

**Maximum Ratings** (@T<sub>A</sub> = +25°C, unless otherwise specified.)

Characteristic			Symbol	Value	Unit
Drain-Source Voltage			V <sub>DSS</sub>	-40	V
Gate-Source Voltage			V <sub>GSS</sub>	±20	V
Continuous Drain Current (Note 6) V <sub>GS</sub> = -10V	Steady State	T <sub>A</sub> = +25°C	I <sub>D</sub>	-2.4	A
		T <sub>A</sub> = +70°C		-1.9	
Continuous Drain Current (Note 7) V <sub>GS</sub> = -10V	Steady State	T <sub>A</sub> = +25°C	I <sub>D</sub>	-3.4	A
		T <sub>A</sub> = +70°C		-2.7	
Pulsed Drain Current			I <sub>DM</sub>	-20	A
Avalanche Current, L = 0.1mH			I <sub>AS</sub>	-14	A
Avalanche Energy, L = 0.1mH			E <sub>AS</sub>	9.8	mJ

**Thermal Characteristics**

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 6)	P <sub>D</sub>	0.72	W
Thermal Resistance, Junction to Ambient @T <sub>A</sub> = +25°C (Note 6)	R <sub>θJA</sub>	171	°C/W
Power Dissipation (Note 7)	P <sub>D</sub>	1.4	W
Thermal Resistance, Junction to Ambient @T <sub>A</sub> = +25°C (Note 6)	R <sub>θJA</sub>	90	°C/W
Operating and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-55 to +150	°C

**Electrical Characteristics** (@T<sub>A</sub> = +25°C, unless otherwise specified.)

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
<b>OFF CHARACTERISTICS (Note 8)</b>						
Drain-Source Breakdown Voltage	BV <sub>DSS</sub>	-40	—	—	V	V <sub>GS</sub> = 0V, I <sub>D</sub> = -250μA
Zero Gate Voltage Drain Current T <sub>J</sub> = +25°C	I <sub>DSS</sub>	—	—	-1.0	μA	V <sub>DS</sub> = -40V, V <sub>GS</sub> = 0V
Gate-Source Leakage	I <sub>GSS</sub>	—	—	±100	nA	V <sub>GS</sub> = ±20V, V <sub>DS</sub> = 0V
<b>ON CHARACTERISTICS (Note 8)</b>						
Gate Threshold Voltage	V <sub>GS(TH)</sub>	-1.0	—	-3.0	V	V <sub>DS</sub> = V <sub>GS</sub> , I <sub>D</sub> = -250μA
Static Drain-Source On-Resistance	R <sub>DS(ON)</sub>	—	64	80	mΩ	V <sub>GS</sub> = -10V, I <sub>D</sub> = -4.2A
			85	100		V <sub>GS</sub> = -4.5V, I <sub>D</sub> = -3.3A
Diode Forward Voltage	V <sub>SD</sub>	—	-0.7	-1.2	V	V <sub>GS</sub> = 0V, I <sub>S</sub> = -1A
<b>DYNAMIC CHARACTERISTICS (Note 9)</b>						
Input Capacitance	C <sub>iss</sub>	—	587	—	pF	V <sub>DS</sub> = -20V, V <sub>GS</sub> = 0V, f = 1.0MHz
Output Capacitance	C <sub>oss</sub>	—	88	—	pF	
Reverse Transfer Capacitance	C <sub>rss</sub>	—	40	—	pF	
Gate Resistance	R <sub>g</sub>	—	14.4	—	Ω	V <sub>DS</sub> = 0V, V <sub>GS</sub> = 0V, f = 1MHz
Total Gate Charge (V <sub>GS</sub> = -4.5V)	Q <sub>g</sub>	—	6.1	—	nC	V <sub>DS</sub> = -20V, I <sub>D</sub> = -4.2A
Total Gate Charge (V <sub>GS</sub> = -10V)	Q <sub>g</sub>	—	12.2	—	nC	
Gate-Source Charge	Q <sub>gs</sub>	—	1.8	—	nC	
Gate-Drain Charge	Q <sub>gd</sub>	—	2.4	—	nC	
Turn-On Delay Time	t <sub>D(ON)</sub>	—	3.6	—	ns	V <sub>DD</sub> = -15V, V <sub>GS</sub> = -10V, I <sub>D</sub> = -1.0A, R <sub>G</sub> = 6Ω
Turn-On Rise Time	t <sub>R</sub>	—	2.9	—	ns	
Turn-Off Delay Time	t <sub>D(OFF)</sub>	—	36.3	—	ns	
Turn-Off Fall Time	t <sub>F</sub>	—	15.3	—	ns	

