

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 (Note 6) V _{GS} = 4.5V	I _D	1.2	A
Steady State T _A = +25°C T _A = +70°C		0.9	
Maximum Continuous Body Diode Forward Current (Note 6)	I _S	1.2	A
Pulsed Drain Current (10μs Pulse, Duty Cycle = 1%)	I _{DM}	3	A

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

Characteristic	Symbol	Value	Unit
Total Power Dissipation (Note 5)	P _D	0.52	W
Thermal Resistance, Junction to Ambient (Note 5)	R _{θJA}	240	°C/W
Total Power Dissipation (Note 6)	P _D	0.97	W
Thermal Resistance, Junction to Ambient (Note 6)	R _{θJA}	129	°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 = 10μA
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 7)						
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)}	—	297	460	mΩ	V _{GS} = 4.5V, I _D = 200mA
		—	311	560		V _{GS} = 2.5V, I _D = 100mA
		—	335	730		V _{GS} = 1.8V, I _D = 75mA
		—	—	—		V _{GS} = 1.8V, I _D = 75mA
Diode Forward Voltage	V _{SD}	—	1.0	1.2	V	V _{GS} = 0V, I _S = 300mA
DYNAMIC CHARACTERISTICS (Note 8)						
Input Capacitance	C _{iss}	—	73	—	pF	V _{DS} = 25V, V _{GS} = 0V, f = 1.0MHz
Output Capacitance	C _{oss}	—	7.2	—	pF	
Reverse Transfer Capacitance	C _{rss}	—	5	—	pF	
Gate Resistance	R _g	—	902	—	Ω	V _{DS} = 0V, V _{GS} = 0V, f = 1MHz
Total Gate Charge	Q _g	—	5.5	—	nC	V _{GS} = 4.5V, V _{DS} = 15V, I _D = 1A
Gate-Source Charge	Q _{gs}	—	0.8	—	nC	
Gate-Drain Charge	Q _{gd}	—	1.4	—	nC	
Turn-On Delay Time	t _{D(ON)}	—	2.5	—	ns	V _{DS} = 10V, I _D = 1A V _{GS} = 10V, R _G = 6Ω
Turn-On Rise Time	t _R	—	3.1	—	ns	
Turn-Off Delay Time	t _{D(OFF)}	—	477	—	ns	
Turn-Off Fall Time	t _F	—	123	—	ns	
Reverse Recovery Time	t _{RR}	—	59	—	ns	I _F = 1A, di/dt = 100A/μs
Reverse Recovery Charge	Q _{RR}	—	25	—	nC	I _F = 1A, di/dt = 100A/μs

