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}	±8	
Continuous Drain Current	V_{GS} = 4.5V	(Note 6)	I_D	0.65	A
		T_A = +70°C (Note 6)		0.52	
		(Note 5)	I_D	0.55	
Pulsed Drain Current		(Note 7)	I_{DM}	2.5	

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

Characteristic		Symbol	Value	Unit
Power Dissipation	(Note 6)	P_D	490	mW
	(Note 5)		390	
Thermal Resistance, Junction to Ambient	(Note 6)	$R_{\theta JA}$	255	°C/W
	(Note 5)		327	
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	I_{DSS}	—	—	1	μA	V_{DS} = 30V, V_{GS} = 0V
Gate-Source Leakage	I_{GSS}	—	—	3	μA	V_{GS} = ±8V, V_{DS} = 0V
ON CHARACTERISTICS (Note 8)						
Gate Threshold Voltage	$V_{GS(th)}$	0.45	—	0.95	V	V_{DS} = V_{GS}, I_D = 250μA
Static Drain-Source On-Resistance	$R_{DS(on)}$	—	400	760	mΩ	V_{GS} = 4.5V, I_D = 200mA
			480	930		V_{GS} = 2.5V, I_D = 100mA
			617	1500		V_{GS} = 1.8V, I_D = 75mA
Forward Transfer Admittance	$\|Y_{fs}\|$	40	—	—	mS	V_{DS} = 3V, I_D = 10mA
Diode Forward Voltage (Note 8)	V_{SD}	—	0.7	1.2	V	V_{GS} = 0V, I_S = 300mA
DYNAMIC CHARACTERISTICS (Note 9)						
Input Capacitance	C_{iss}	—	42.2	—	pF	V_{DS} = 25V, V_{GS} = 0V, f = 1.0MHz
Output Capacitance	C_{oss}	—	4.5	—	pF	
Reverse Transfer Capacitance	C_{rss}	—	3,4	—	pF	
Gate Resistance	R_g	—	468	—	Ω	V_{DS} = 0V, V_{GS} = 0V, f = 1MHz
Total Gate Charge	Q_g	—	0.7	—	nC	V_{GS} = 4.5V, V_{DS} = 15V, I_D = 200mA
Gate-Source Charge	Q_{gs}	—	0.11	—	nC	
Gate-Drain Charge	Q_{gd}	—	0.15	—	nC	
Turn-On Delay Time	$t_{D(on)}$	—	10.5	—	ns	V_{DS} = 10V, I_D = 200mA, V_{GS} = 4.5V, R_G = 6Ω
Turn-On Rise Time	t_r	—	7.8	—	ns	
Turn-Off Delay Time	$t_{D(off)}$	—	80.6	—	ns	
Turn-Off Fall Time	t_f	—	23.4	—	ns	

Notes:
5. Device mounted on FR-4 PCB, with minimum recommended pad layout.
6. Device mounted on FR-4 PCB, with minimum recommended pad layout, except the device measured at t ≤ 10 sec.
7. Device mounted on minimum recommended pad layout test board, 10μs pulse duty cycle = 1%.
8. Short duration pulse test used to minimize self-heating effect.
9. Guaranteed by design. Not subject to production testing