- 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 product testing.

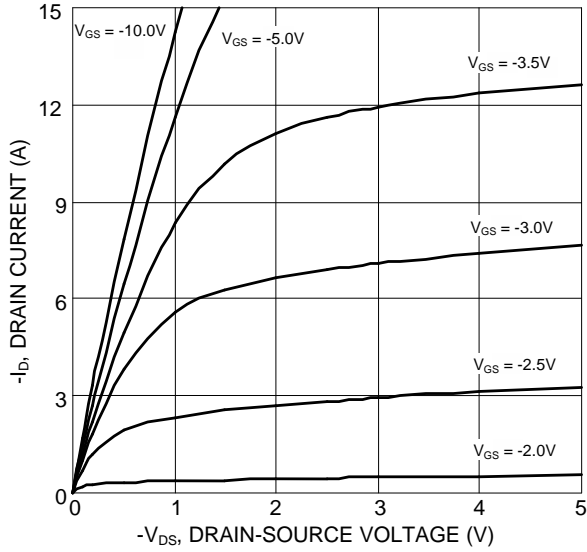


Figure 1 Typical Output Characteristic

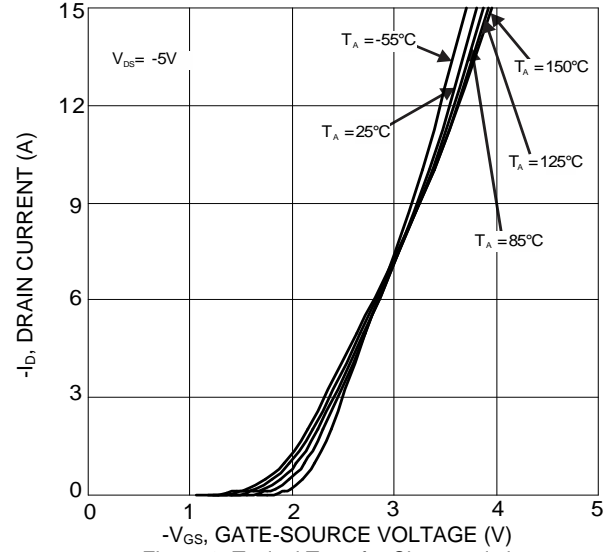


