

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

Characteristic			Symbol	Value	Unit
Drain-Source Voltage			V <sub>DSS</sub>	-30	V
Gate-Source Voltage			V <sub>GSS</sub>	±20	V
Drain Current (Note 6) V <sub>GS</sub> = -10V	Steady State	T <sub>A</sub> = +25°C T <sub>A</sub> = +70°C	I <sub>D</sub>	-3.3 -2.7	A
Pulsed Drain Current (380µs Pulse, Duty Cycle = 1%)			I <sub>DM</sub>	-13	A

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

Characteristic		Symbol	Value	Unit
Total Power Dissipation (Note 5)		P <sub>D</sub>	0.8	W
Thermal Resistance, Junction to Ambient (Note 5)	Steady State	R <sub>θJA</sub>	159	°C/W
Total Power Dissipation (Note 6)		P <sub>D</sub>	1.3	W
Thermal Resistance, Junction to Ambient (Note 6)	Steady State	R <sub>θJA</sub>	98	°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 7)</b>						
Drain-Source Breakdown Voltage	BV <sub>DSS</sub>	-30	—	—	V	V <sub>GS</sub> = 0V, I <sub>D</sub> = -250µA
Zero Gate Voltage Drain Current	I <sub>DSS</sub>	—	—	-800	nA	V <sub>DS</sub> = -30V, V <sub>GS</sub> = 0V
Gate-Source Leakage	I <sub>GSS</sub>	—	—	±80 ±800	nA	V <sub>GS</sub> = ±12V, V <sub>DS</sub> = 0V V <sub>GS</sub> = ±15V, V <sub>DS</sub> = 0V
<b>ON CHARACTERISTICS (Note 7)</b>						
Gate Threshold Voltage	V <sub>GS(TH)</sub>	-1.3	—	-2.1	V	V <sub>DS</sub> = V <sub>GS</sub> , I <sub>D</sub> = -250µA
Static Drain-Source On-Resistance	R <sub>DS(ON)</sub>	—	59 100	90 134	mΩ	V <sub>GS</sub> = -10V, I <sub>D</sub> = -2.7A V <sub>GS</sub> = -4.5V, I <sub>D</sub> = -2.0A
Diode Forward Voltage	V <sub>SD</sub>	—	-0.83	-1.26	V	V <sub>GS</sub> = 0V, I <sub>S</sub> = -2.7A
<b>DYNAMIC CHARACTERISTICS (Note 8)</b>						
Input Capacitance	C <sub>iss</sub>	—	300	—	pF	V <sub>DS</sub> = -10V, V <sub>GS</sub> = 0V f = 1.0MHz
Output Capacitance	C <sub>oss</sub>	—	52	—	pF	
Reverse Transfer Capacitance	C <sub>rss</sub>	—	35	—	pF	
Gate Resistance	R <sub>G</sub>	—	12.5	—	Ω	V <sub>GS</sub> = 0V, V <sub>DS</sub> = 0V, f = 1.0MHz
Total Gate Charge (V <sub>GS</sub> = -4.5V)	Q <sub>g</sub>	—	1.0	—	nC	V <sub>GS</sub> = -10V/-4.5V, V <sub>DS</sub> = -15V, I <sub>D</sub> = -3A
Total Gate Charge (V <sub>GS</sub> = -10V)	Q <sub>g</sub>	—	2.0	—	nC	
Gate-Source Charge	Q <sub>gs</sub>	—	0.2	—	nC	
Gate-Drain Charge	Q <sub>gd</sub>	—	0.5	—	nC	
Turn-On Delay Time	t <sub>D(ON)</sub>	—	3.7	—	ns	V <sub>DS</sub> = -15V, V <sub>GS</sub> = -10V, R <sub>G</sub> = 6Ω, I <sub>D</sub> = -1A
Turn-On Rise Time	t <sub>R</sub>	—	5.5	—	ns	
Turn-Off Delay Time	t <sub>D(OFF)</sub>	—	13.6	—	ns	
Turn-Off Fall Time	t <sub>F</sub>	—	8.4	—	ns	
Reverse Recovery Time	t <sub>RR</sub>	—	6.5	—	ns	I <sub>F</sub> = -1.0A, di/dt = 100A/µs
Reverse Recovery Charge	Q <sub>RR</sub>	—	1.2	—	nC	I <sub>F</sub> = -1.0A, di/dt = 100A/µs

