

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 5)	Steady State	T _A = +25°C	I _D	16	A
		T _A = +70°C		13	
Pulsed Drain Current (Note 6)			I _{DM}	64	A

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Total Power Dissipation (Note 5)	P _D	2.5	W
Thermal Resistance, Junction to Ambient	R _{θJA}	50	°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}	30	—	—	V	V _{GS} = 0V, I _D = 250μA
Zero Gate Voltage Drain Current	I _{DSS}	—	—	1	μA	V _{DS} = 30V, V _{GS} = 0V
Gate-Source Leakage	I _{GSS}	—	—	±100	nA	V _{GS} = ±20V, V _{DS} = 0V
ON CHARACTERISTICS (Note 7)						
Gate Threshold Voltage	V _{GS(th)}	1.3	—	2.1	V	V _{DS} = V _{GS} , I _D = 250μA
Static Drain-Source On-Resistance	R _{DS(on)}	—	5	7	mΩ	V _{GS} = 10V, I _D = 15A
			7.9	10		V _{GS} = 4.5V, I _D = 13A
Forward Transconductance	g _{fs}	—	16.4	—	S	V _{DS} = 10V, I _D = 15A
Diode Forward Voltage	V _{SD}	—	0.67	1.2	V	V _{GS} = 0V, I _S = 2.3A
DYNAMIC CHARACTERISTICS (Note 8)						
Input Capacitance	C _{iss}	—	2714	—	pF	V _{DS} = 15V, V _{GS} = 0V f = 1.0MHz
Output Capacitance	C _{oss}	—	436	—	pF	
Reverse Transfer Capacitance	C _{rss}	—	380	—	pF	
Gate Resistance	R _G	—	0.7	—	Ω	V _{DS} = 0V, V _{GS} = 0V, f = 1.0MHz
SWITCHING CHARACTERISTICS (Note 8)						
Total Gate Charge	Q _g	—	31.2 64.2	—	nC	V _{DS} = 15V, V _{GS} = 4.5V, I _D = 16A
Gate-Source Charge	Q _{gs}	—	7.1	—		V _{DS} = 15V, V _{GS} = 10V, I _D = 16A
Gate-Drain Charge	Q _{gd}	—	17.1	—		V _{DS} = 15V, V _{GS} = 10V, I _D = 16A
Turn-On Delay Time	t _{d(on)}	—	10.3	—	ns	V _{DS} = 15V, V _{GS} = 10V, I _D = 1A, R _G = 6.0Ω
Rise Time	t _r	—	14.8	—		
Turn-Off Delay Time	t _{d(off)}	—	85.1	—		
Fall Time	t _f	—	43.6	—		

- Notes: 5. Device mounted on 2 oz. Copper pads on FR-4 PCB, with R_{θJA} = +50°C
6. Pulse width ≤10μs, Duty Cycle ≤1%.
7. Short duration pulse test used to minimize self-heating effect.
8. Guaranteed by design. Not subject to product testing.