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

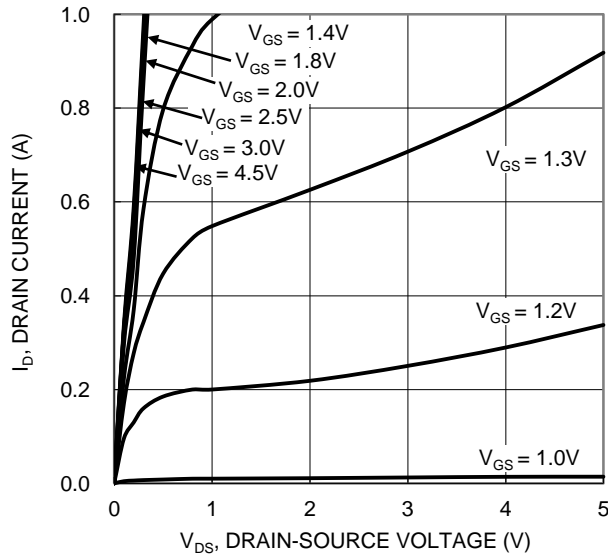


Figure 1. Typical Output Characteristic

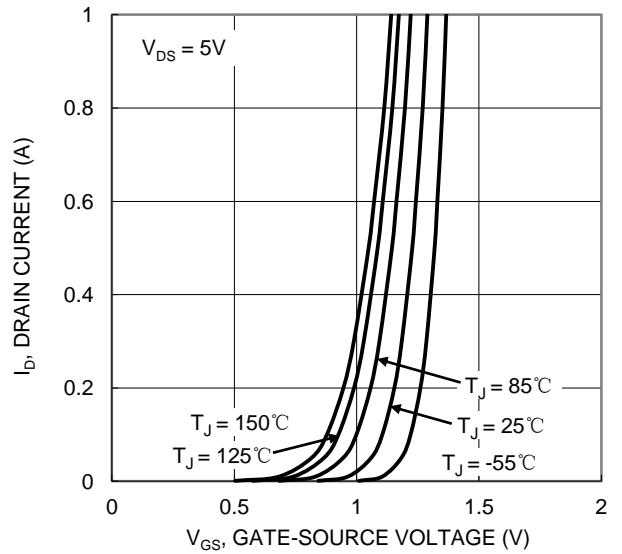


Figure 2. Typical Transfer Characteristic

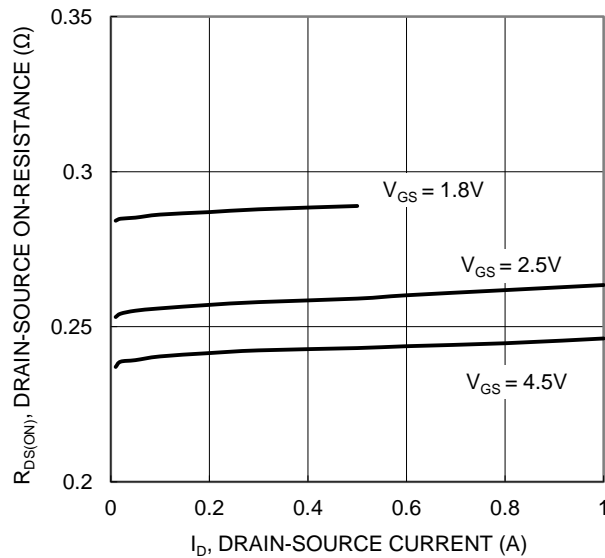