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

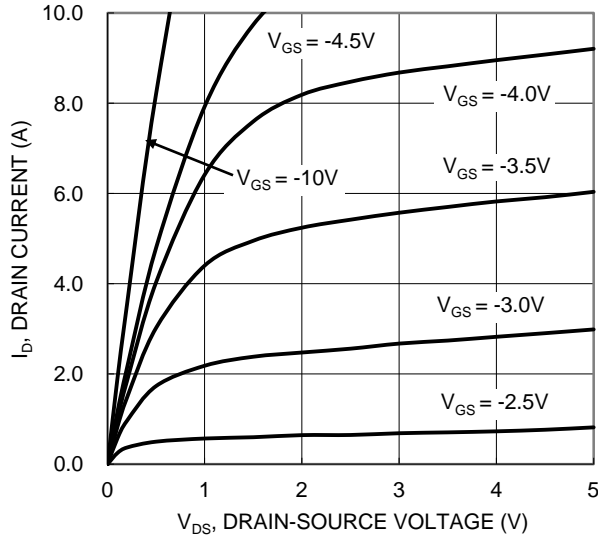


Figure 1. Typical Output Characteristic

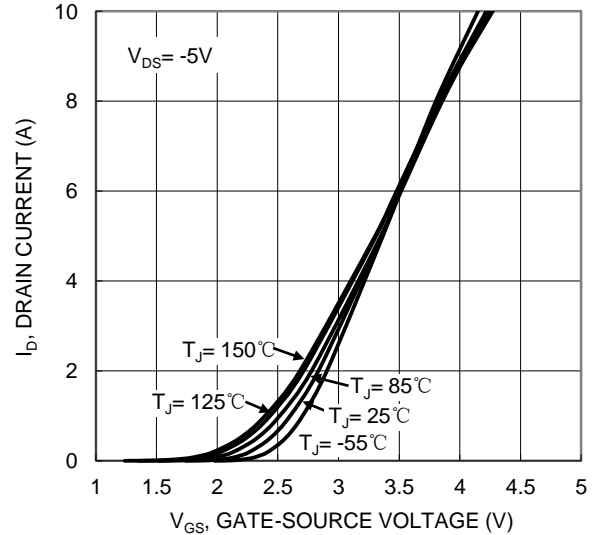


Figure 2. Typical Transfer Characteristic