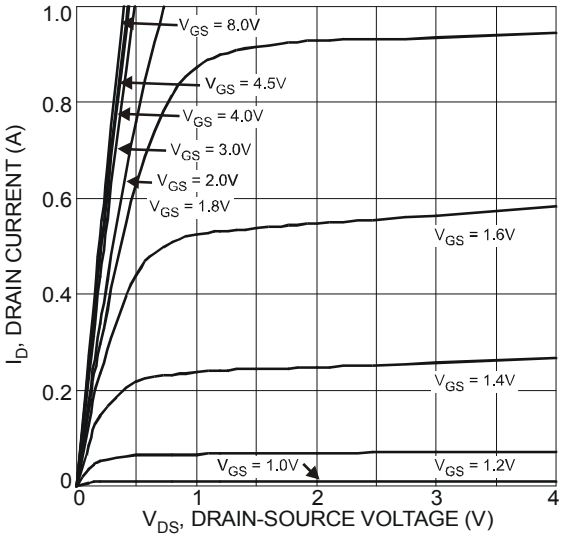


Fig.1 Typical Output Characteristic

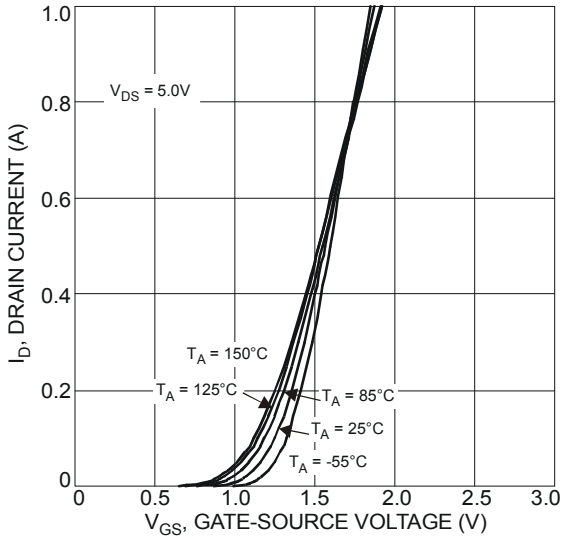


Fig. 2 Typical Transfer Characteristics

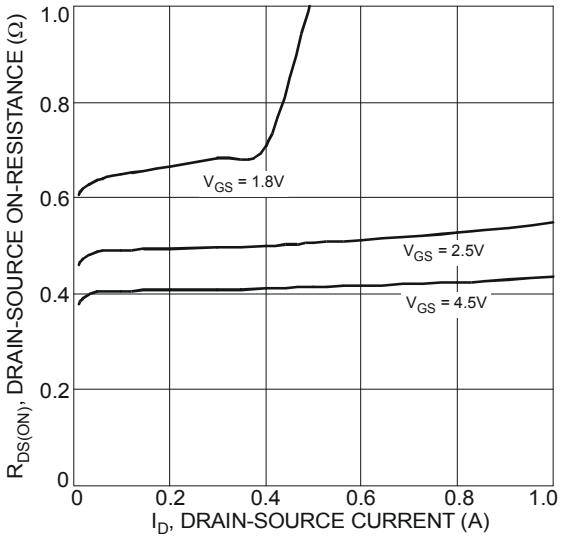


Fig. 3 Typical On-Resistance vs. Drain Current and Gate Voltage

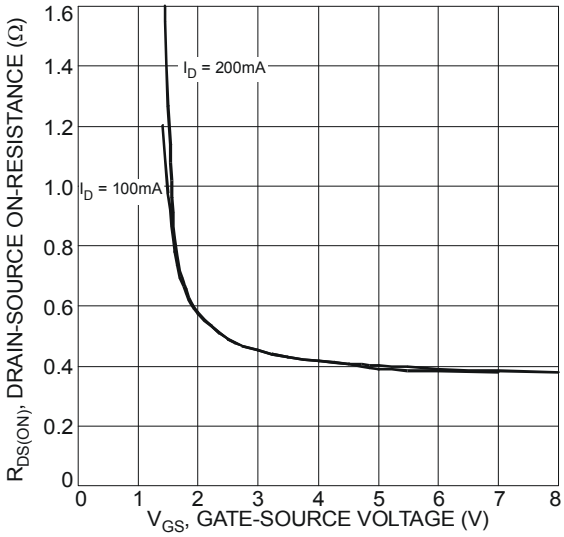


Fig. 4 Typical Drain-Source On-Resistance vs. Gate-Source Voltage

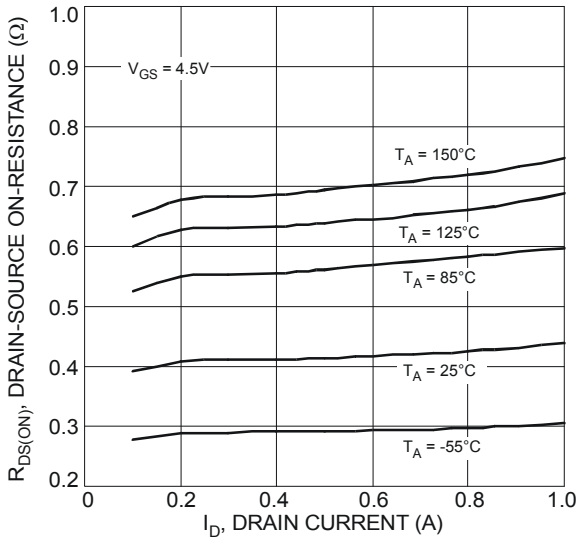


