

Maximum Ratings (@ $T_A = +25^\circ\text{C}$, unless otherwise specified.)

Characteristic			Symbol	Value	Unit
Drain-Source Voltage			V_{DS}	30	V
Gate-Source Voltage			V_{GS}	± 20	V
Continuous Drain Current (Note 6) $V_{GS} = 10\text{V}$	Steady State	$T_A = +25^\circ\text{C}$ $T_A = +70^\circ\text{C}$	I_D	0.8 0.6	A
Maximum Continuous Body Diode Forward Current (Note 6)			I_S	0.4	A
Pulsed Drain Current (10 μs Pulse, Duty Cycle = 1%)			I_{DM}	4	A

Thermal Characteristics (@ $T_A = +25^\circ\text{C}$, unless otherwise specified.)

Characteristic			Symbol	Value	Unit
Total Power Dissipation (Note 5)			P_D	0.29	W
Thermal Resistance, Junction to Ambient (Note 5)	Steady State		$R_{\theta JA}$	433	$^\circ\text{C/W}$
Total Power Dissipation (Note 6)			P_D	0.35	W
Thermal Resistance, Junction to Ambient (Note 6)	Steady State		$R_{\theta JA}$	360	$^\circ\text{C/W}$
Operating and Storage Temperature Range			T_J, T_{STG}	-55 to +150	$^\circ\text{C}$

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.

Electrical Characteristics (@ $T_A = +25^\circ\text{C}$, unless otherwise specified.)

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
OFF CHARACTERISTICS (Note 7)						
Drain-Source Breakdown Voltage	BV_{DSS}	30	—	—	V	$V_{GS} = 0\text{V}, I_D = 250\mu\text{A}$
Zero Gate Voltage Drain Current	I_{DSS}	—	—	1.0	μA	$V_{DS} = 30\text{V}, V_{GS} = 0\text{V}$
Gate-Source Leakage	I_{GSS}	—	—	± 10	μA	$V_{GS} = \pm 20\text{V}, V_{DS} = 0\text{V}$
ON CHARACTERISTICS (Note 7)						
Gate Threshold Voltage	$V_{GS(TH)}$	0.8	1.2	1.6	V	$V_{DS} = V_{GS}, I_D = 250\mu\text{A}$
Static Drain-Source On-Resistance	$R_{DS(ON)}$	—	0.2	0.4	Ω	$V_{GS} = 10\text{V}, I_D = 0.59\text{A}$
		—	0.3	0.7		$V_{GS} = 4.5\text{V}, I_D = 0.2\text{A}$
Diode Forward Voltage	V_{SD}	—	0.7	1.2	V	$V_{GS} = 0\text{V}, I_S = 10\text{mA}$
DYNAMIC CHARACTERISTICS (Note 8)						
Input Capacitance	C_{ISS}	—	50	—	pF	$V_{DS} = 15\text{V}, V_{GS} = 0\text{V}, f = 1.0\text{MHz}$
Output Capacitance	C_{OSS}	—	12	—	pF	
Reverse Transfer Capacitance	C_{RSS}	—	10	—	pF	
Gate Resistance	R_g	—	58	—	Ω	$V_{DS} = V_{GS} = 0\text{V}, f = 1.0\text{MHz}$
Total Gate Charge ($V_{GS} = 4.5\text{V}$)	Q_g	—	0.5	—	nC	$V_{DS} = 10\text{V}, V_{GS} = 10\text{V}, I_D = 250\text{mA}$
Total Gate Charge ($V_{GS} = 10\text{V}$)	Q_g	—	1.2	—	nC	
Gate-Source Charge	Q_{GS}	—	0.2	—	nC	
Gate-Drain Charge	Q_{gd}	—	0.1	—	nC	
Turn-On Delay Time	$t_{D(ON)}$	—	3.5	—	ns	$V_{GS} = 10\text{V}, V_{DS} = 30\text{V}, I_D = 100\text{mA}, R_G = 25\Omega$
Turn-On Rise Time	t_R	—	3.3	—	ns	
Turn-Off Delay Time	$t_{D(OFF)}$	—	16.8	—	ns	
Turn-Off Fall Time	t_F	—	13.8	—	ns	

Notes: 7. Short duration pulse test used to minimize self-heating effect.
8. Guaranteed by design. Not subject to product testing.

