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

Characteristic			Symbol	Value	Unit
Source-Source Voltage			V_{SSS}	12	V
Gate-Source Voltage			V_{GSS}	±8	V
Continuous Source Current (Note 5) V_{GS} = 4.5V	Steady State	T_A = +25°C T_A = +70°C	I_S	23.6 18.9	A
Continuous Source Current (Note 5) V_{GS} = 2.5V	Steady State	T_A = +25°C T_A = +70°C	I_S	16.8 13.4	A
Pulsed Source Current (Note 6)			I_{SM}	100	A

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 7)	P_D	1.05	W
Thermal Resistance, Junction to Ambient @T_A = +25°C (Note 7)	$R_{\theta JA}$	120.7	°C/W
Power Dissipation (Note 5)	P_D	2.67	W
Thermal Resistance, Junction to Ambient @T_A = +25°C (Note 5)	$R_{\theta JA}$	46.8	°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 8)						
Source-Source Breakdown Voltage	BV_{SSS}	12	—	—	V	V_{GS} = 0V, I_S = 1mA
Zero Gate Voltage Source Current T_J = +25°C	I_{SSS}	—	—	1	μA	V_{SS} = 10V, V_{GS} = 0V
Gate-Source Leakage	I_{GSS}	—	—	±10	μA	V_{GS} = ±8V, V_{SS}=0V
ON CHARACTERISTICS (Note 8)						
Gate Threshold Voltage	$V_{GS(TH)}$	0.5	—	1.3	V	V_{SS} = 6V, I_S = 1mA
Static Source-Source On-Resistance	$R_{SS(ON)}$	1.6	2.3	3.2	mΩ	V_{GS} = 4.5V, I_S = 5A
		1.7	2.4	3.2		V_{GS} = 4.0V, I_S = 5A
		1.8	2.5	3.2		V_{GS} = 3.8V, I_S = 5A
		1.9	2.7	4.4		V_{GS} = 3.1V, I_S = 5A
		2.1	3.0	6.3		V_{GS} = 2.5V, I_S = 5A
Diode Forward Voltage	V_{SS}	—	0.7	1.2	V	V_{GS} = 0V, I_S = 3A
DYNAMIC CHARACTERISTICS (Note 9)						
Input Capacitance	C_{iss}	—	3315	—	pF	V_{SS} = 6V, V_{GS} = 0V, f = 1.0MHz
Output Capacitance	C_{oss}	—	850	—		
Reverse Transfer Capacitance	C_{rss}	—	248	—		
Total Gate Charge	Q_g	—	56.5	—	nC	V_{SS} = 6V, V_{GS} = 4.5V, I_S = 27A
Gate-Source Charge	Q_{gs}	—	8.8	—		
Gate-Drain Charge	Q_{gd}	—	13.3	—		
Gate Charge at V_{TH}	$Q_{g(TH)}$	—	6.9	—		
Turn-On Delay Time	$t_{D(ON)}$	—	603	—	ns	V_{SS} = 6V, V_{GS} = 4.5V, I_S = 3A
Turn-On Rise Time	t_R	—	1694	—		
Turn-Off Delay Time	$t_{D(OFF)}$	—	4749	—		
Turn-Off Fall Time	t_F	—	6208	—		

Notes:
5. Device mounted on FR-4 material with 1-inch^2 (6.45-cm^2), 2-oz. (0.071-mm thick) Cu.
6. Repetitive rating, pulse width limited by junction temperature.
7. Device mounted on FR-4 PCB with minimum recommended pad layout, single sided.
8. Short duration pulse test used to minimize self-heating effect.
9. Guaranteed by design. Not subject to production testing.