Figure 2. Typical Transfer Characteristics

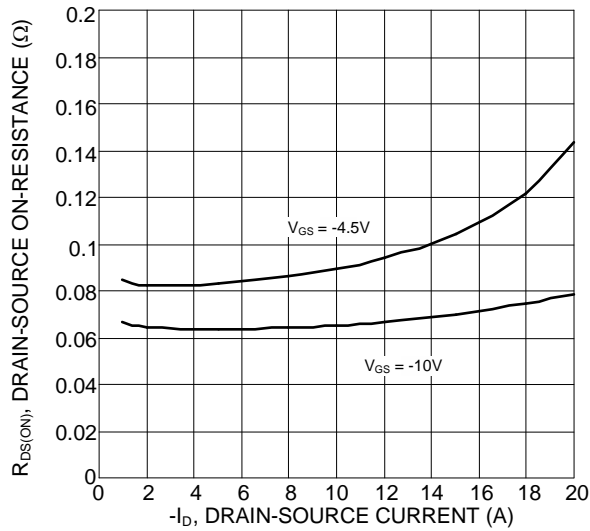


Figure 3 Typical On-Resistance vs. Drain Current and Gate Voltage

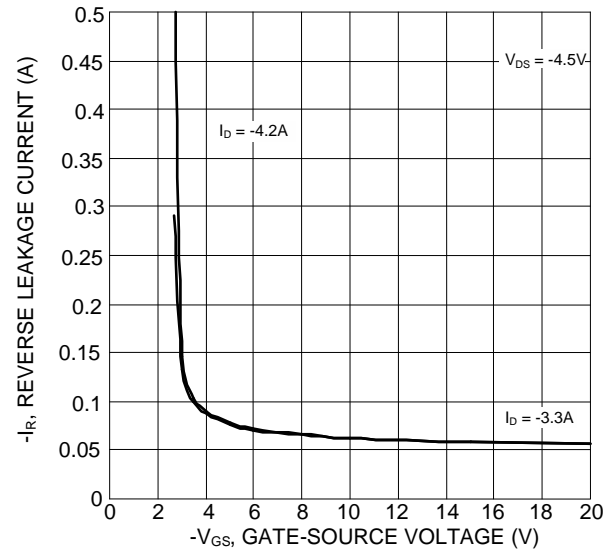


Figure 4 Typical Transfer Characteristics

