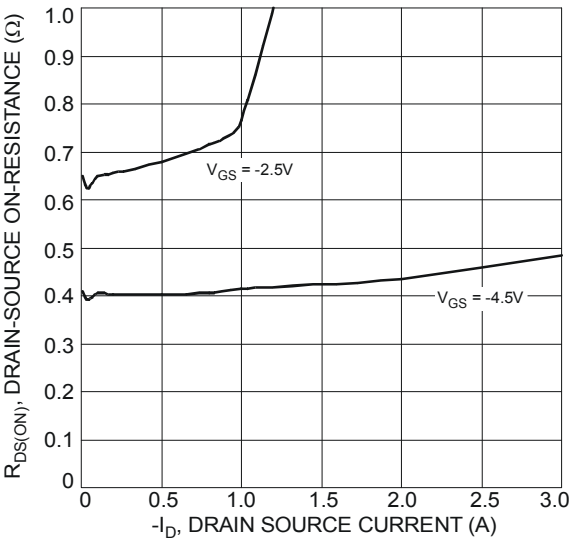

Figure 3 Typical On-Resistance vs. Drain Current and Gate Voltage

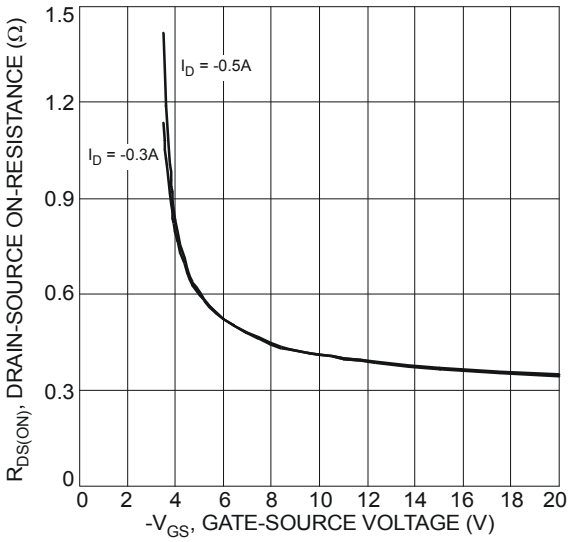

Figure 4 Typical Drain-Source On-Resistance vs. Gate-Source Voltage

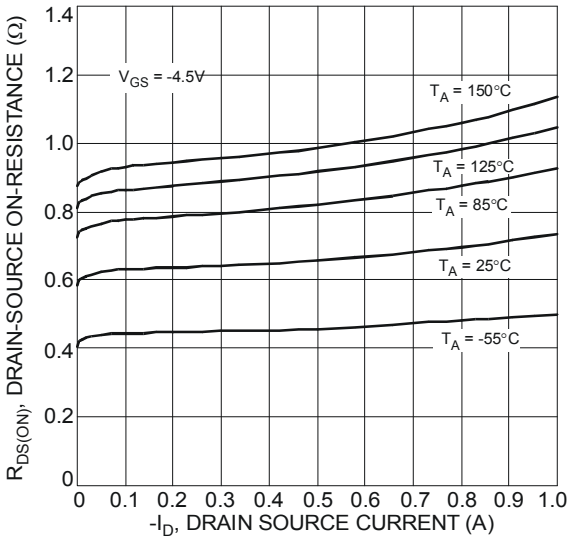

Figure 5 Typical On-Resistance vs. Drain Current and Temperature

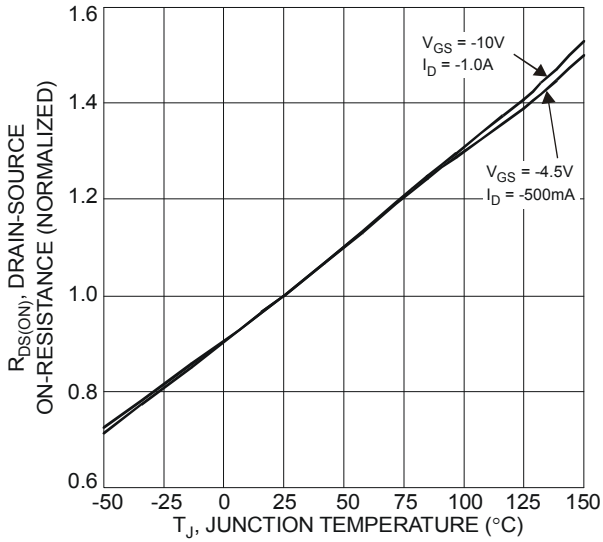

Figure 6 On-Resistance Variation with Temperature

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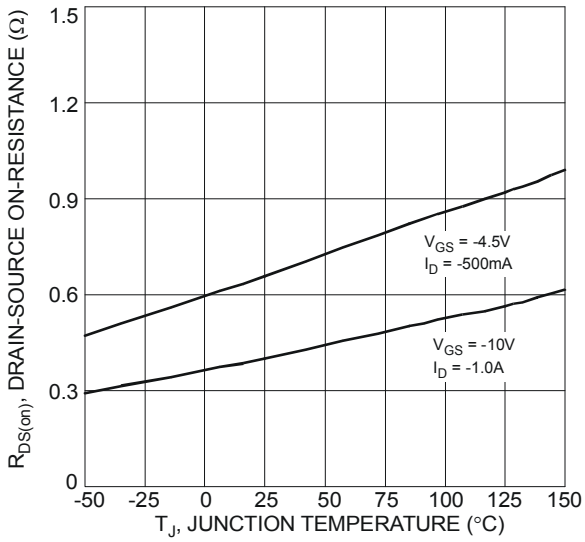

