

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

Characteristic	Symbol	Value	Units
Drain-Source Voltage	V _{DSS}	100	V
Gate-Source Voltage	V _{GSS}	±20	V
Continuous Drain Current (Note 5) V _{GS} = 10V	I _D	17	A
		13	
Pulsed Drain Current (10µs pulse, duty cycle = 1%)	I _{DM}	20	A
Avalanche Current, L = 1mH	I _{AS}	7.5	A
Avalanche Energy, L = 1mH	E _{AS}	28.5	mJ

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

Characteristic	Symbol	Value	Units
Total Power Dissipation (Note 5)	P _D	34	W
		22	
Thermal Resistance, Junction to Ambient (Note 5)	R _{θJA}	51	°C/W
Thermal Resistance, Junction to Case (Note 5)	R _{θJC}	3.6	
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}	100	—	—	V	V _{GS} = 0V, I _D = 250µA
Zero Gate Voltage Drain Current	I _{DSS}	—	—	1	µA	V _{DS} = 80V, 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)}	1.5	2	3	V	V _{DS} = V _{GS} , I _D = 250µA
Static Drain-Source On-Resistance	R _{DS(on)}	—	67	80	mΩ	V _{GS} = 10V, I _D = 3.3A
		—	69	99		V _{GS} = 6V, I _D = 3A
Diode Forward Voltage	V _{SD}	—	0.77	—	V	V _{GS} = 0V, I _S = 3.2A
DYNAMIC CHARACTERISTICS (Note 6)						
Input Capacitance	C _{iss}	—	1172	—	pF	V _{DS} = 50V, V _{GS} = 0V, f = 1MHz
Output Capacitance	C _{oss}	—	40.8	—		
Reverse Transfer Capacitance	C _{rss}	—	31.3	—		
Gate Resistance	R _G	—	1.6	—	Ω	V _{DS} = 0V, V _{GS} = 0V, f = 1MHz
Total Gate Charge (V _{GS} = 10V)	Q _g	—	25.2	—	nC	V _{DS} = 50V, I _D = 3.3A
Total Gate Charge (V _{GS} = 4.5V)	Q _g	—	12.2	—		
Gate-Source Charge	Q _{gs}	—	5.3	—		
Gate-Drain Charge	Q _{gd}	—	5.9	—		
Turn-On Delay Time	t _{D(on)}	—	5.4	—	ns	V _{DD} = 50V, R _G = 6.0Ω, I _D = 3.3A
Turn-On Rise Time	t _r	—	5.9	—		
Turn-Off Delay Time	t _{D(off)}	—	20	—		
Turn-Off Fall Time	t _f	—	7.3	—		
Body Diode Reverse Recovery Time	t _{rr}	—	19.7	—	ns	I _F = 3.3A, dI/dt = 100A/µs
Body Diode Reverse Recovery Charge	Q _{rr}	—	15.9	—	nC	

- Notes: 5. Device mounted on FR-4 substrate PC board, 2oz copper, with 1inch square copper plate.
6. Guaranteed by design. Not subject to product testing.
7. Short duration pulse test used to minimize self-heating effect.

