

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	I _D	-5.8 -4.6	A
		T _A = +25°C T _A = +70°C	
Pulsed Drain Current (10µs pulse, duty cycle = 1%)	I _{DM}	-40	A
Avalanche Current (Notes 7) L = 0.1mH	I _{AS}	-17	A
Avalanche Energy (Notes 7) L = 0.1mH	E _{AS}	15	mJ

Thermal Characteristics

Characteristic	Symbol	Value	Units
Total Power Dissipation (Note 5)	P _D	1.2 0.8	W
		T _A = +25°C T _A = +70°C	
Thermal Resistance, Junction to Ambient (Note 5)	R _{θJA}	100 58	°C/W
		Steady state t < 10s	
Total Power Dissipation (Note 6)	P _D	1.6 1.0	W
		T _A = +25°C T _A = +70°C	
Thermal Resistance, Junction to Ambient (Note 6)	R _{θJA}	77 45	°C/W
		Steady state t < 10s	
Thermal Resistance, Junction to Case (Note 6)	R _{θJC}	10	
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 T _J = +25°C	I _{DSS}	—	—	-1.0	µA	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	—	-2.4	V	V _{DS} = V _{GS} , I _D = -250µA
Static Drain-Source On-Resistance	R _{DS(on)}	—	19 28	32 50	mΩ	V _{GS} = -10V, I _D = -7A V _{GS} = -4.5V, I _D = -5A
Diode Forward Voltage	V _{SD}	—	-0.75	-1.2	V	V _{GS} = 0V, I _S = -1A
DYNAMIC CHARACTERISTICS (Note 9)						
Input Capacitance	C _{iss}	—	931	—	pF	V _{DS} = -15V, V _{GS} = 0V, f = 1.0MHz
Output Capacitance	C _{oss}	—	120	—	pF	
Reverse Transfer Capacitance	C _{rss}	—	102	—	pF	
Gate Resistance	R _g	—	23	—	Ω	V _{DS} = 0V, V _{GS} = 0V, f = 1MHz
Total Gate Charge (V _{GS} = -10V)	Q _g	—	19.3	—	nC	V _{DS} = -15V, I _D = -7A
Total Gate Charge (V _{GS} = -4.5V)	Q _g	—	9.7	—	nC	V _{DS} = -15V, I _D = -7A
Gate-Source Charge	Q _{gs}	—	2.5	—	nC	
Gate-Drain Charge	Q _{gd}	—	3.6	—	nC	
Turn-On Delay Time	t _{D(on)}	—	3.2	—	ns	
Turn-On Rise Time	t _r	—	11.5	—	ns	
Turn-Off Delay Time	t _{D(off)}	—	55.8	—	ns	V _{DS} = -15V, V _{GS} = -10V, R _L = 2.15Ω, R _{GEN} = 3Ω,
Turn-Off Fall Time	t _f	—	30.8	—	ns	
Body Diode Reverse Recovery Time	t _{rr}	—	13.6	—	nS	I _S = -7A, dI/dt = 100A/µs
Body Diode Reverse Recovery Charge	Q _{rr}	—	3.4	—	nC	I _S = -7A, dI/dt = 100A/µs

- 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 bias to bottom layer 1inch square copper plate
 - I_{AS} and E_{AS} rating are based on low frequency and duty cycles to keep T_J = 25°C
 - Short duration pulse test used to minimize self-heating effect.
 - Guaranteed by design. Not subject to product testing.