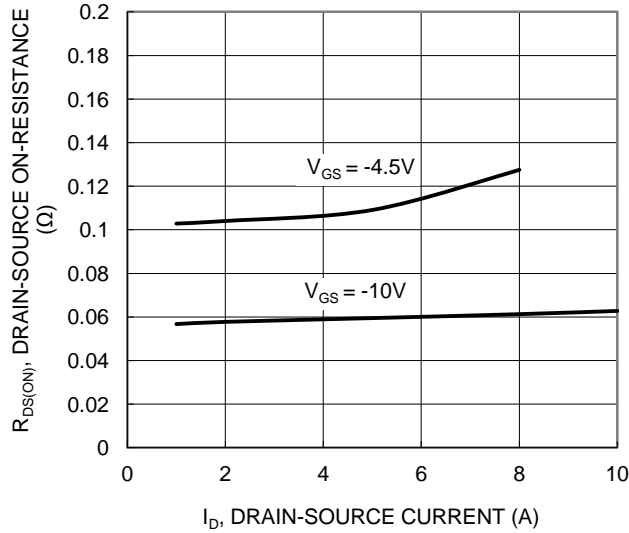


Figure 3. Typical On-Resistance vs. Drain Current and Gate Voltage

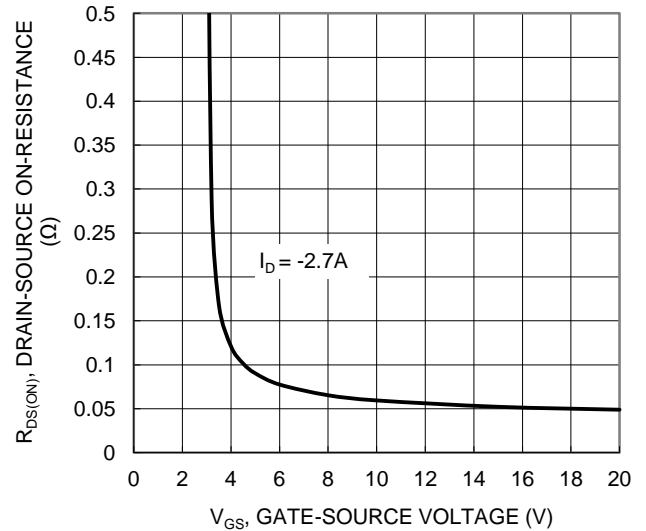


Figure 4. Typical Transfer Characteristic