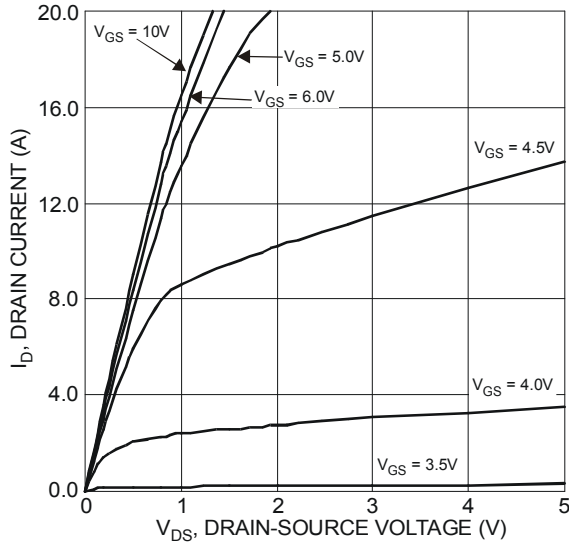


Figure 1 Typical Output Characteristics

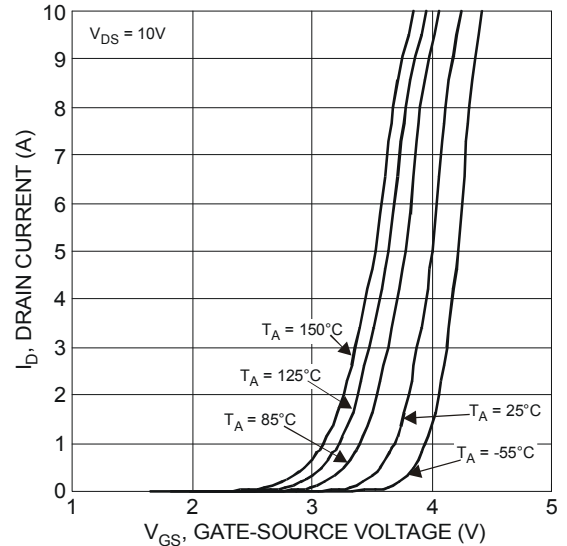


Figure 2 Typical Transfer Characteristics

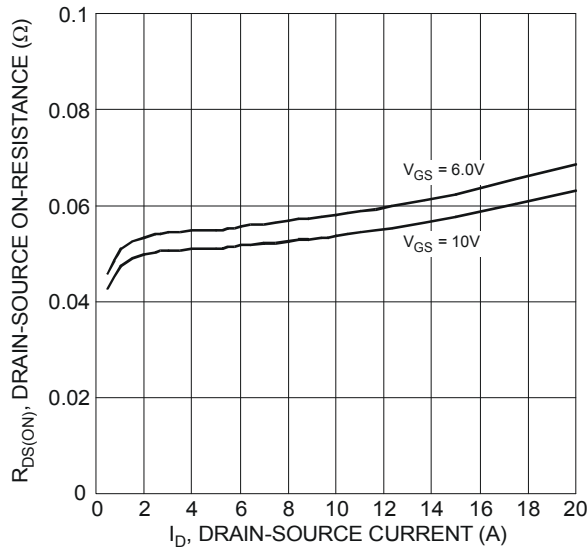


Figure 3 Typical On-Resistance vs. Drain Current and Gate Voltage