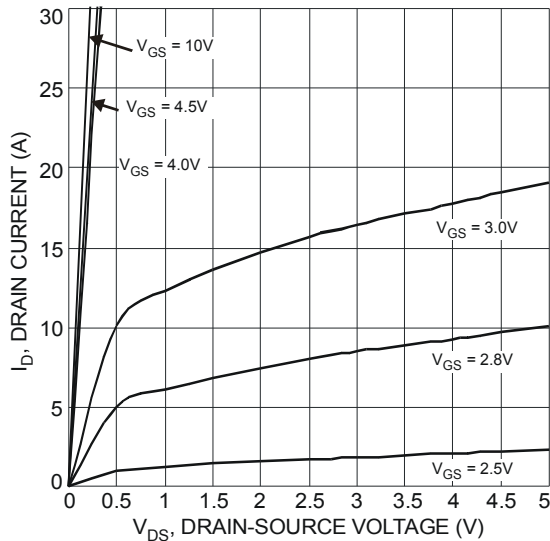


Fig. 1 Typical Output Characteristic

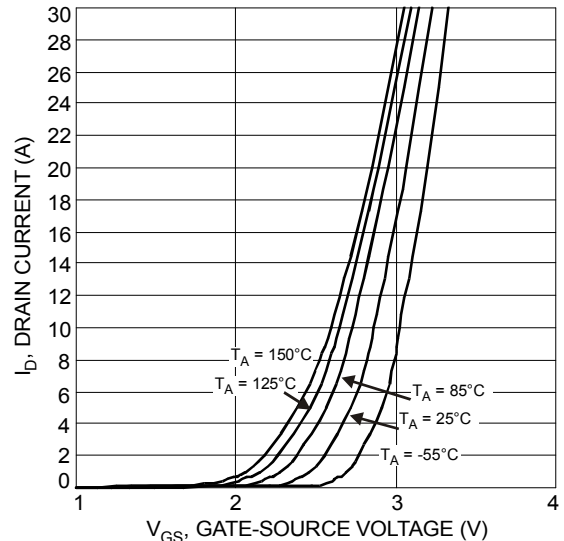


Fig. 2 Typical Transfer Characteristic

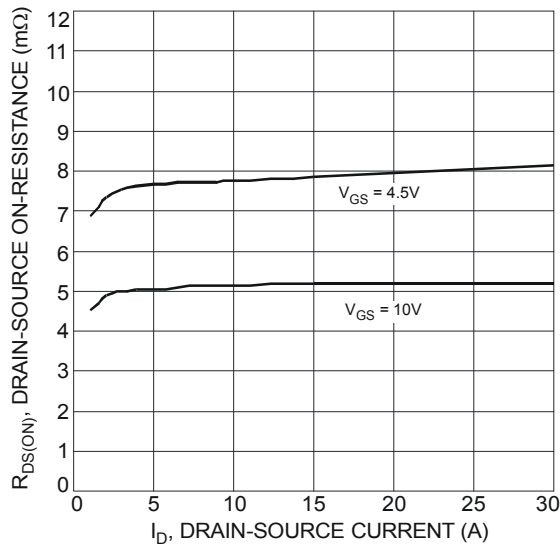


Fig. 3 Typical On-Resistance vs. Drain Current and Gate Voltage

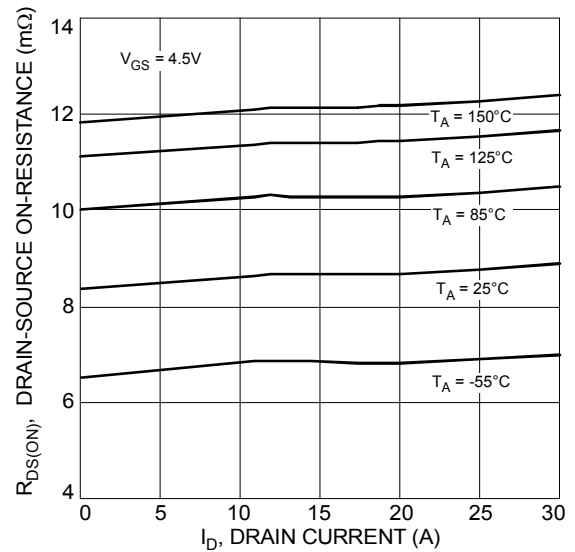


Fig. 4 Typical On-Resistance vs. Drain Current and Temperature