Figure 3. Typical On-Resistance vs. Drain Current and Gate Voltage

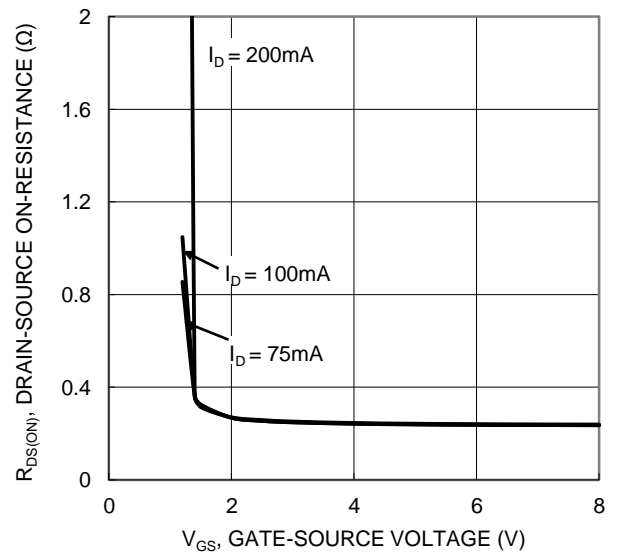


Figure 4. Typical Transfer Characteristic

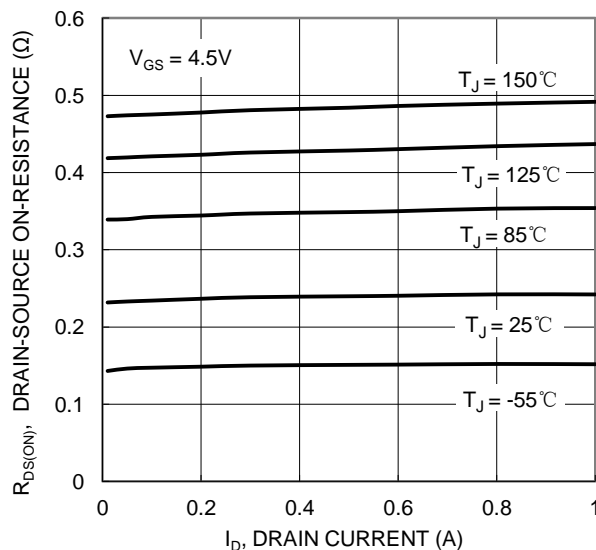


Figure 5. Typical On-Resistance vs. Drain Current and Junction Temperature

