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

Characteristic			Symbol	Value	Units
Drain-Source Voltage			V_{DSS}	20	V
Gate-Source Voltage			V_{GSS}	±8	V
Drain Current (Note 5)	Steady State	T_A = +25°C T_A = +70°C	I_D	8 6.7	A
Pulsed Drain Current (Note 6)			I_{DM}	30	A

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Total Power Dissipation (Note 5)	P_D	1.3	W
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	96	°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 7)						
Drain-Source Breakdown Voltage	BV_{DSS}	20	—	—	V	V_{GS} = 0V, I_D = 250μA
Zero Gate Voltage Drain Current	I_{DSS}	—	—	1	μA	V_{DS} = 20V, V_{GS} = 0V
Gate-Source Leakage	I_{GSS}	—	—	±100	nA	V_{GS} = ±8V, V_{DS} = 0V
ON CHARACTERISTICS (Note 7)						
Gate Threshold Voltage	$V_{GS(th)}$	0.5	—	0.9	V	V_{DS} = V_{GS}, I_D = 250μA
Static Drain-Source On-Resistance	$R_{DS\ (ON)}$	—	19 23 29	24 29 37	mΩ	V_{GS} = 4.5V, I_D = 8.2A V_{GS} = 2.5V, I_D = 3.3A V_{GS} = 1.8V, I_D = 2A
Forward Transfer Admittance	$\|Y_{fs}\|$	—	7	—	S	V_{DS} = 10V, I_D = 4A
Diode Forward Voltage	V_{SD}	0.5	—	0.9	V	V_{GS} = 0V, I_S = 1A
DYNAMIC CHARACTERISTICS (Note 8)						
Input Capacitance	C_{iss}	—	867	—	pF	V_{DS} = 15V, V_{GS} = 0V f = 1MHz
Output Capacitance	C_{oss}	—	85	—	pF	
Reverse Transfer Capacitance	C_{rss}	—	81	—	pF	
Gate Resistance	R_G	—	1.29	—	Ω	V_{GS} = 0V, V_{DS} = 0V, f = 1MHz
SWITCHING CHARACTERISTICS (Note 8)						
Total Gate Charge	Q_g	—	8.8	—	nC	V_{GS} = 4.5V, V_{DS} = 10V, I_D = 8.2A
Gate-Source Charge	Q_{gs}	—	1.2	—	nC	
Gate-Drain Charge	Q_{gd}	—	3	—	nC	
Turn-On Delay Time	$t_{d(on)}$	—	13.2	—	ns	V_{DD} = 10V, V_{GS} = 4.5V, R_L = 10Ω, R_G = 6Ω
Turn-On Rise Time	t_r	—	12.6	—	ns	
Turn-Off Delay Time	$t_{d(off)}$	—	64.8	—	ns	
Turn-Off Fall Time	t_f	—	21.7	—	ns	

Notes:
5. Device mounted on FR-4 PCB with minimum recommended pad layout.
6. Repetitive rating, pulse width limited by function temperature.
7. Short duration pulse test used to minimize self-heating effect.
8. Guaranteed by design. Not subject to production testing.

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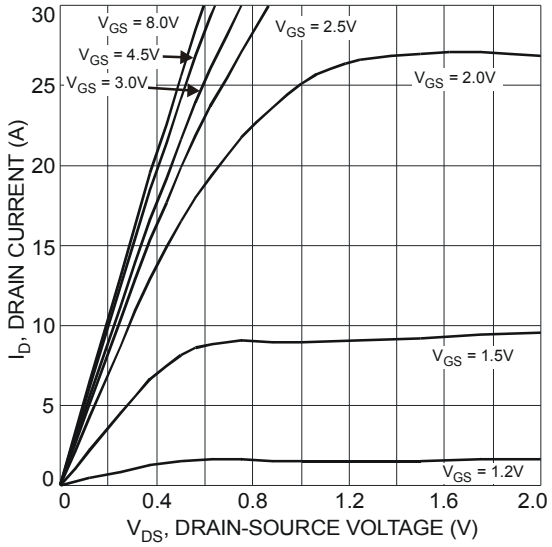