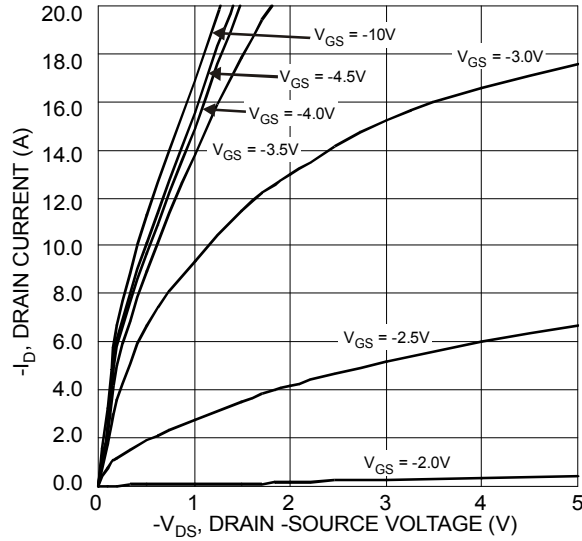


Figure 1 Typical Output Characteristics

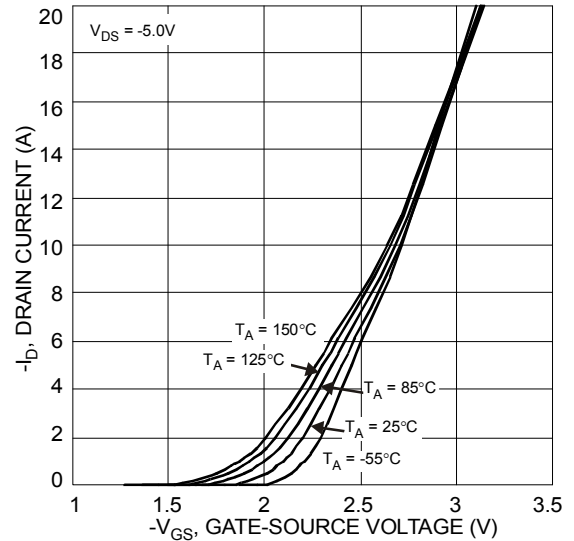


Figure 2 Typical Transfer Characteristics

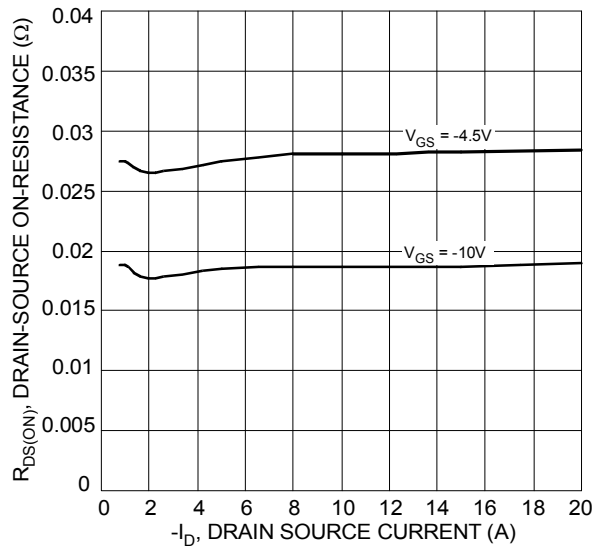


Figure 3 Typical On-Resistance vs. Drain Current and Gate Voltage