Figure 7 On-Resistance Variation with Temperature

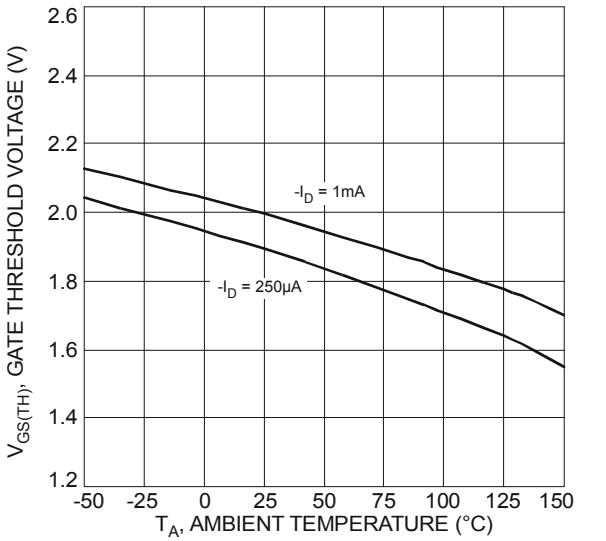

Figure 8 Gate Threshold Variation vs. Ambient Temperature

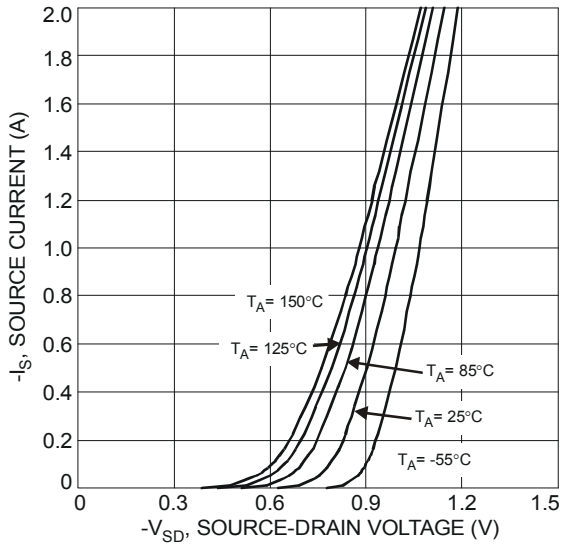

Figure 9 Diode Forward Voltage vs. Current

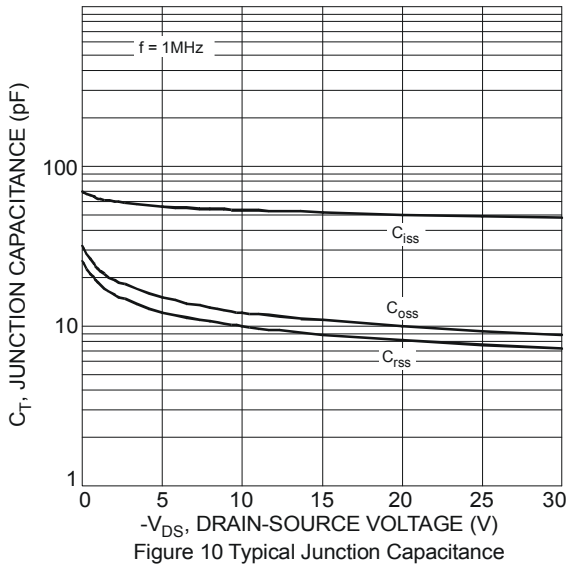

Figure 10 Typical Junction Capacitance

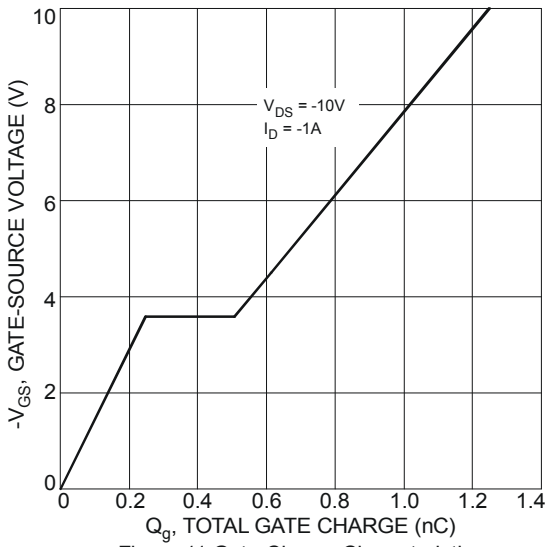

Figure 11 Gate-Charge Characteristics