Fig. 5 Typical On-Resistance vs. Drain Current and Temperature

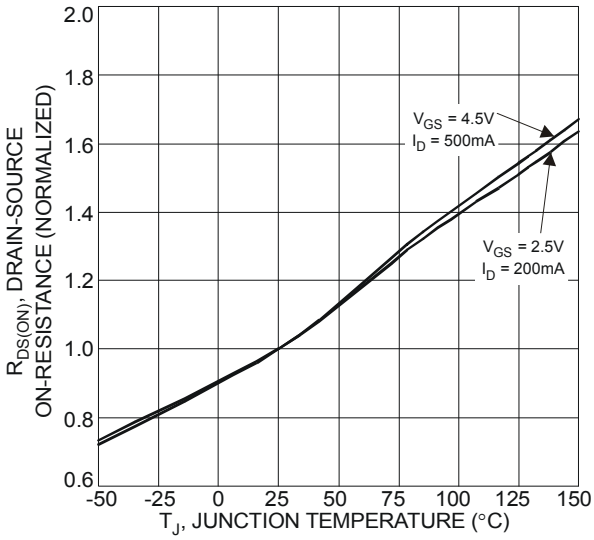


Fig. 6 On-Resistance Variation with Temperature

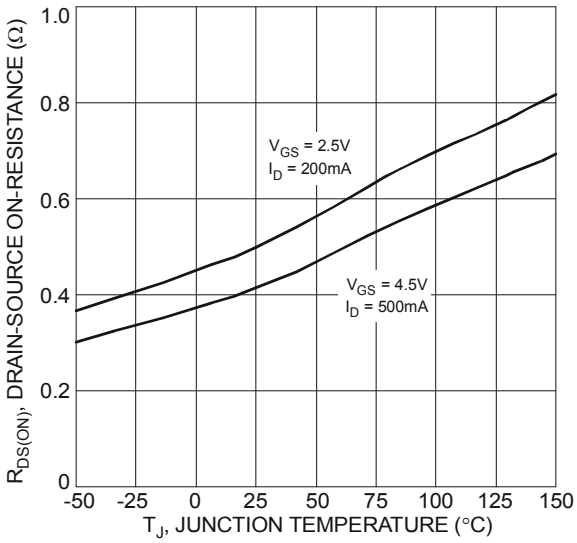


Fig. 7 On-Resistance Variation with Temperature

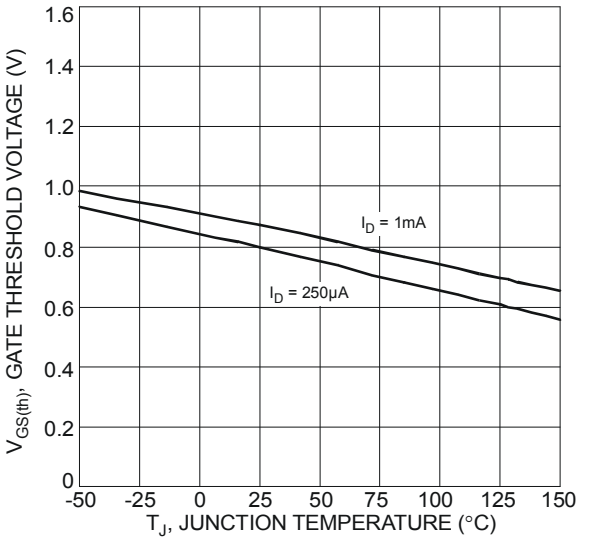


Fig. 8 Gate Threshold Variation vs. Ambient Temperature

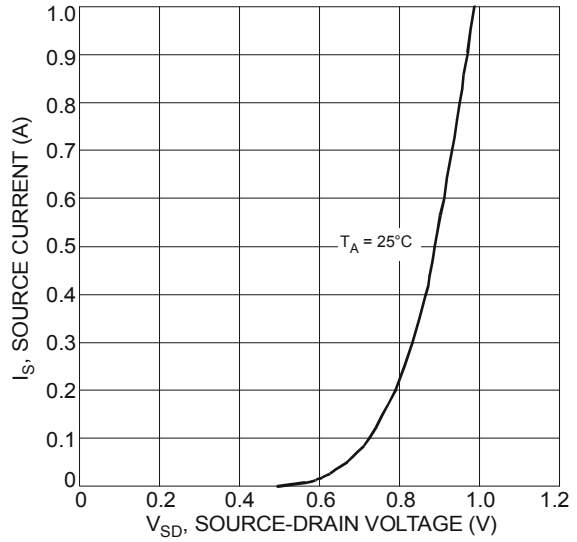


Fig. 9 Diode Forward Voltage vs. Current