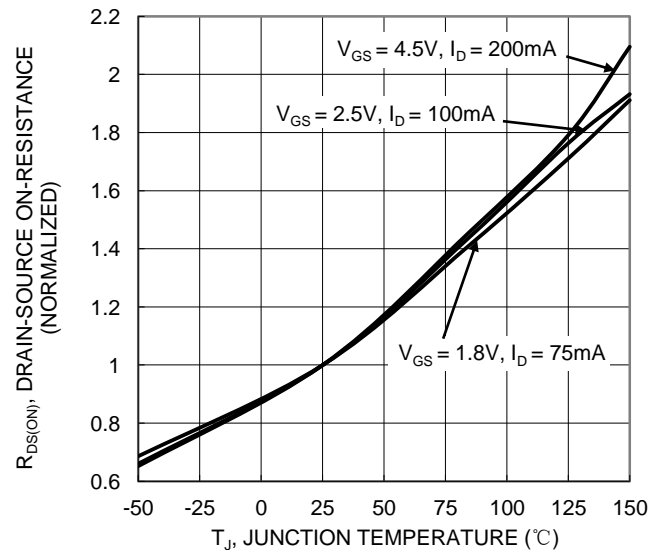
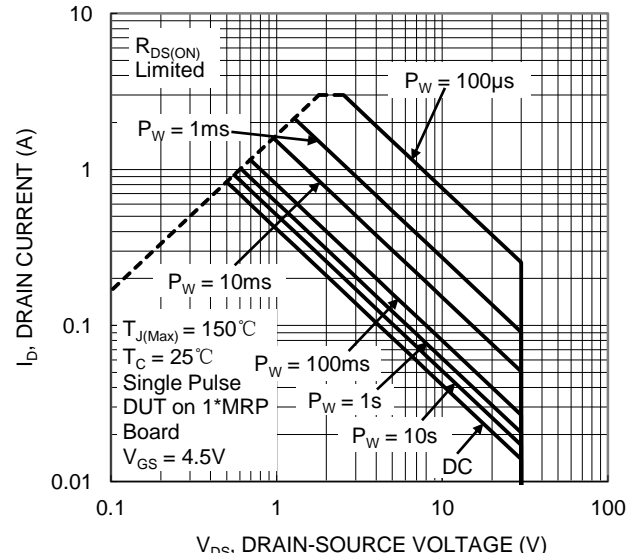
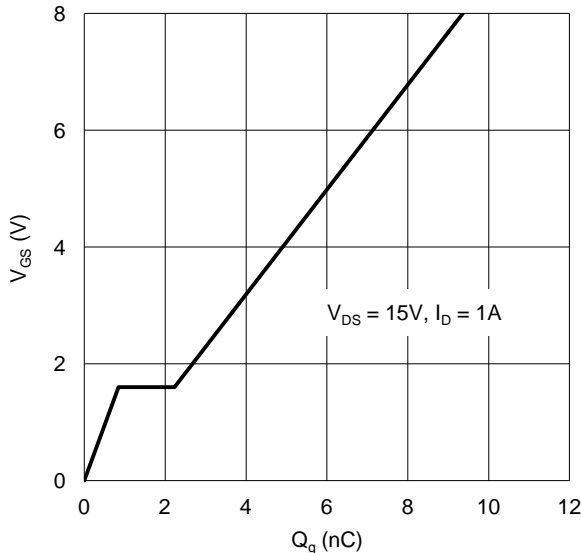
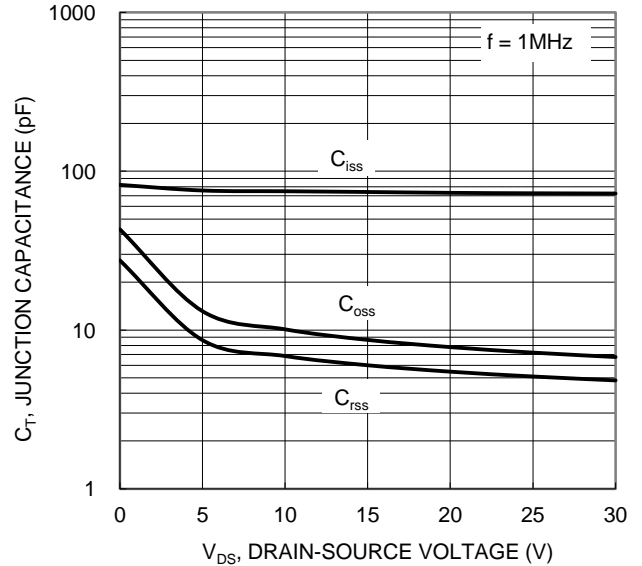
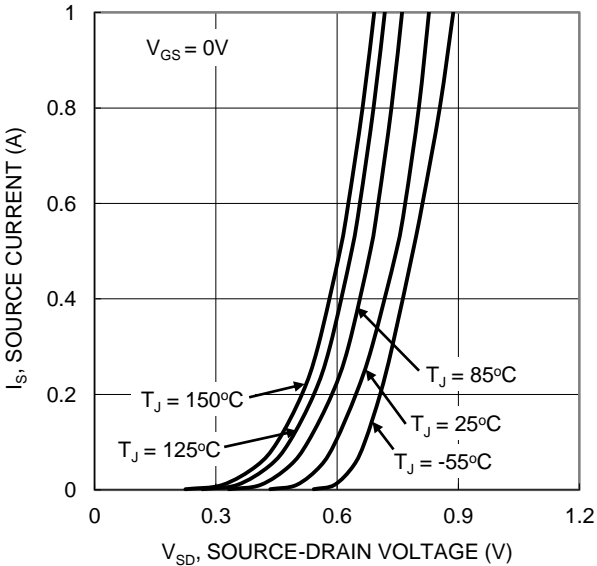
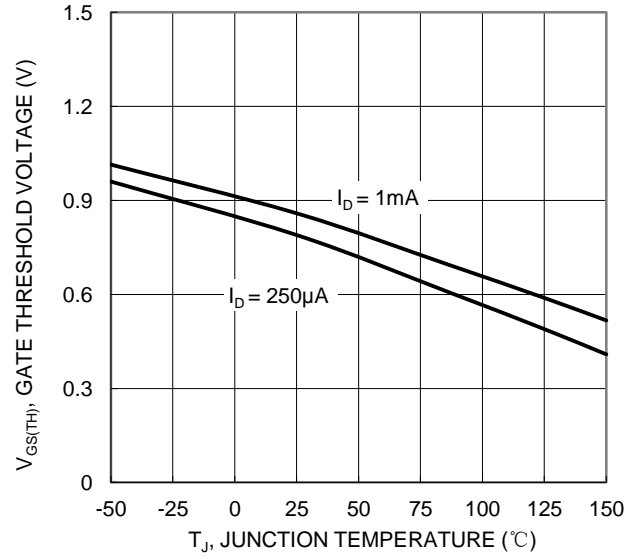
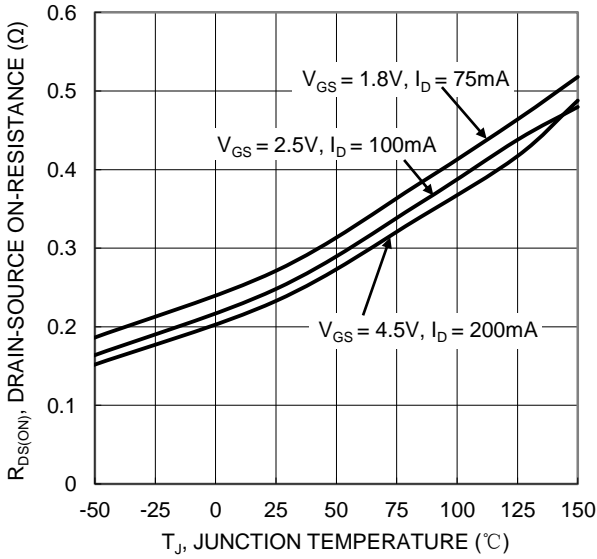