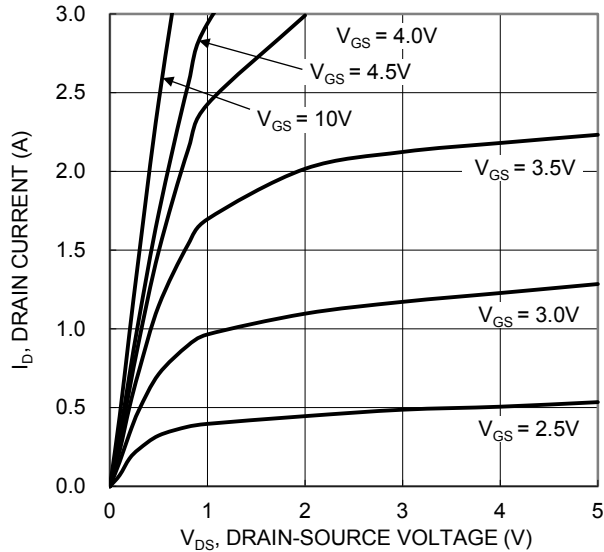


Figure 1. Typical Output Characteristic

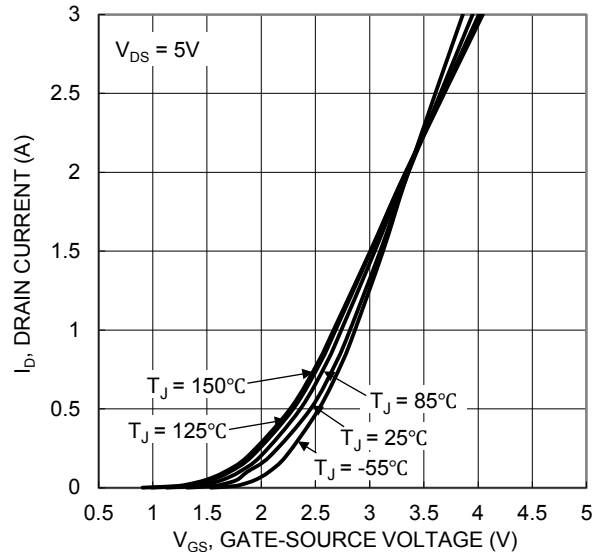


Figure 2. Typical Transfer Characteristic

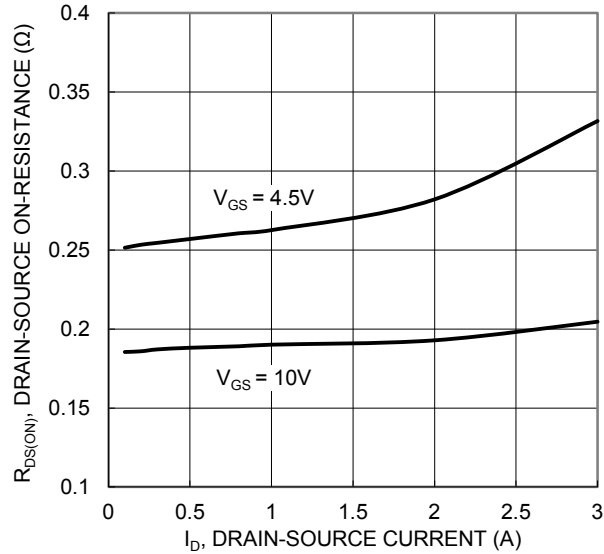


Figure 3. Typical On-Resistance vs. Drain Current and Gate Voltage

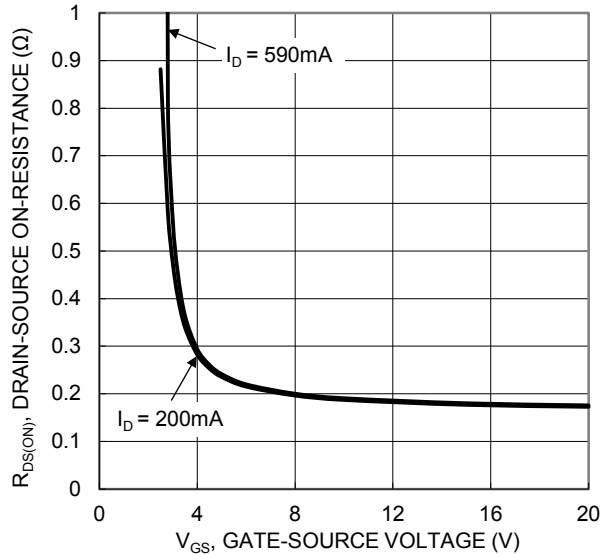