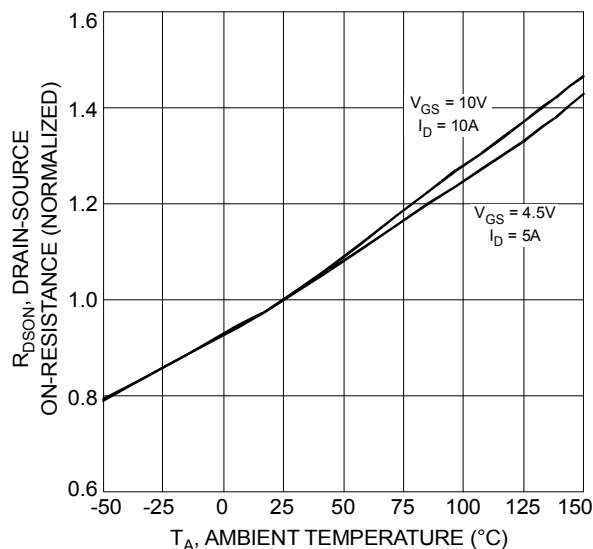


Fig. 5 On-Resistance Variation with Temperature

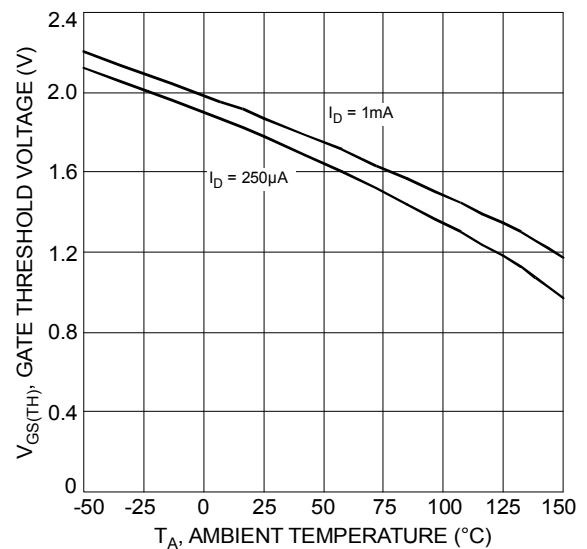


Fig. 6 Gate Threshold Variation vs. Ambient Temperature

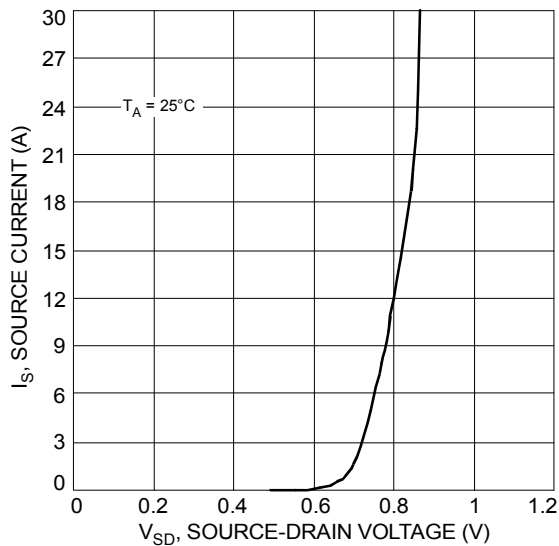


Fig. 7 Diode Forward Voltage vs. Current

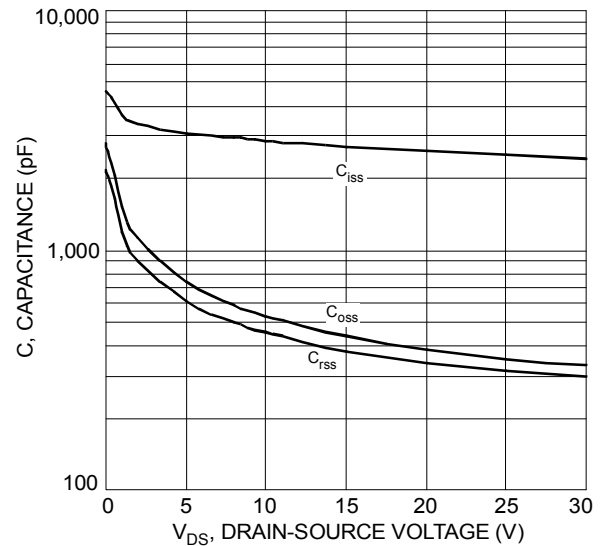


Fig. 8 Typical Total Capacitance