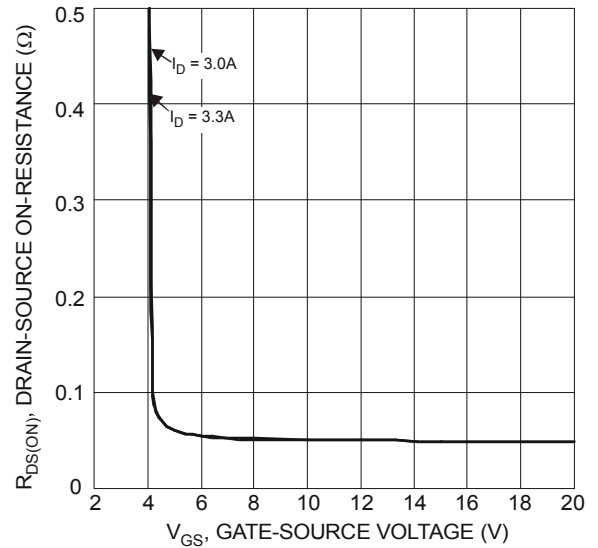


Figure 4 Typical Transfer Characteristics

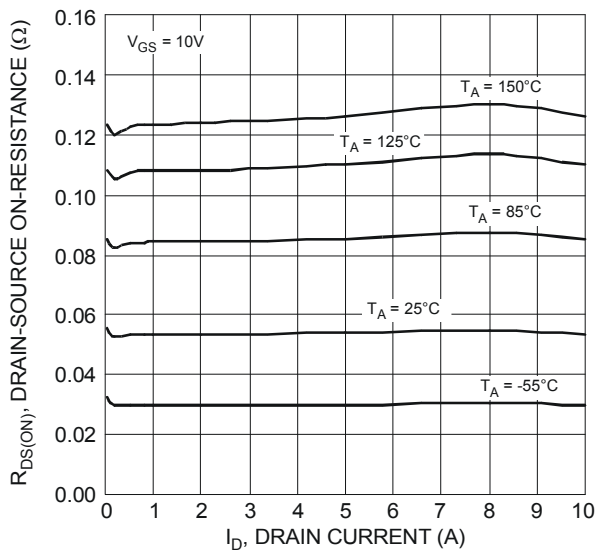


Figure 5 Typical On-Resistance vs. Drain Current and Temperature

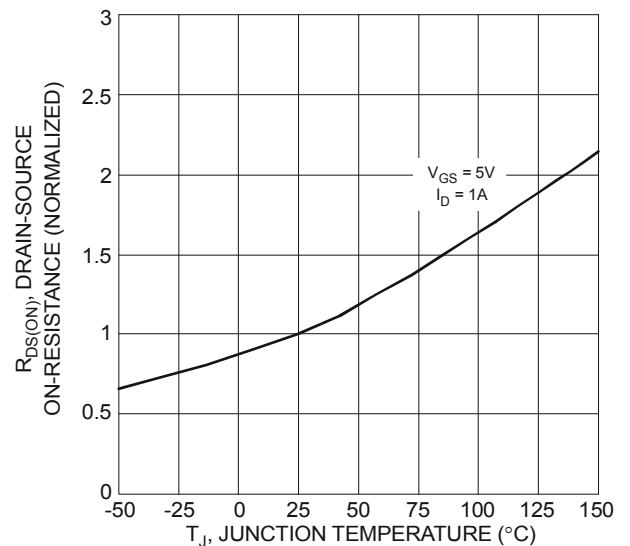
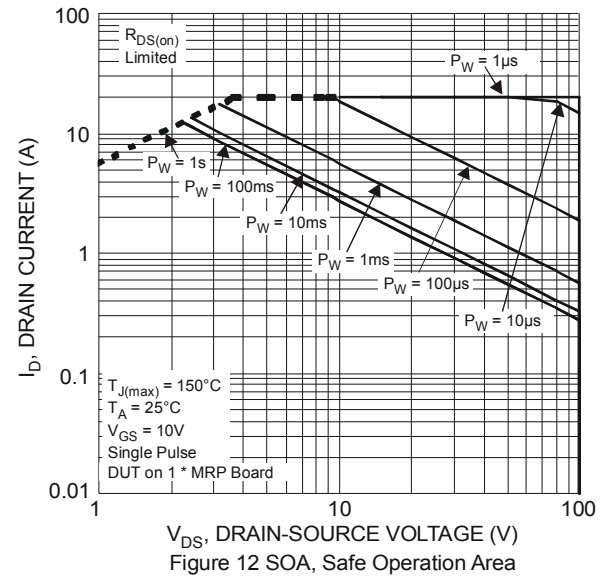