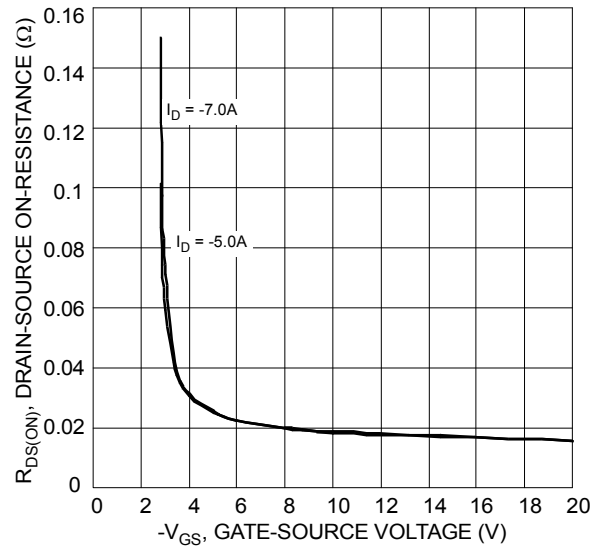


Figure 4 Typical Transfer Characteristics

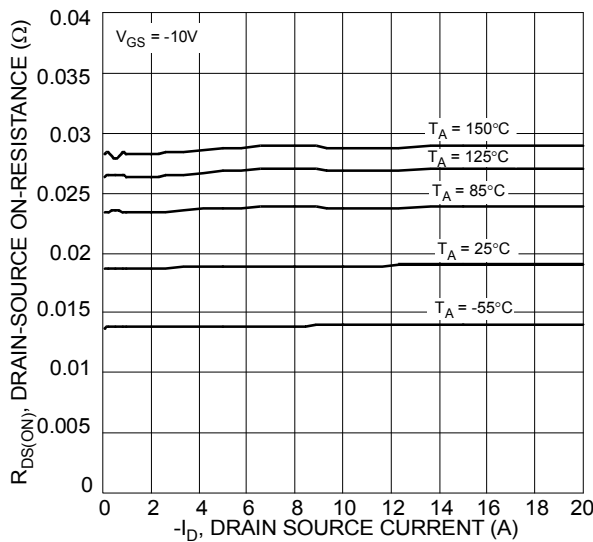


Figure 5 Typical On-Resistance vs. Drain Current and Temperature

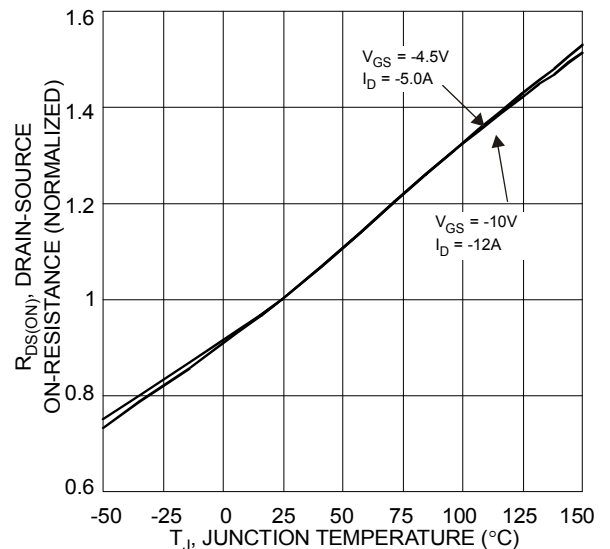
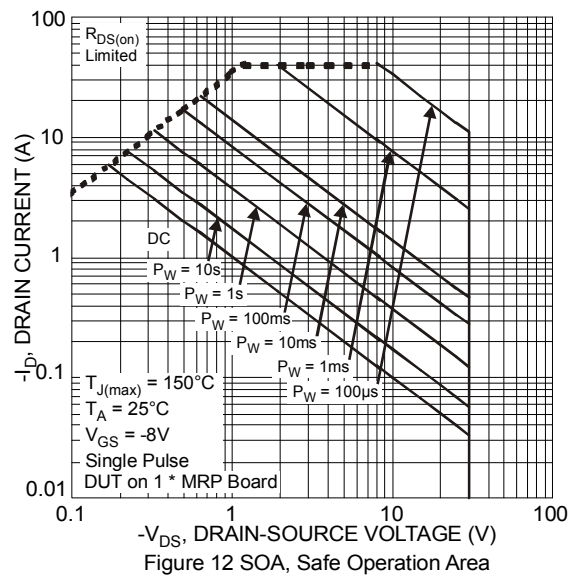