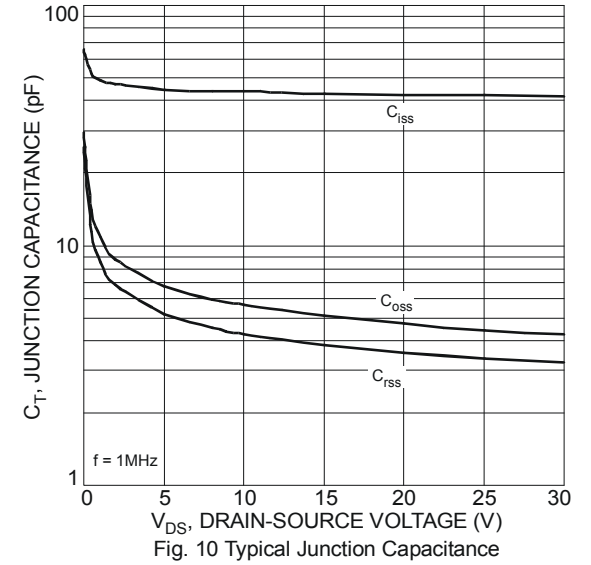


Fig. 10 Typical Junction Capacitance

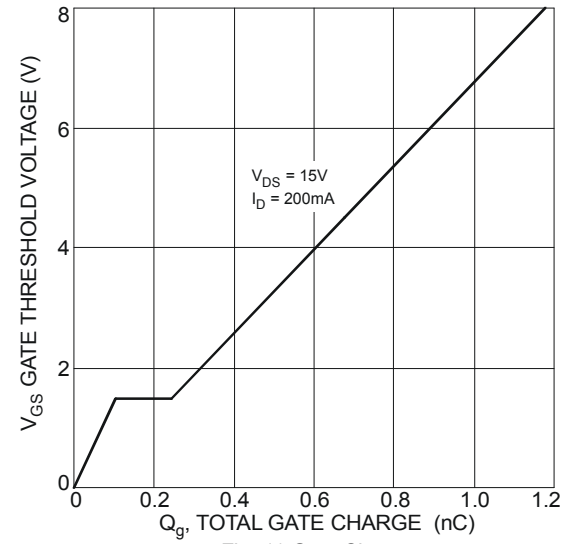


Fig. 11 Gate Charge

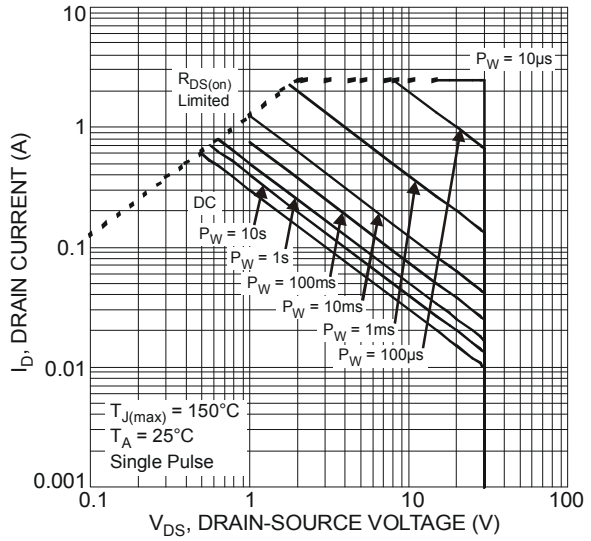


Fig. 12 SOA, Safe Operation Area

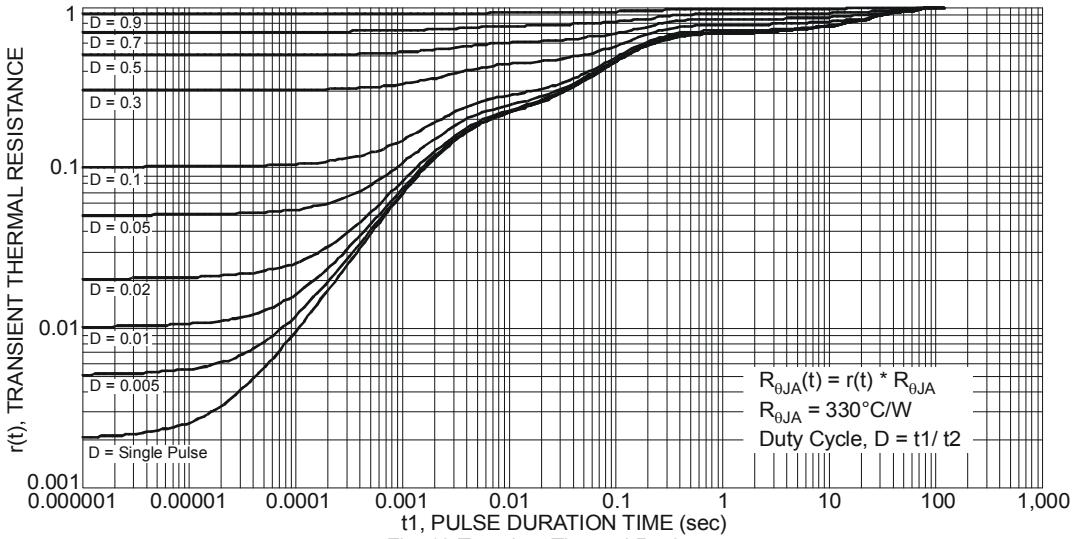
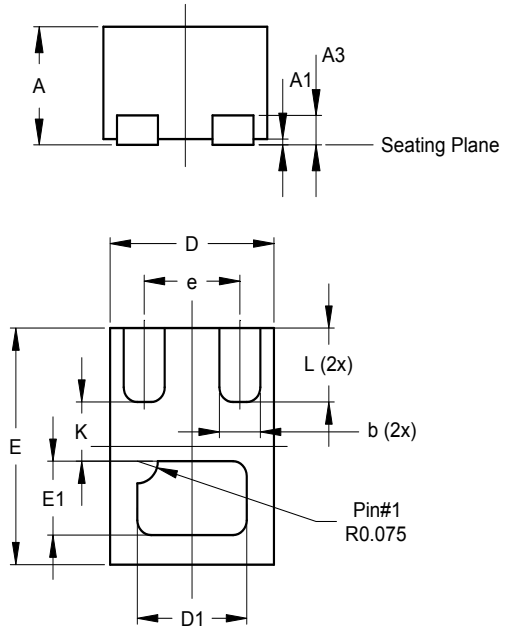


Fig. 13 Transient Thermal Resistance

Package Outline Dimensions

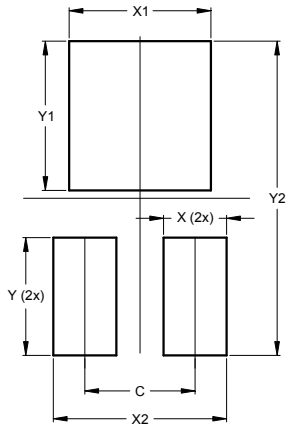
Please see AP02002 at http://www.diodes.com/datasheets/ap02002.pdf for latest version.



X2-DFN0806-3			
Dim	**Min**	**Max**	**Typ**
A	0.375	0.40	0.39
A1	0	0.05	0.02
A3	-	-	0.10
b	0.10	0.20	0.15
D	0.55	0.65	0.60
D1	0.35	0.45	0.40
E	0.75	0.85	0.80
E1	0.20	0.30	0.25
e	-	-	0.35
K	-	-	0.20
L	0.20	0.30	0.25
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	0.350
X	0.200
X1	0.450
X2	0.550
Y	0.375
Y1	0.475
Y2	1.000