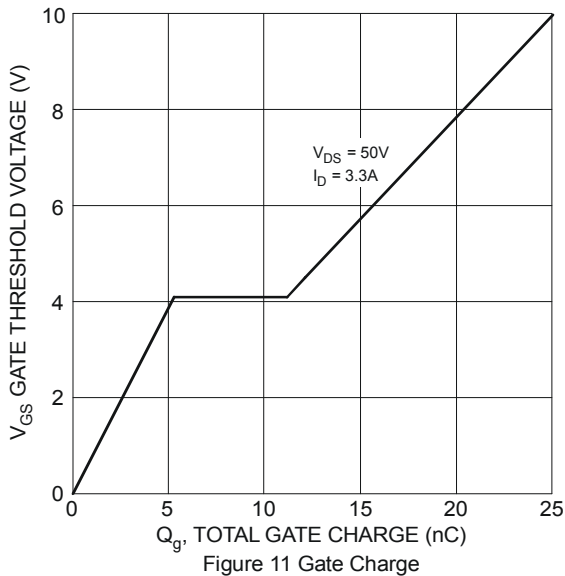
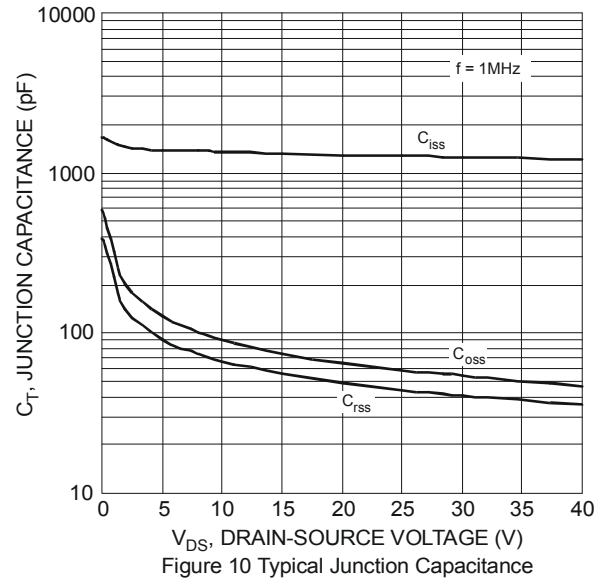
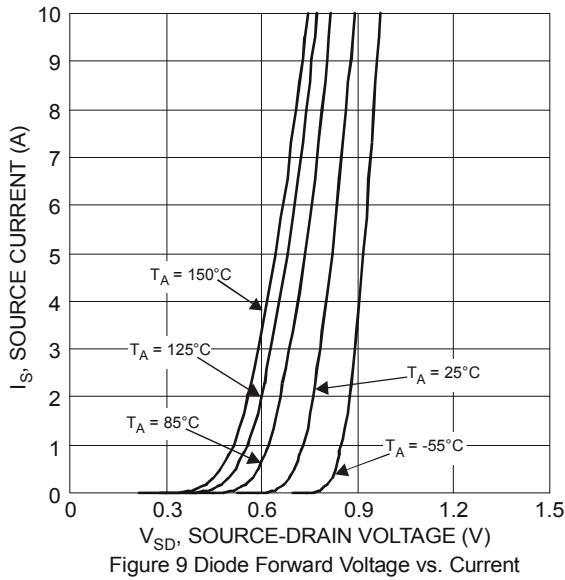
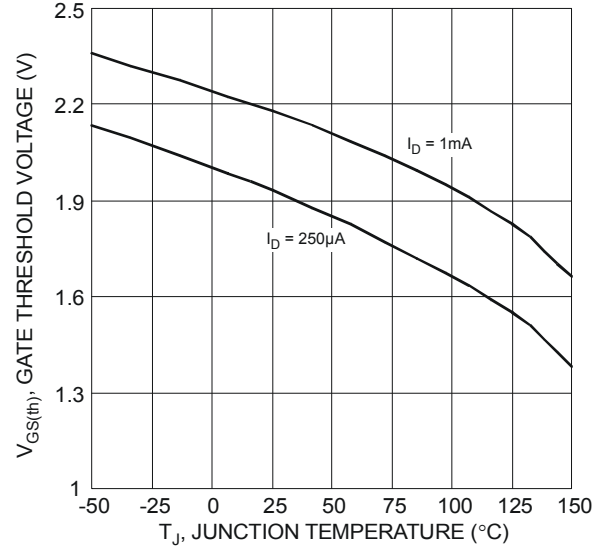
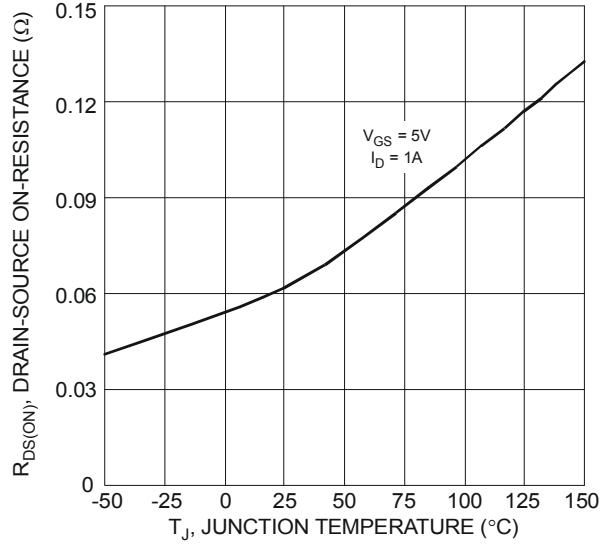
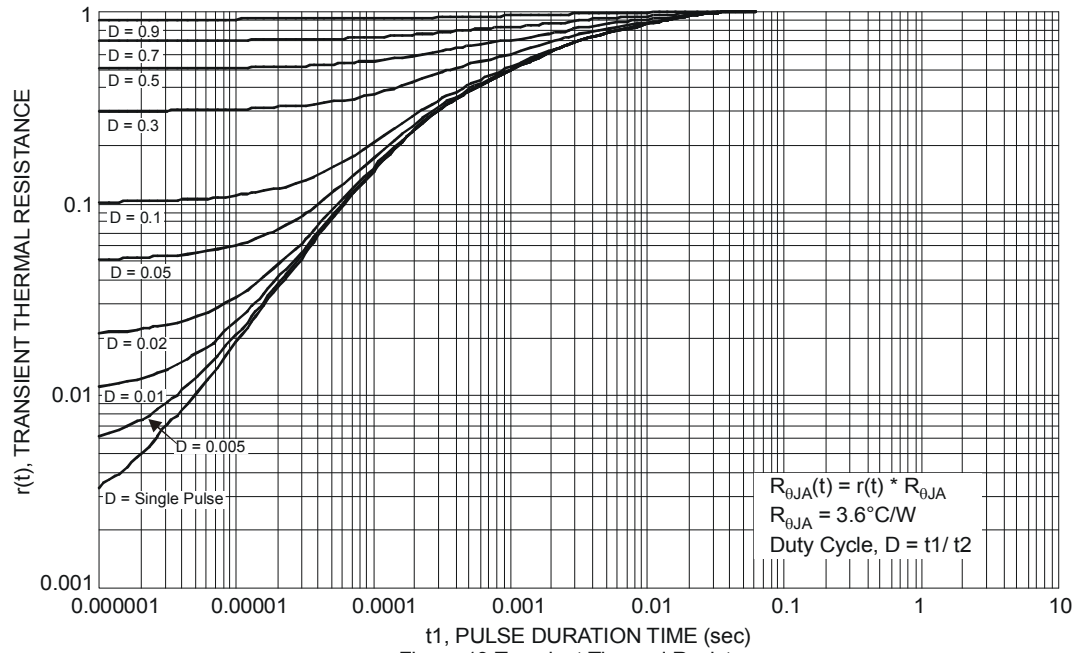