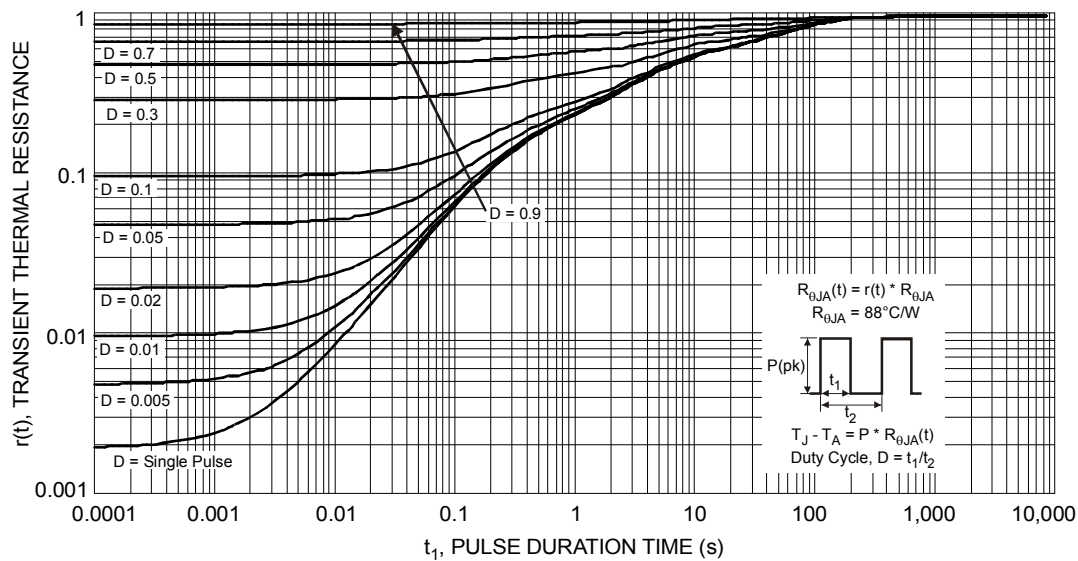
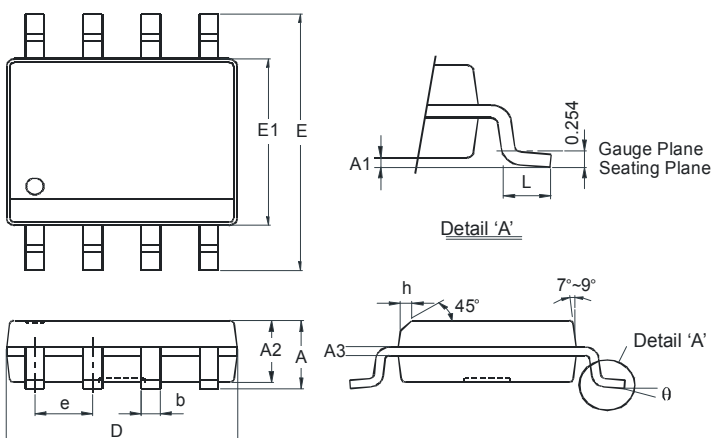


Fig. 9 Transient Thermal Response

Package Outline Dimensions

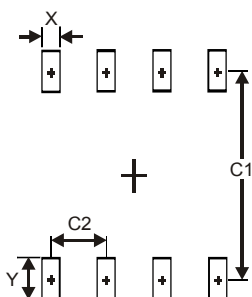
Please see AP02002 at <http://www.diodes.com/datasheets/ap02002.pdf> for latest version



SO-8		
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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