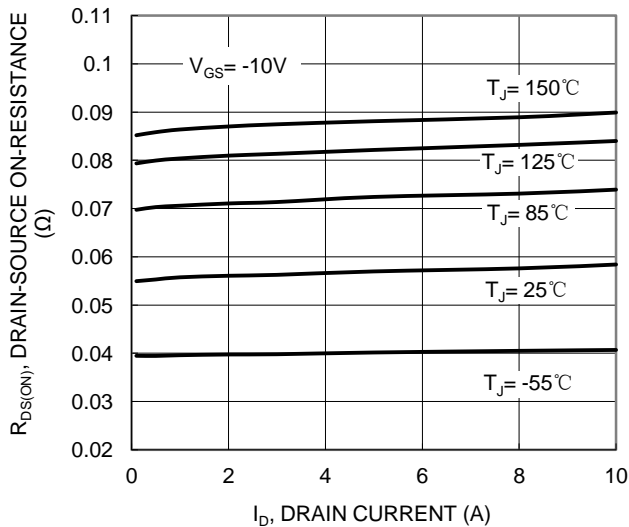


Figure 5. Typical On-Resistance vs. Drain Current and Temperature

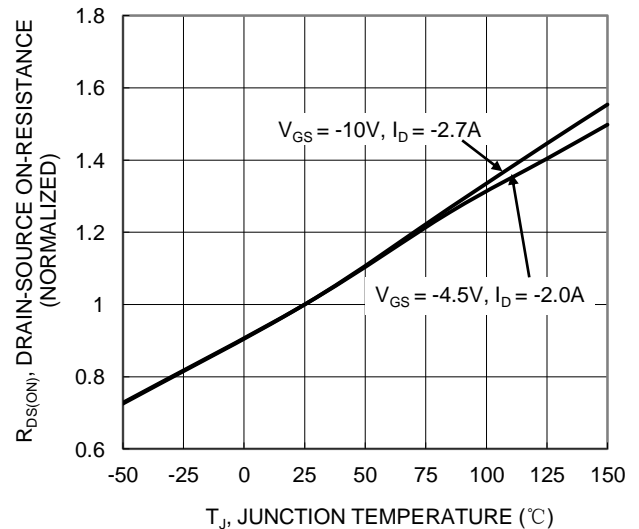
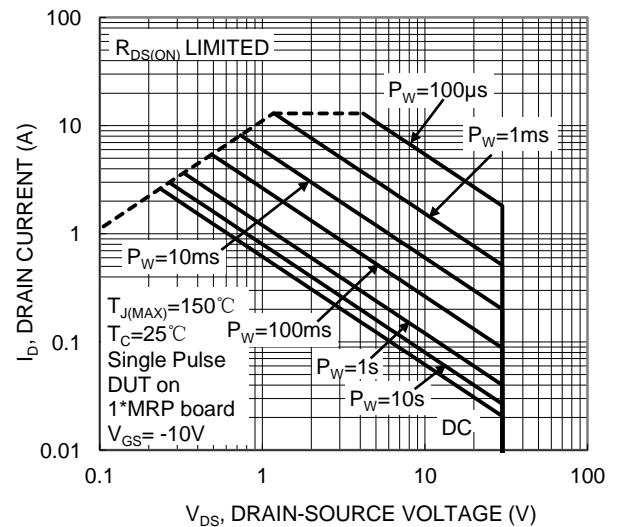
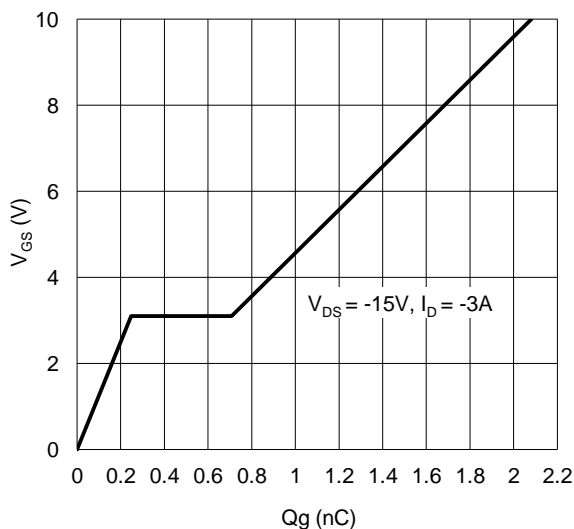