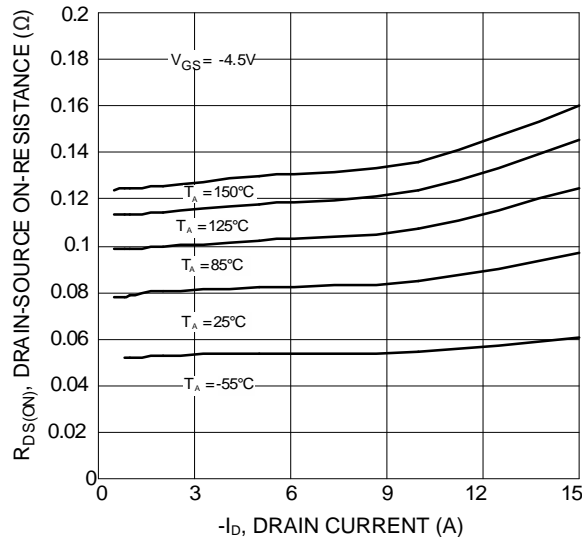


Figure 5. Typical On-Resistance vs. Drain Current and Temperature

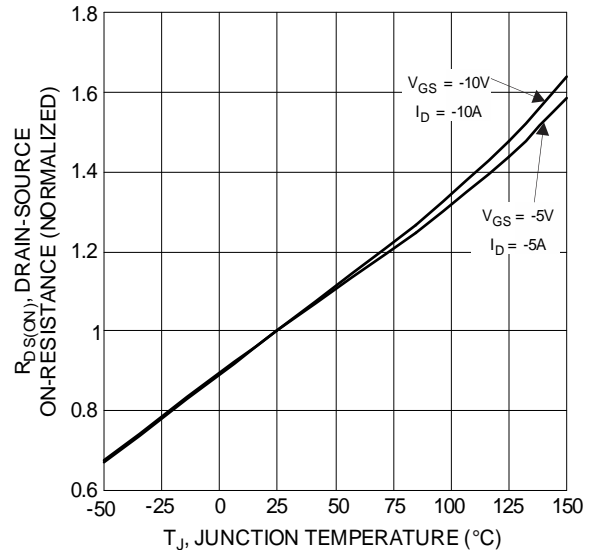
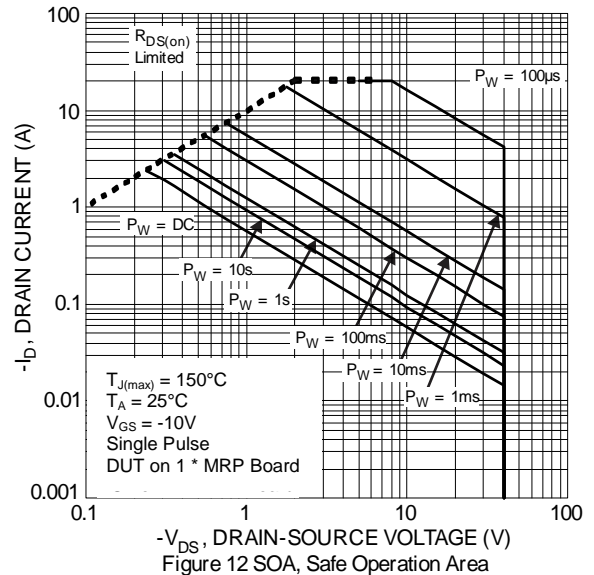
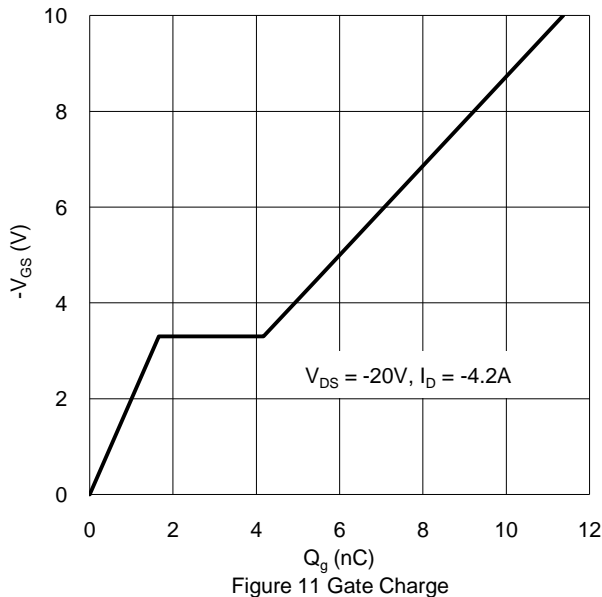