Fig. 1 Typical Output Characteristics

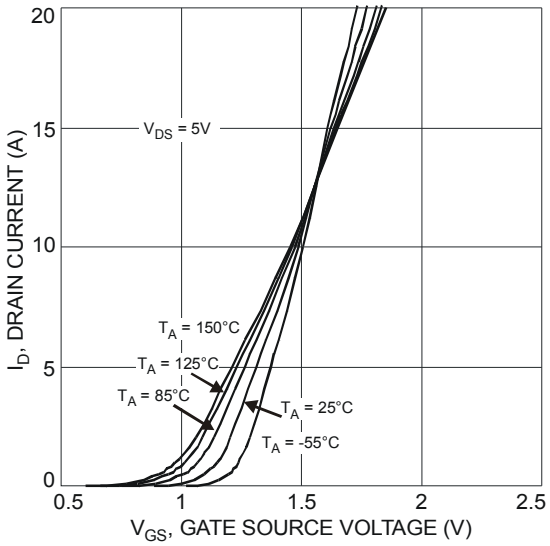

Fig. 2 Typical Transfer Characteristics

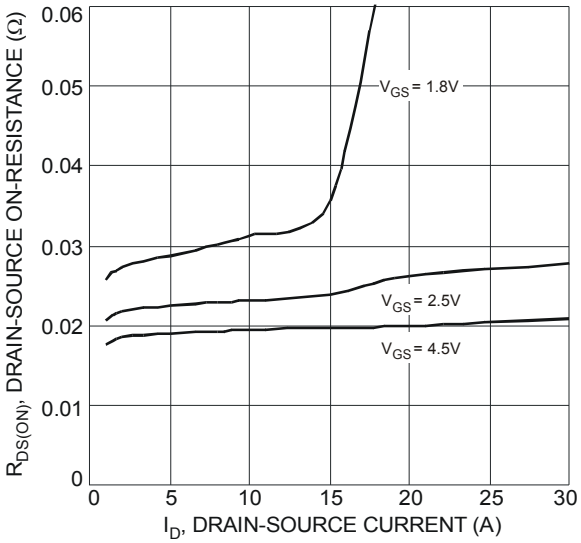

Fig. 3 Typical On-Resistance
vs. Drain Current and Gate Voltage

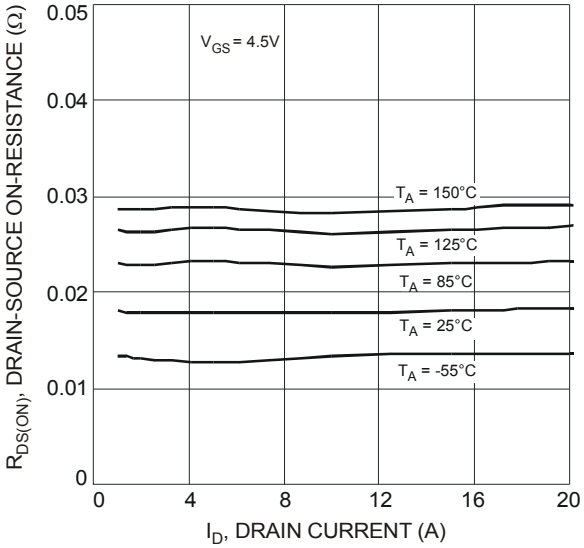

Fig. 4 Typical Drain-Source On-Resistance
vs. Drain Current and Temperature

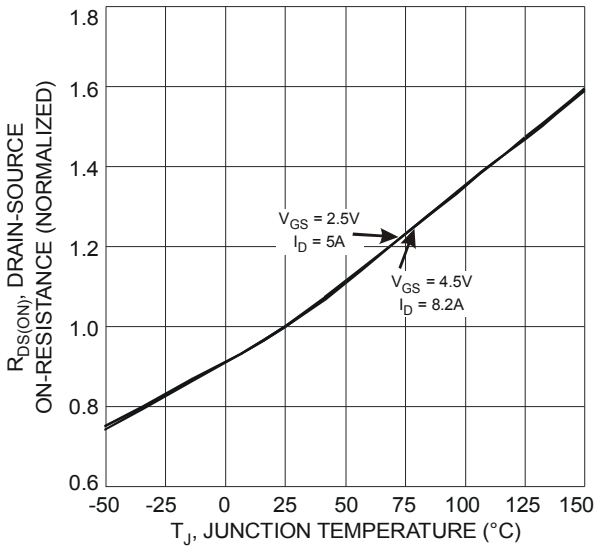

Fig. 5 On-Resistance Variation with Temperature

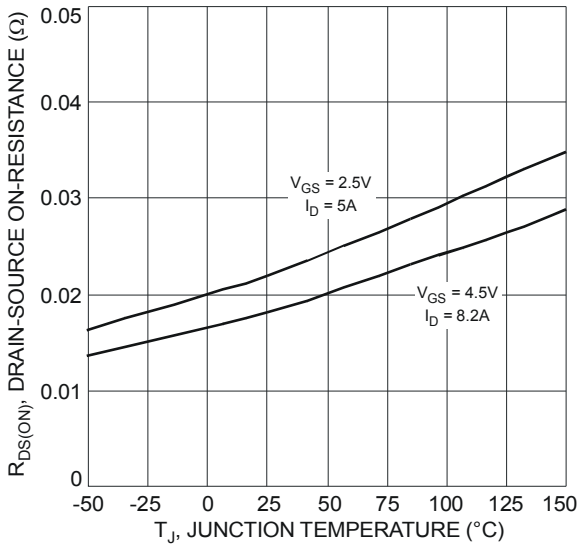

Fig. 6 On-Resistance Variation with Temperature

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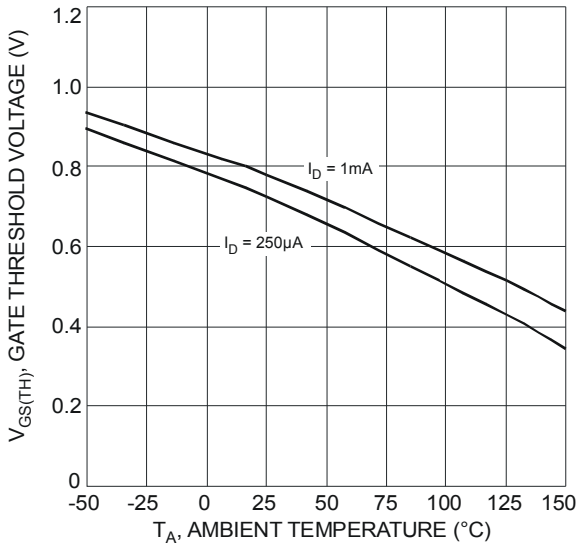