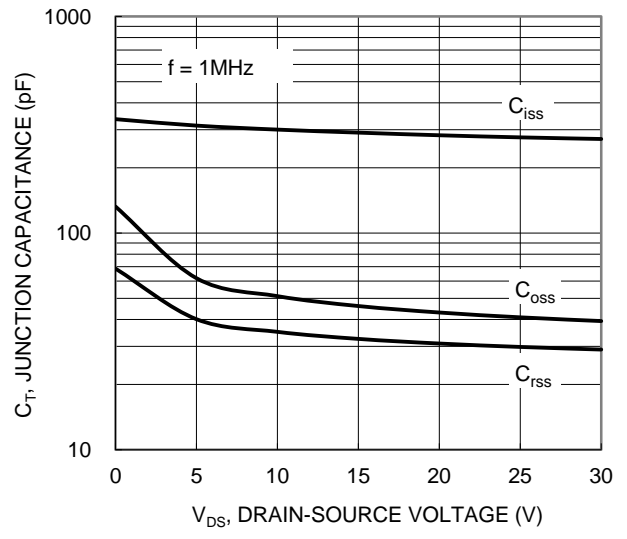
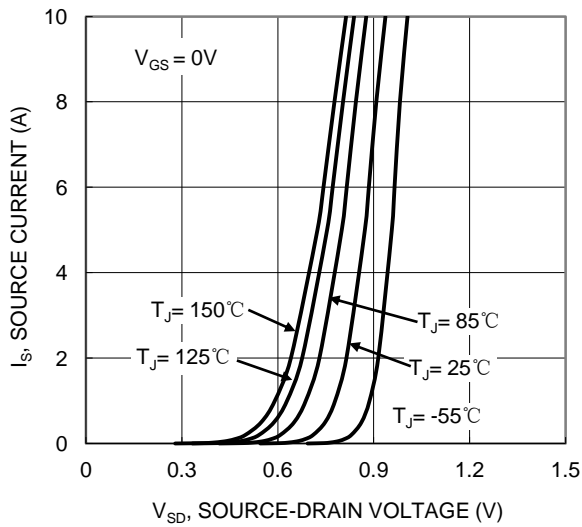
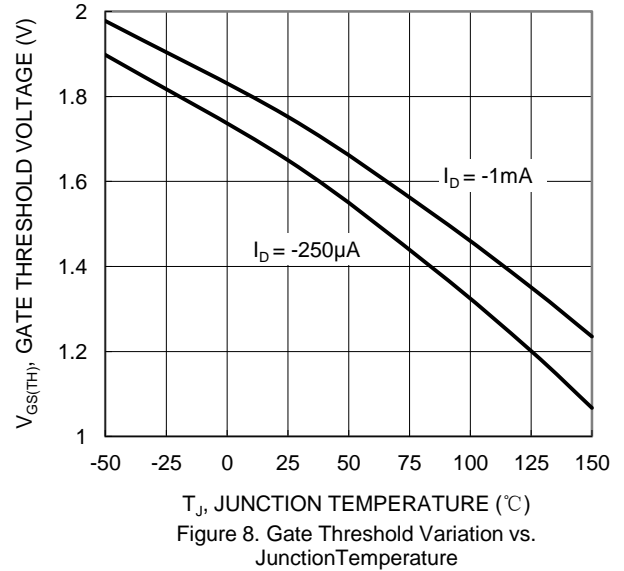
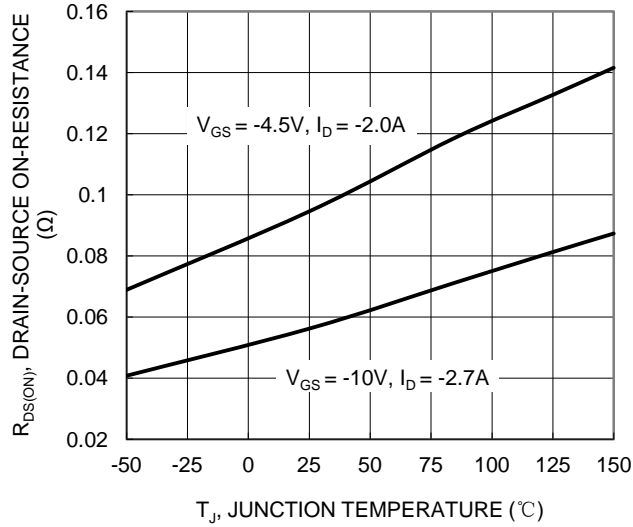
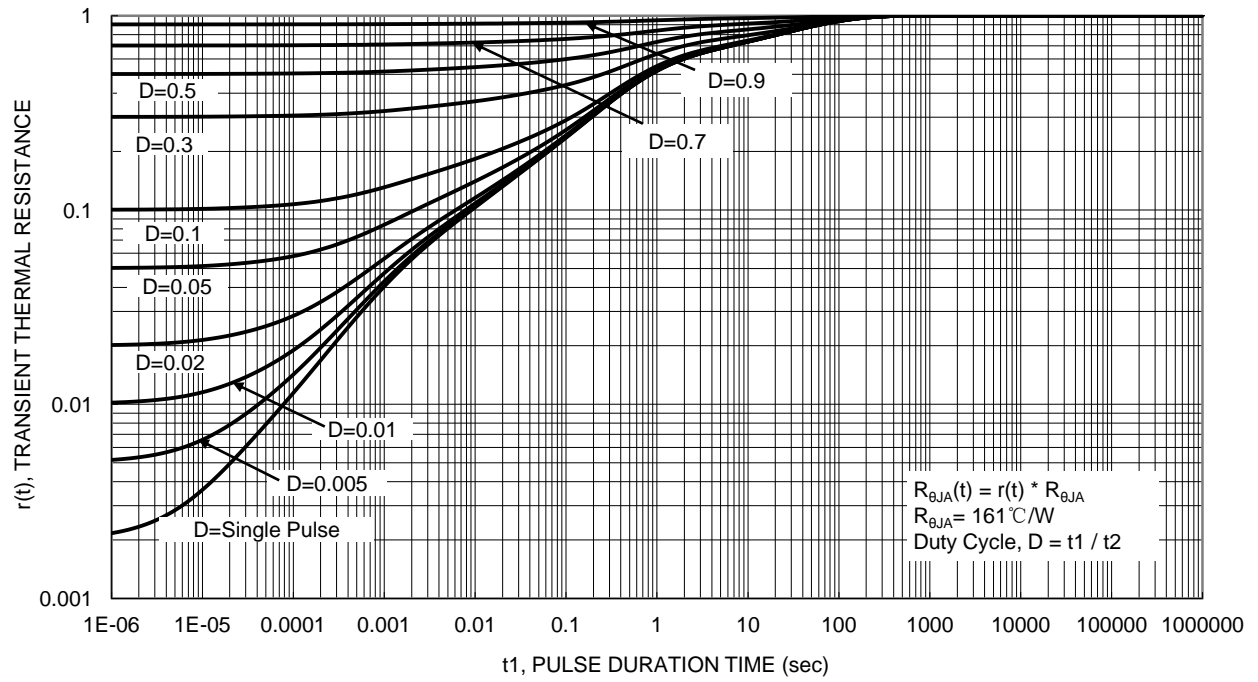