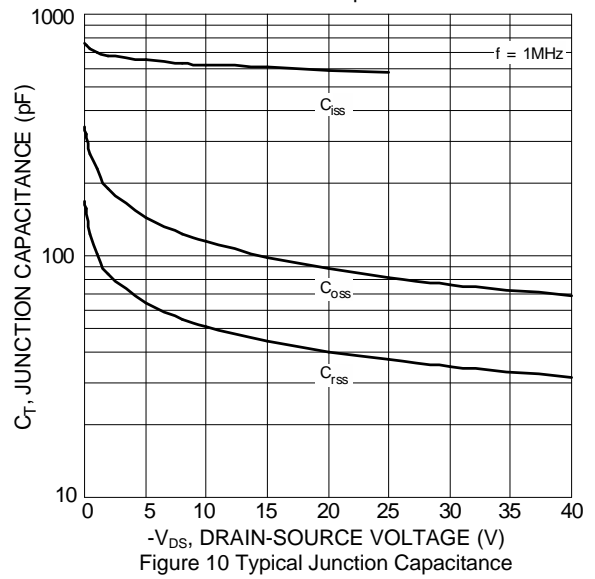
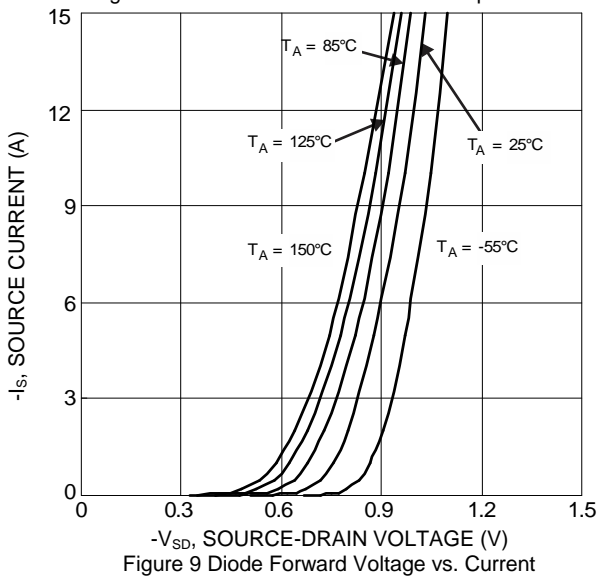
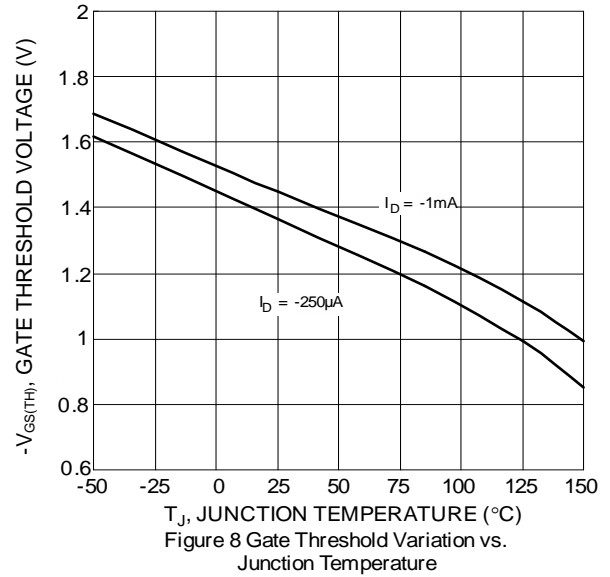
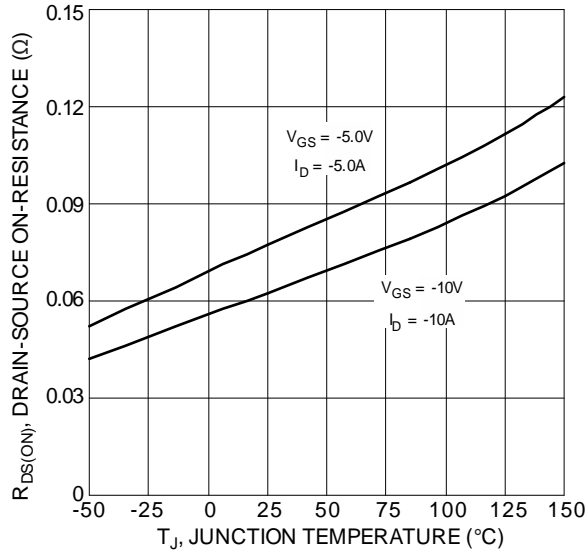
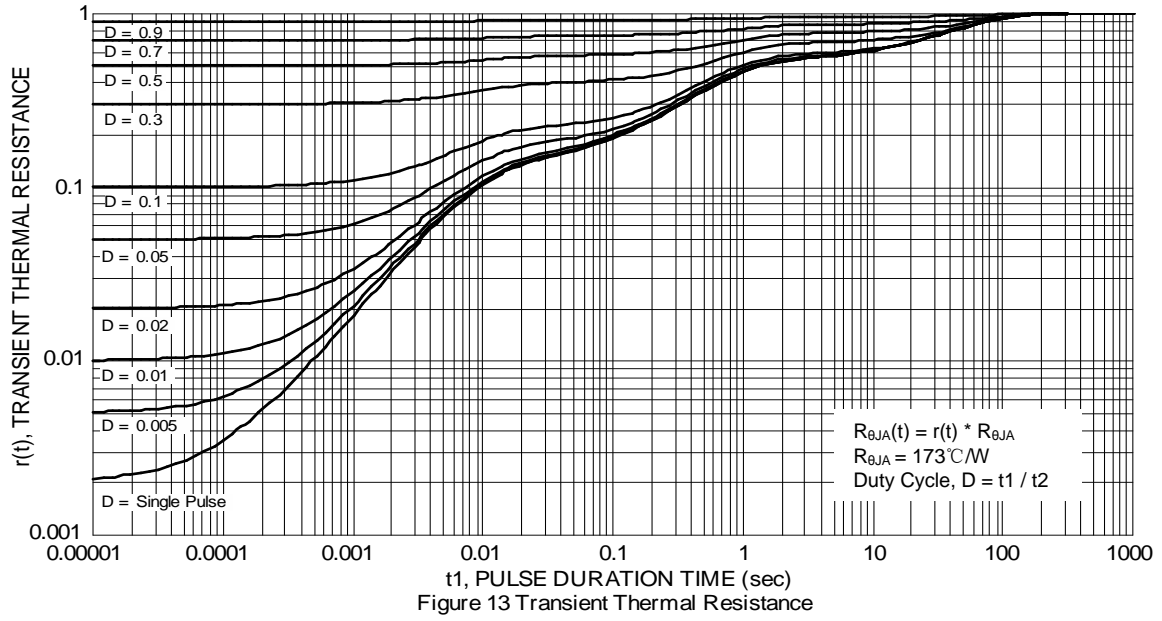