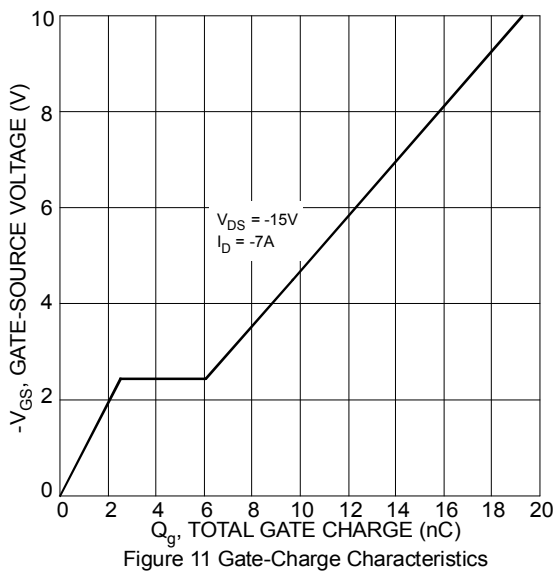
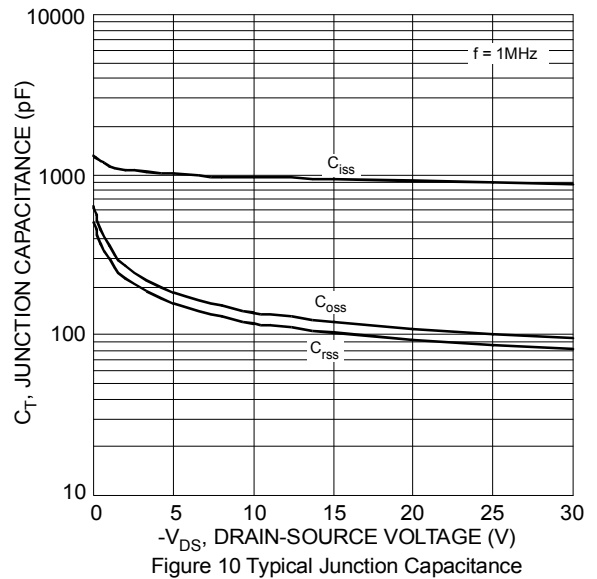
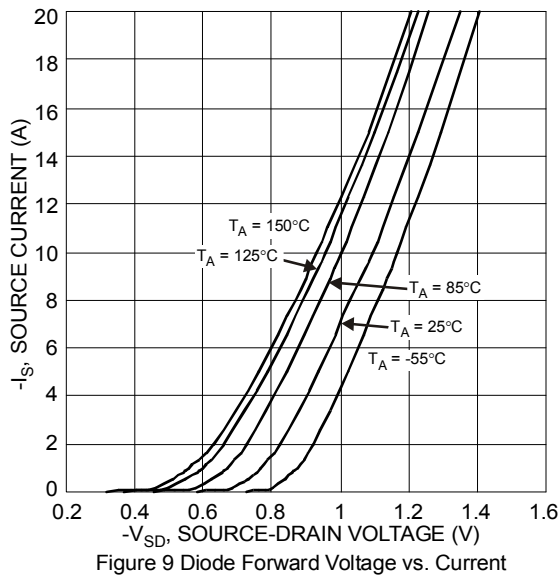
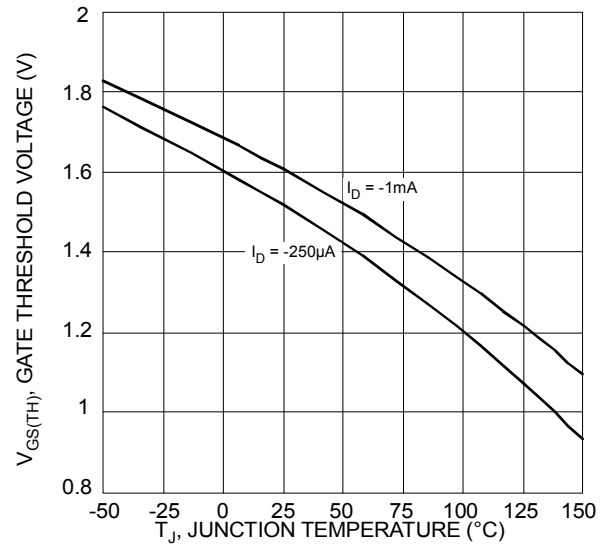
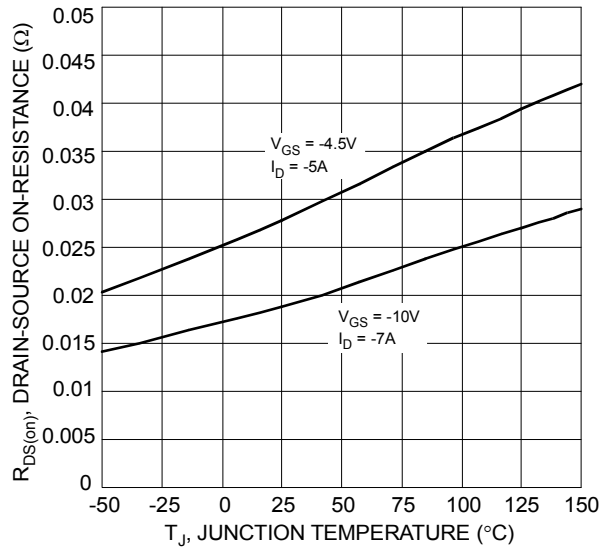
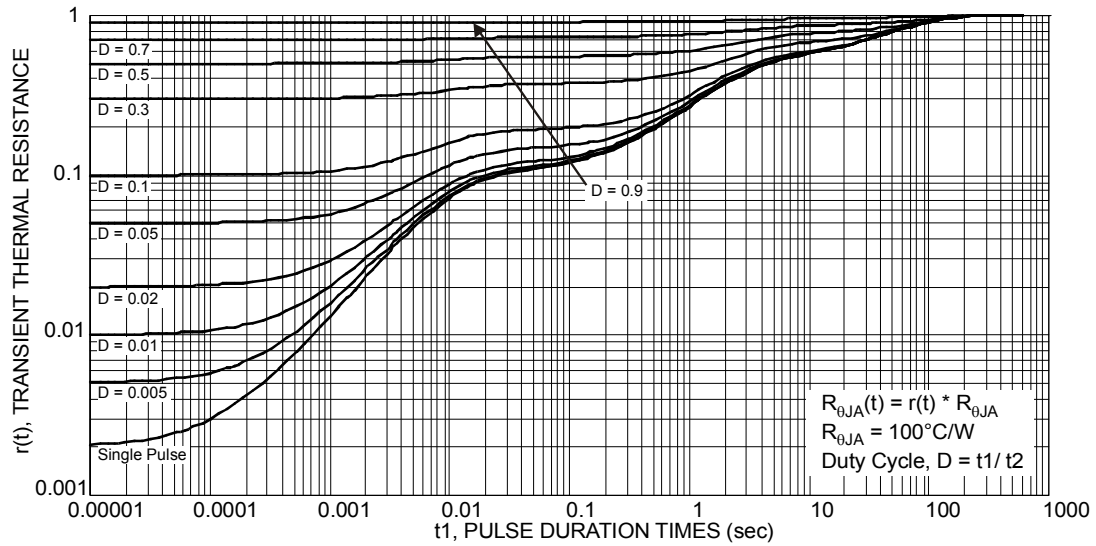