Figure 6. On-Resistance Variation with Junction Temperature



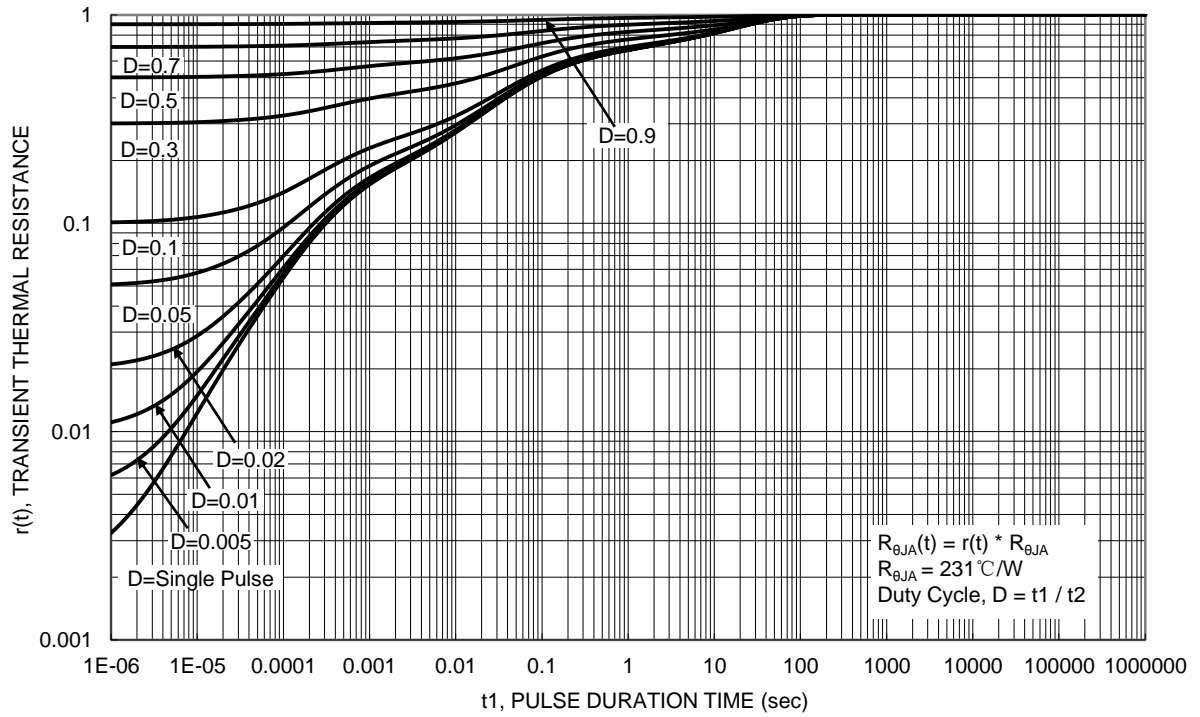
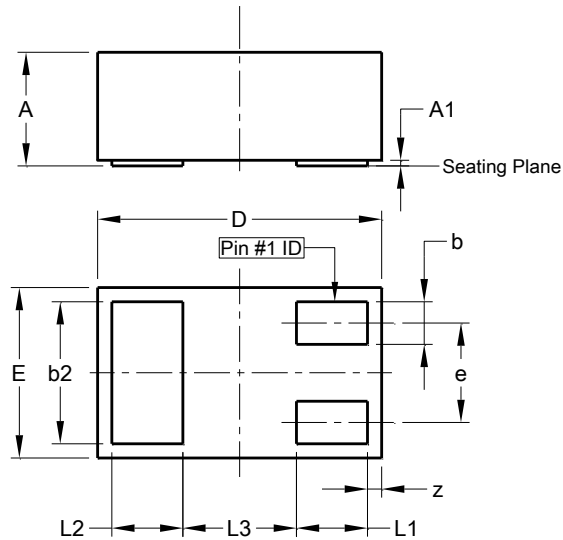


Figure 13. Transient Thermal Resistance

Package Outline Dimensions

Please see <http://www.diodes.com/package-outlines.html> for the latest version.

X2-DFN1006-3

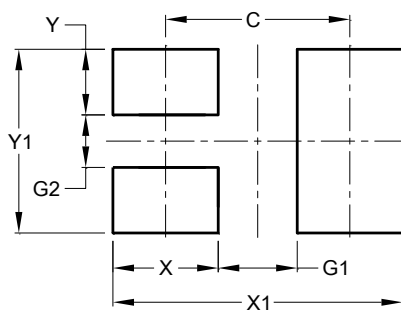


X2-DFN1006-3			
Dim	Min	Max	Typ
A	—	0.40	—
A1	0.00	0.05	0.03
b	0.10	0.20	0.15
b2	0.45	0.55	0.50
D	0.95	1.05	1.00
E	0.55	0.65	0.60
e	-	-	0.35
L1	0.20	0.30	0.25
L2	0.20	0.30	0.25
L3	-	-	0.40
z	0.02	0.08	0.05
All Dimensions in mm			

Suggested Pad Layout

Please see <http://www.diodes.com/package-outlines.html> for the latest version.

X2-DFN1006-3



Dimensions	Value (in mm)
C	0.70
G1	0.30
G2	0.20
X	0.40
X1	1.10
Y	0.25
Y1	0.70

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