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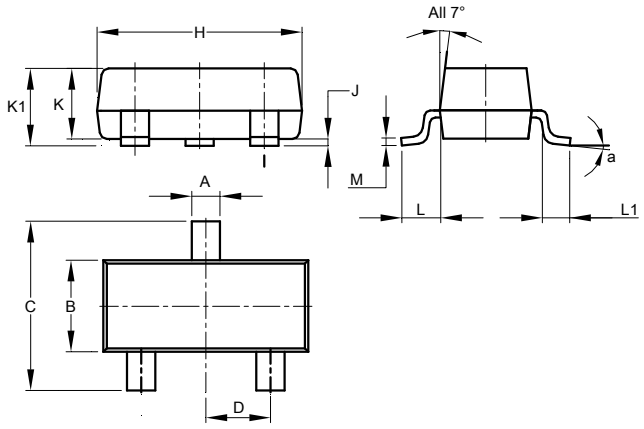
Package Outline Dimensions

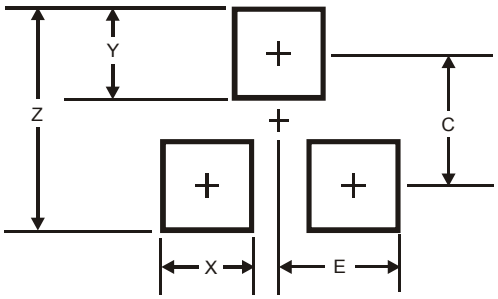
Please see AP02002 at http://www.diodes.com/datasheets/ap02002.pdf for latest version.



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
a	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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