Figure 6 On-Resistance Variation with Temperature

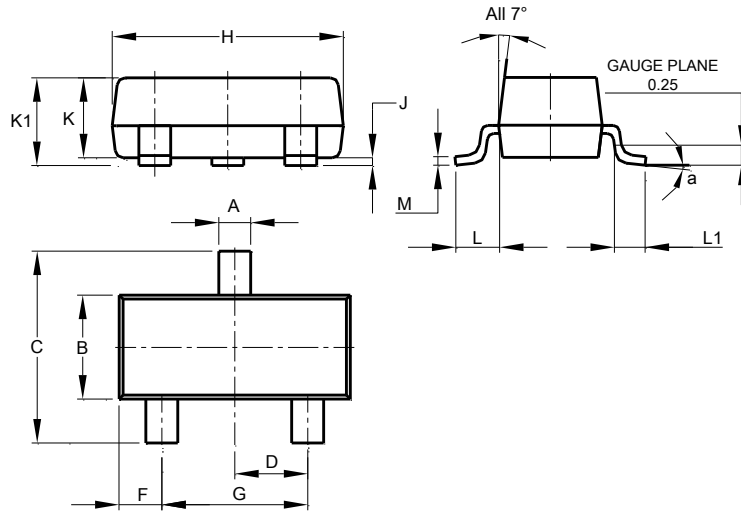




## Package Outline Dimensions

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

### SOT23

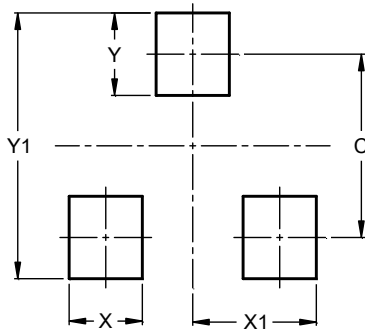


SOT23			
Dim	Min	Max	Typ
A	0.37	0.51	0.40
B	1.20	1.40	1.30
C	2.30	2.50	2.40
D	0.89	1.03	0.915
F	0.45	0.60	0.535
G	1.78	2.05	1.83
H	2.80	3.00	2.90
J	0.013	0.10	0.05
K	0.890	1.00	0.975
K1	0.903	1.10	1.025
L	0.45	0.61	0.55
L1	0.25	0.55	0.40
M	0.085	0.150	0.110
a	0°	8°	--
All Dimensions in mm			

## Suggested Pad Layout

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

### SOT23



Dimensions	Value (in mm)
C	2.0
X	0.8
X1	1.35
Y	0.9
Y1	2.9

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