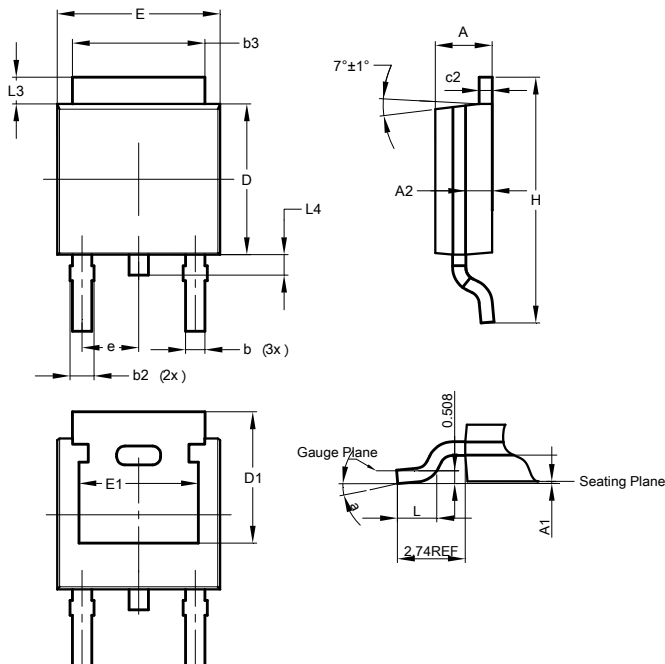
Figure 6 On-Resistance Variation with Temperature





Package Outline Dimensions

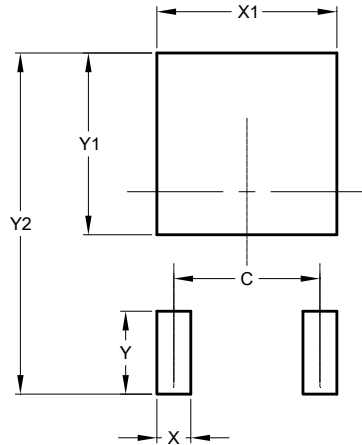
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TO252 (DPAK)			
Dim	Min	Max	Typ
A	2.19	2.39	2.29
A1	0.00	0.13	0.08
A2	0.97	1.17	1.07
b	0.64	0.88	0.783
b2	0.76	1.14	0.95
b3	5.21	5.46	5.33
c2	0.45	0.58	0.531
D	6.00	6.20	6.10
D1	5.21	-	-
e	-	-	2.286
E	6.45	6.70	6.58
E1	4.32	-	-
H	9.40	10.41	9.91
L	1.40	1.78	1.59
L3	0.88	1.27	1.08
L4	0.64	1.02	0.83
a	0°	10°	-
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)
C	4.572
X	1.060
X1	5.632
Y	2.600
Y1	5.700
Y2	10.700

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