Figure 4. Typical Transfer Characteristic

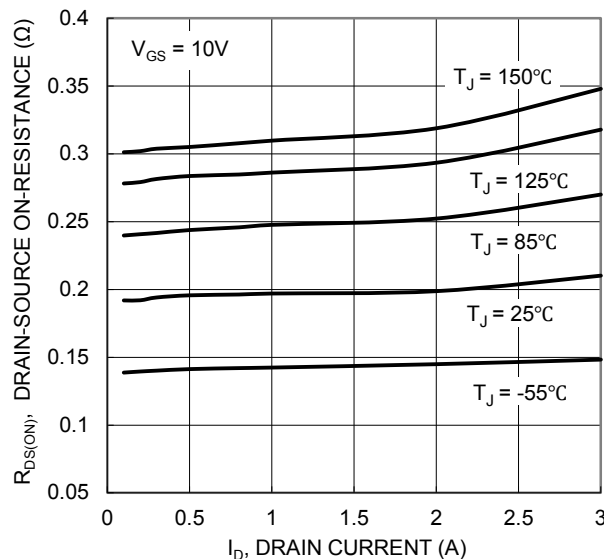


Figure 5. Typical On-Resistance vs. Drain Current and Junction Temperature

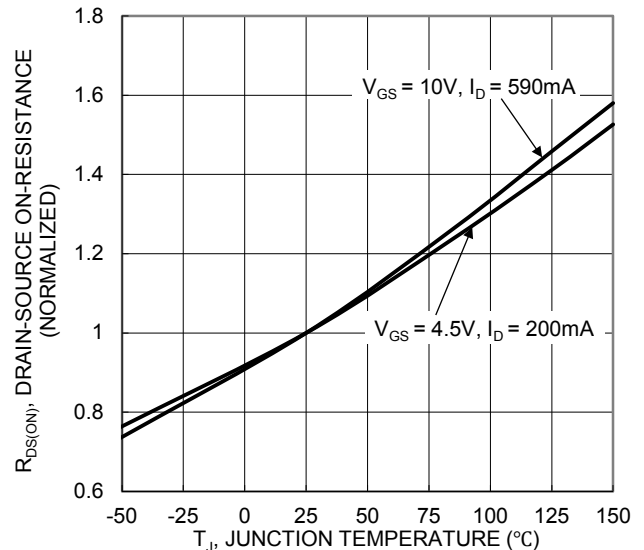


Figure 6. On-Resistance Variation with Junction Temperature

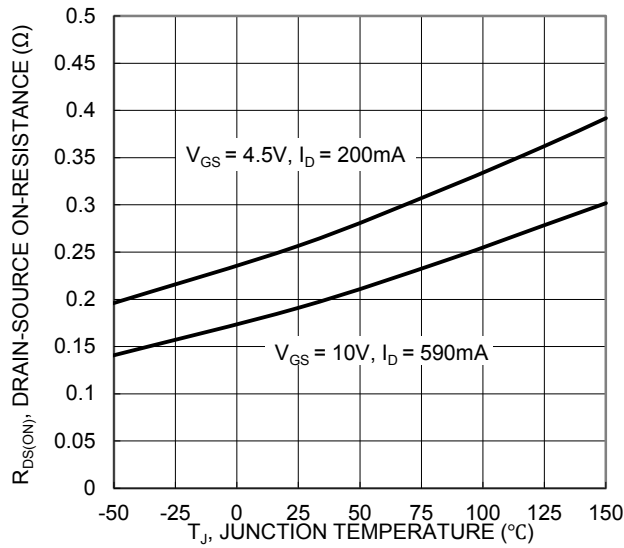


Figure 7. On-Resistance Variation with Junction Temperature