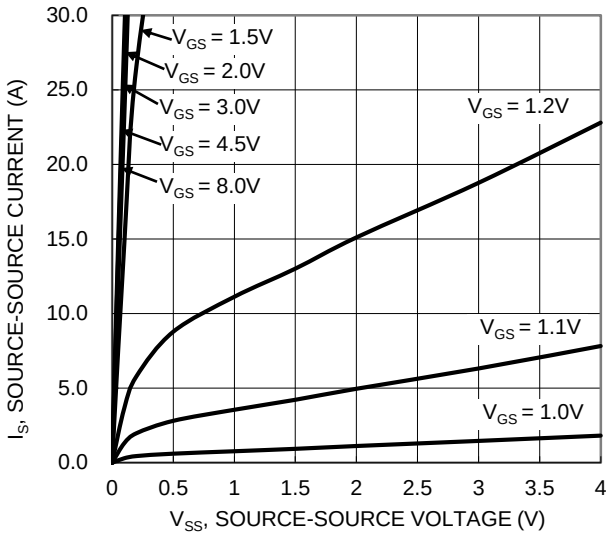


Figure 1. Typical Output Characteristic

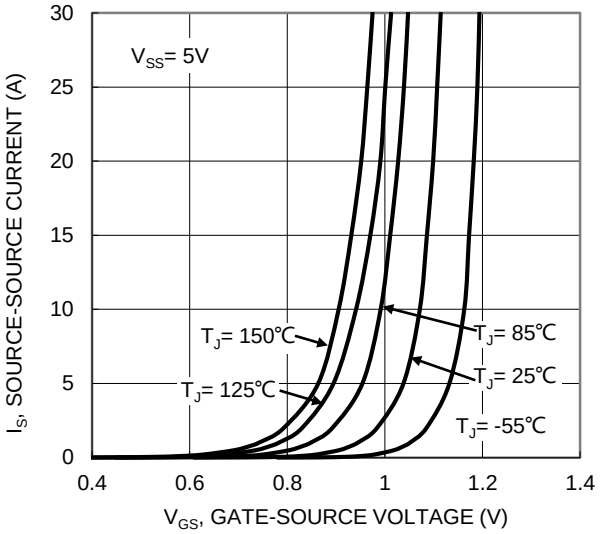


Figure 2. Typical Transfer Characteristic

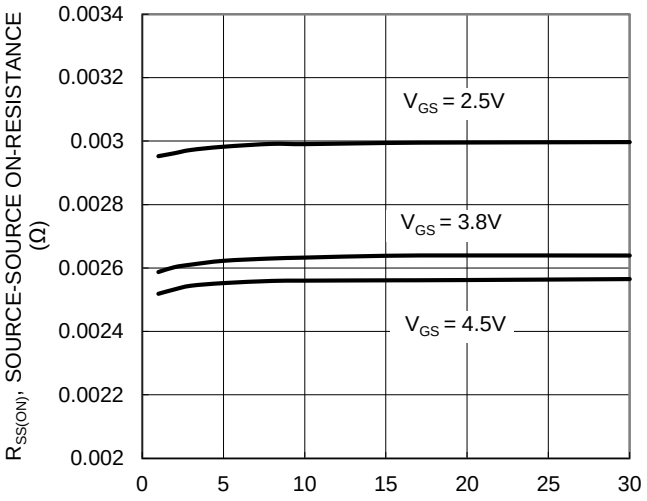


Figure 3. Typical On-Resistance vs. Source Current and Gate Voltage

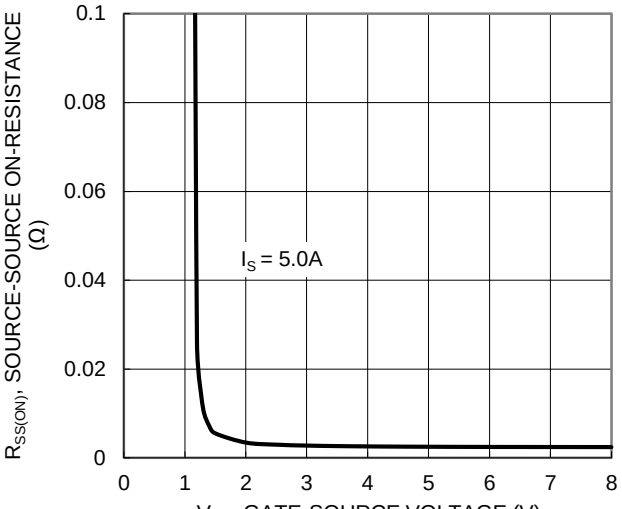


Figure 4. Typical Transfer Characteristic

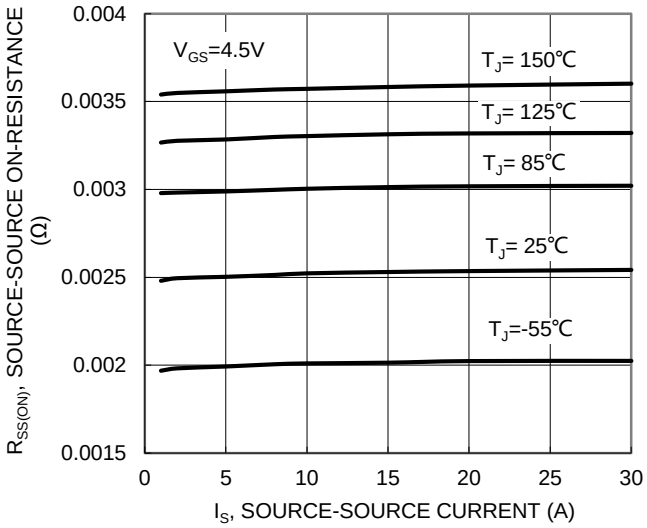


Figure 5. Typical On-Resistance vs. Source Current and Junction Temperature