Fig. 7 Gate Threshold Variation vs. Ambient Temperature

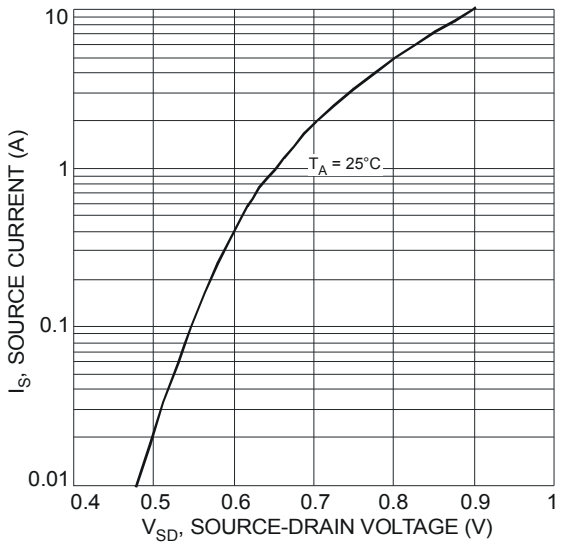

Fig. 8 Diode Forward Voltage vs. Current

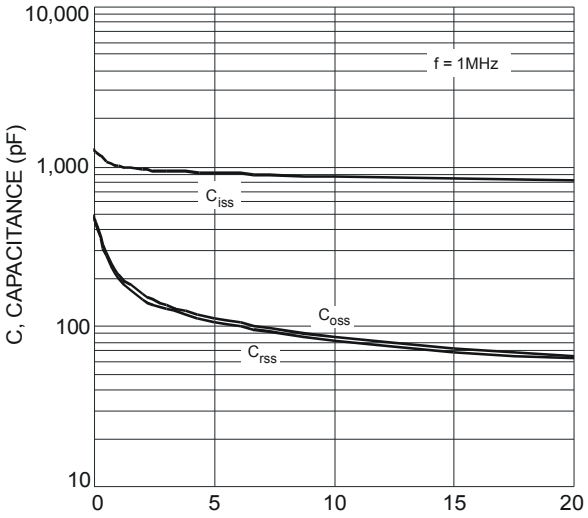

Fig. 9 Typical Capacitance

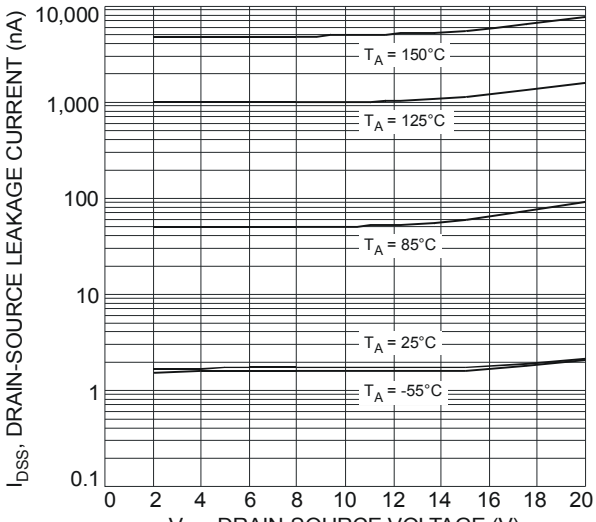

Fig. 10 Typical Drain-Source Leakage Current vs. Drain-Source Voltage

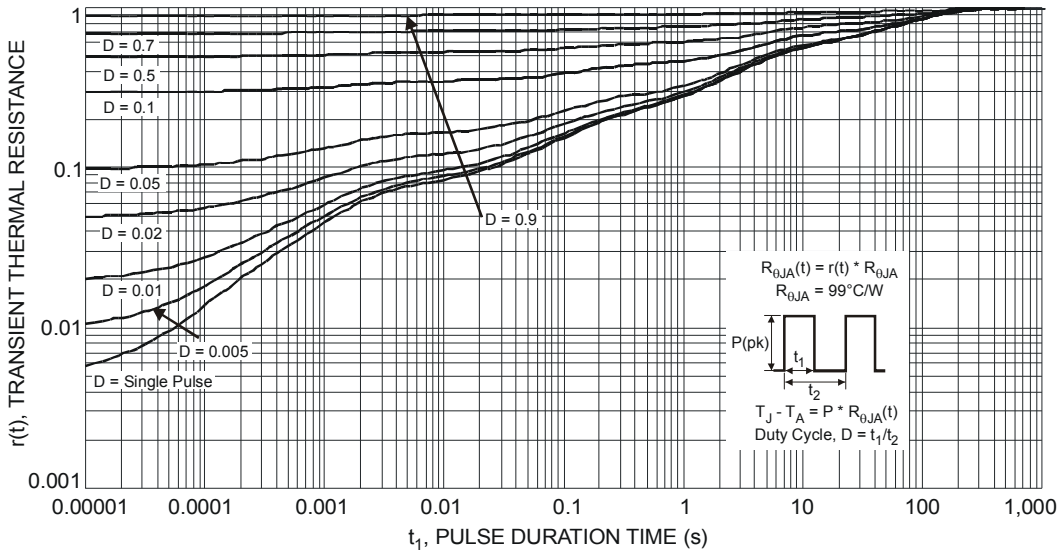

Fig. 11 Transient Thermal Response

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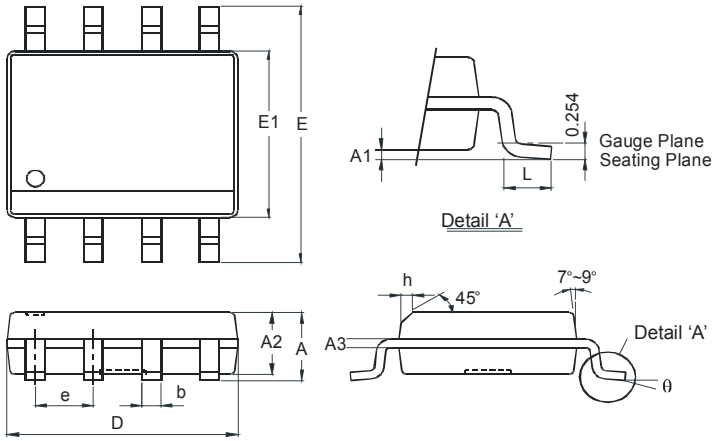
Package Outline Dimensions

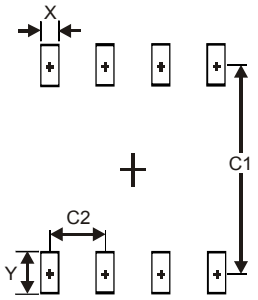
Please see AP02002 at http://www.diodes.com/datasheets/ap02002.pdf for latest version.



SOP-8L		
Dim	**Min**	**Max**
A	-	1.75
A1	0.10	0.20
A2	1.30	1.50
A3	0.15	0.25
b	0.3	0.5
D	4.85	4.95
E	5.90	6.10
E1	3.85	3.95
e	1.27 Typ	
h	-	0.35
L	0.62	0.82
θ	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)
X	0.60
Y	1.55
C1	5.4
C2	1.27

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