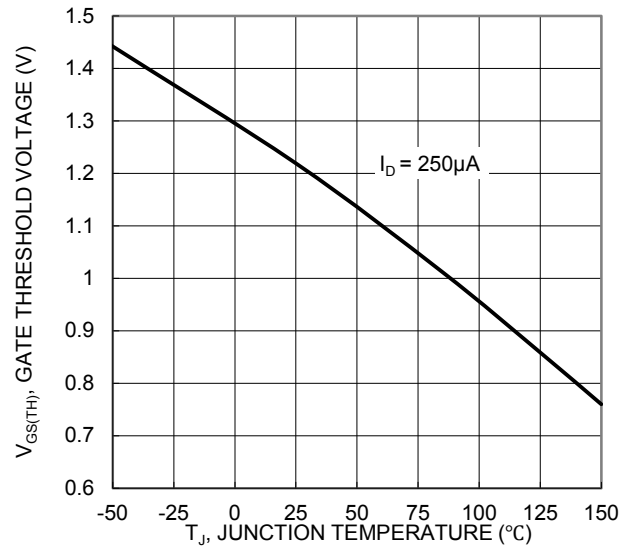


Figure 8. Gate Threshold Variation vs. Junction Temperature

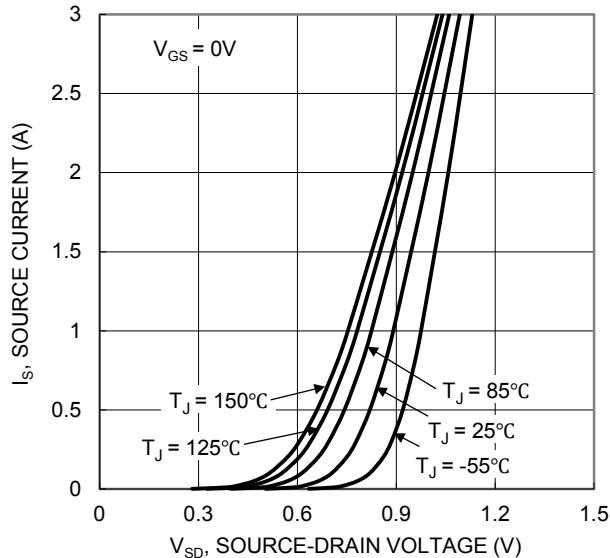


Figure 9. Diode Forward Voltage vs. Current

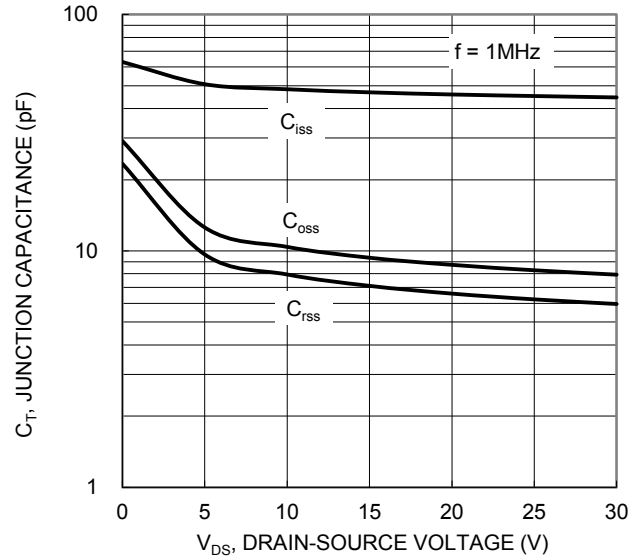


Figure 10. Typical Junction Capacitance

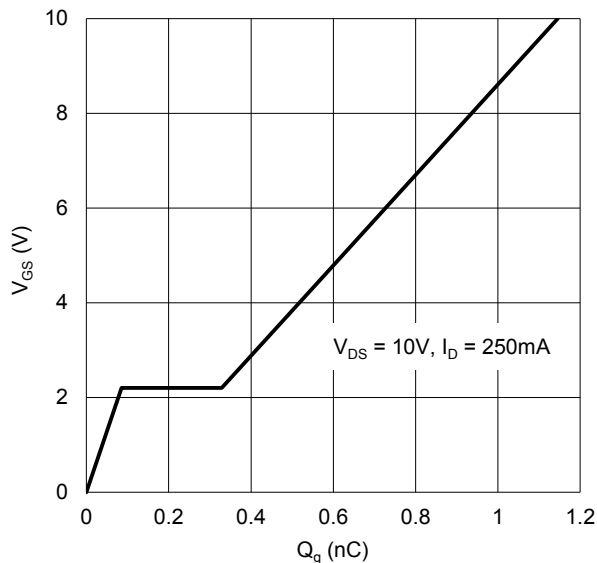


Figure 11. Gate Charge