Figure 6. On-Resistance Variation with Temperature

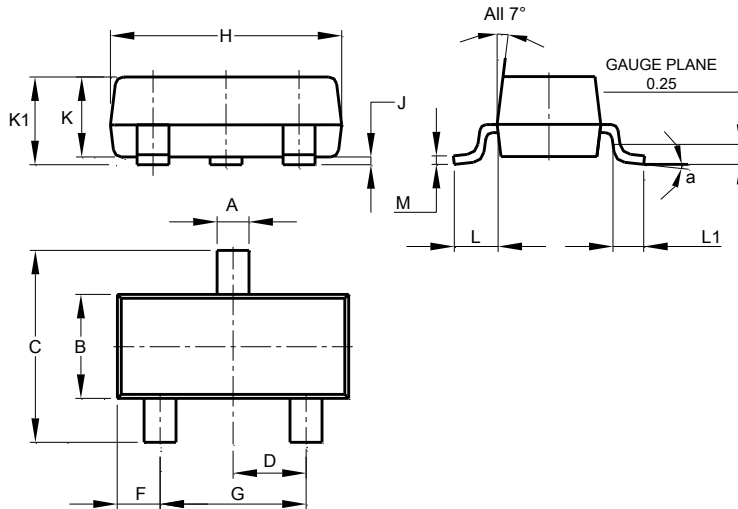




## Package Outline Dimensions

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

### SOT23

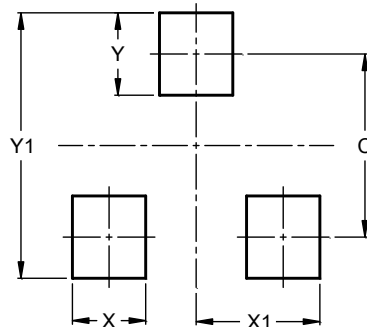


SOT23			
Dim	Min	Max	Typ
A	0.37	0.51	0.40
B	1.20	1.40	1.30
C	2.30	2.50	2.40
D	0.89	1.03	0.915
F	0.45	0.60	0.535
G	1.78	2.05	1.83
H	2.80	3.00	2.90
J	0.013	0.10	0.05
K	0.890	1.00	0.975
K1	0.903	1.10	1.025
L	0.45	0.61	0.55
L1	0.25	0.55	0.40
M	0.085	0.150	0.110
a	0°	8°	--
All Dimensions in mm			

## 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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