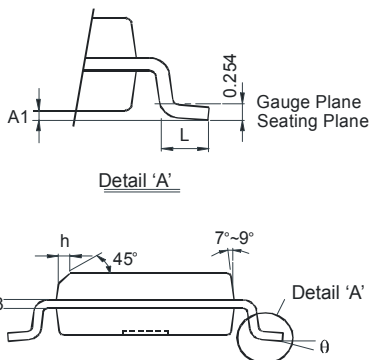
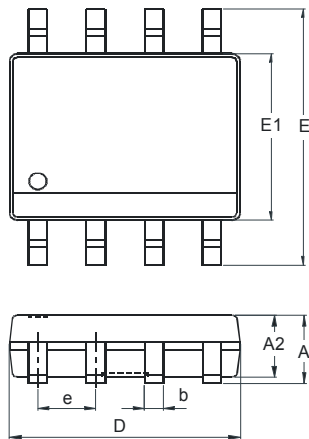
Figure 6 On-Resistance Variation with Temperature





Package Outline Dimensions

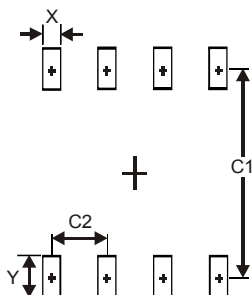
Please see AP02002 at <http://www.diodes.com/datasheets/ap02002.pdf> for latest version.



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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