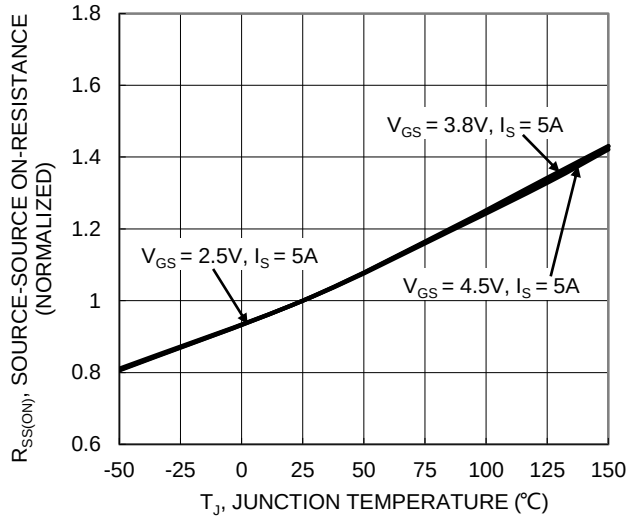


Figure 6. On-Resistance Variation with Junction Temperature

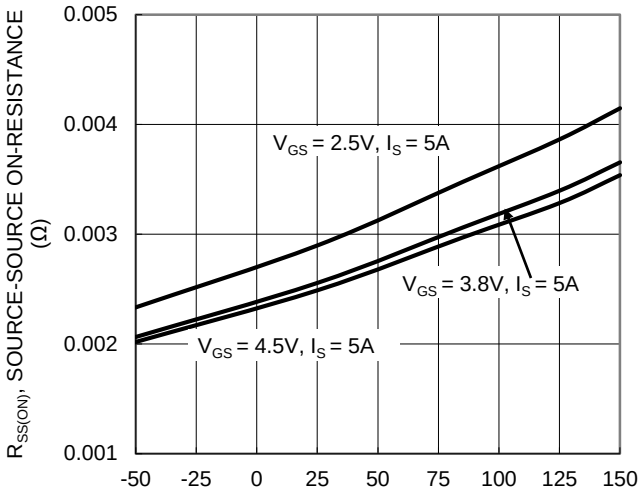


Figure 7. On-Resistance Variation with Junction Temperature

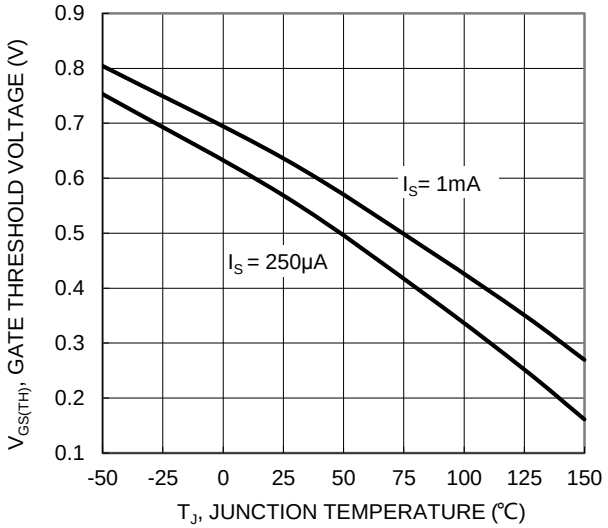


Figure 8. Gate Threshold Variation vs. Junction Temperature

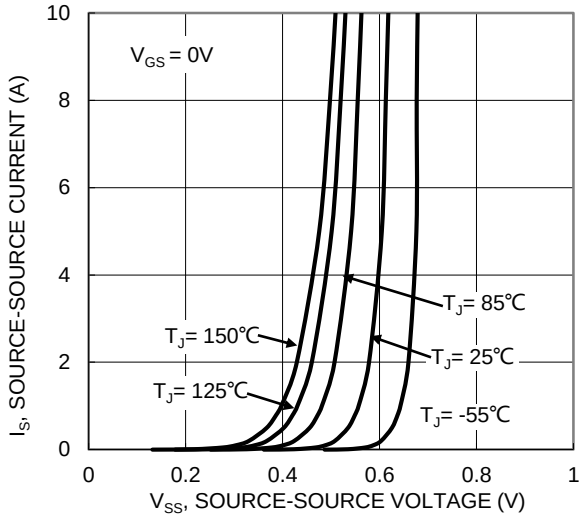


Figure 9. Diode Forward Voltage vs. Current

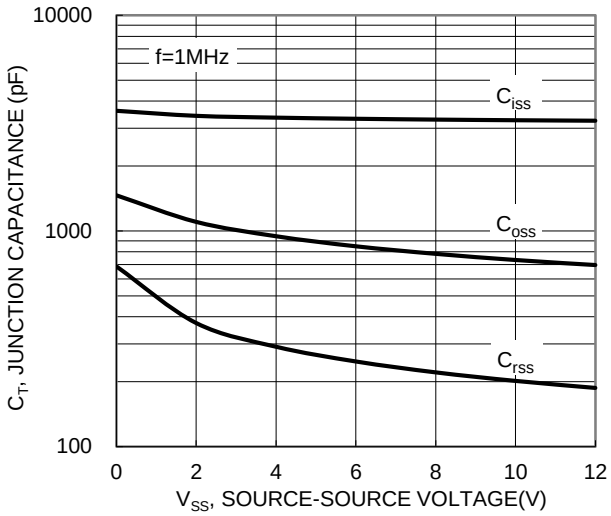


Figure 10. Typical Junction Capacitance

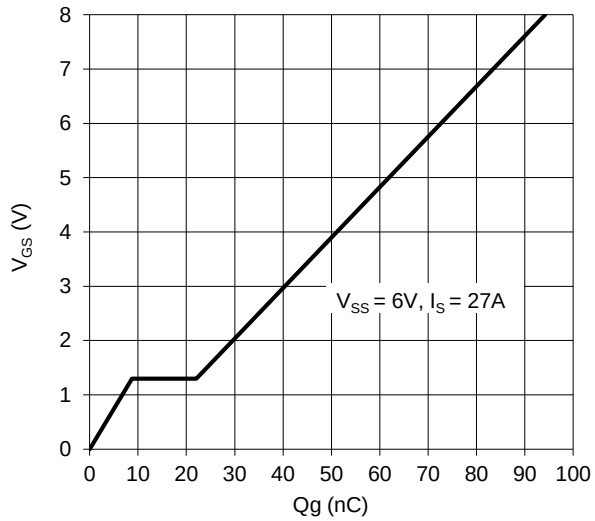


Figure 11. Gate Charge

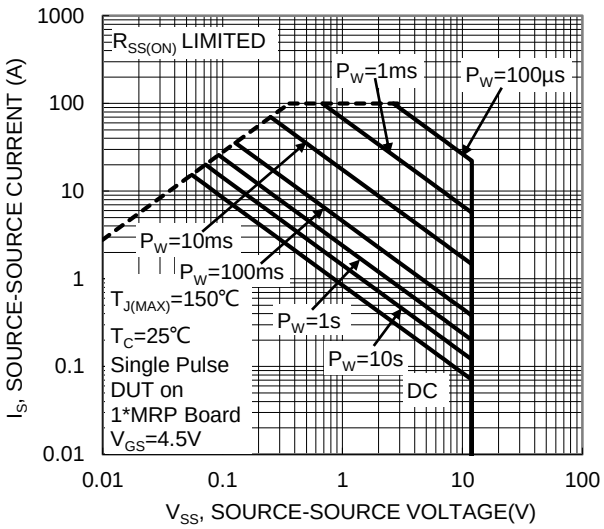


Figure 12. SOA, Safe Operation Area

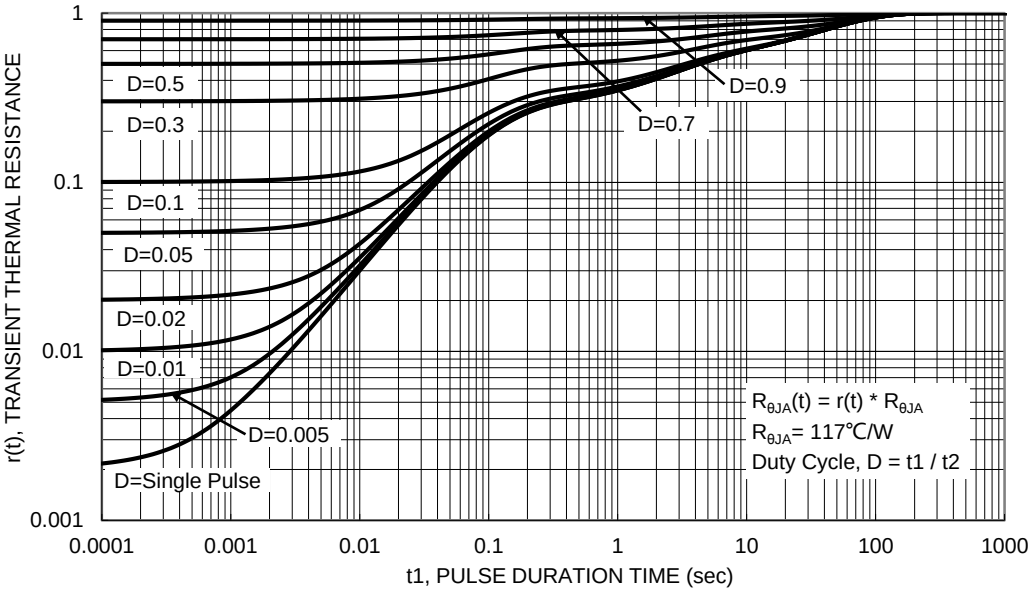
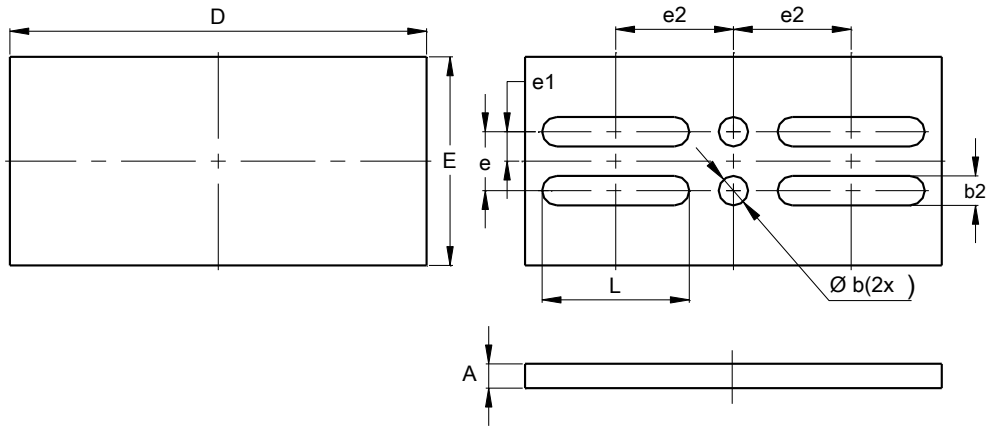


Figure 13. Transient Thermal Resistance

Package Outline Dimensions

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

X3-DSN3518-6

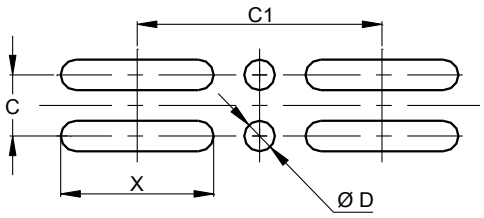


X3-DSN3518-6			
Dim	**Min**	**Max**	**Typ**
A	0.16	0.26	0.21
b	0.22	0.28	0.25
b2	0.22	0.28	0.25
D	3.49	3.59	3.54
E	1.72	1.82	1.77
e	0.47	0.53	0.50
e1	0.22	0.28	0.25
e2	0.97	1.03	1.00
L	1.22	1.28	1.25
All Dimensions in mm			

Suggested Pad Layout

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

X3-DSN3518-6



Dimensions	Value (in mm)
C	0.50
C1	2.00
D	0.25
X	1.25

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