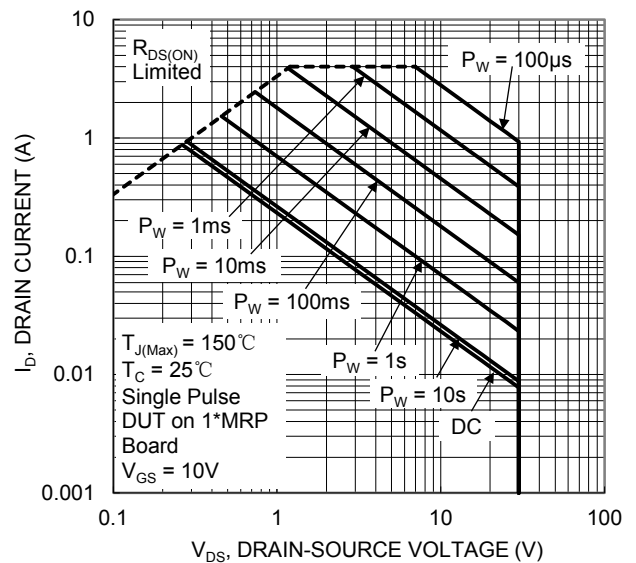


Figure 12. SOA, Safe Operation Area

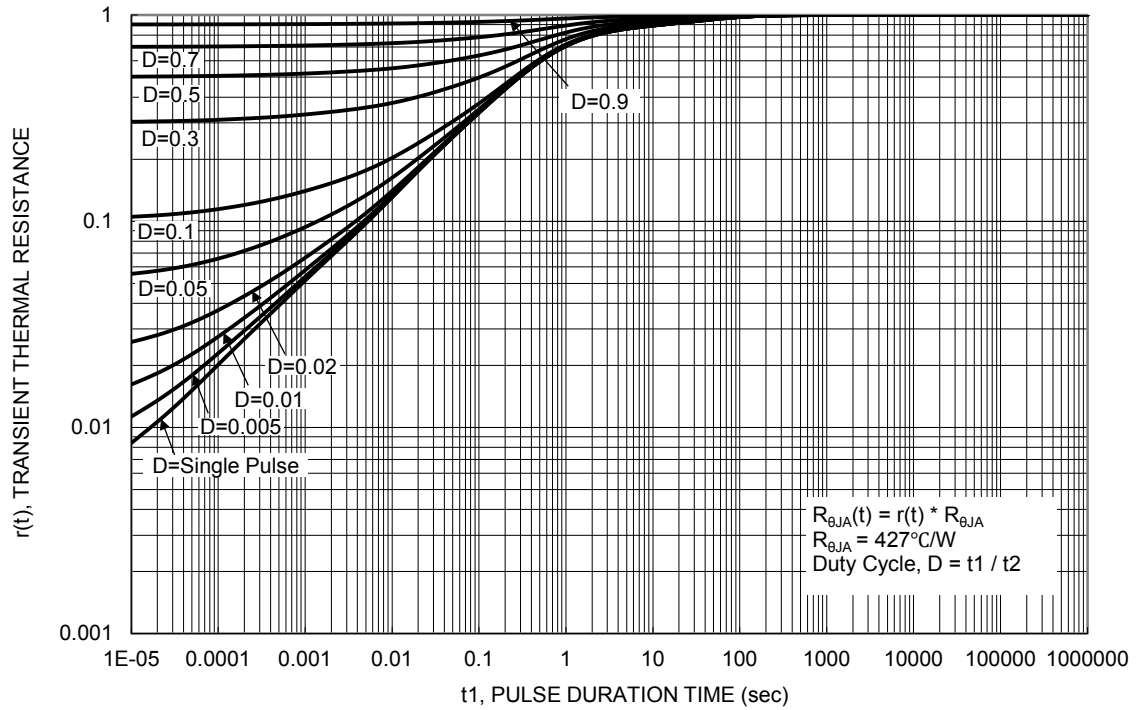
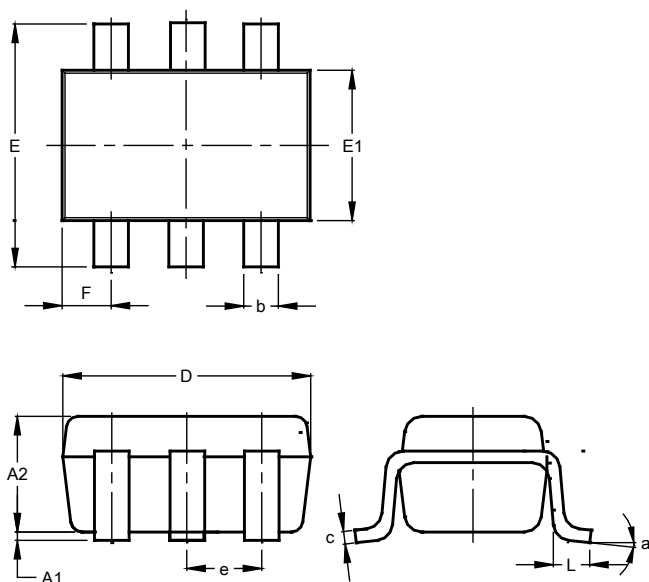


Figure 13. Transient Thermal Resistance

Package Outline Dimensions

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

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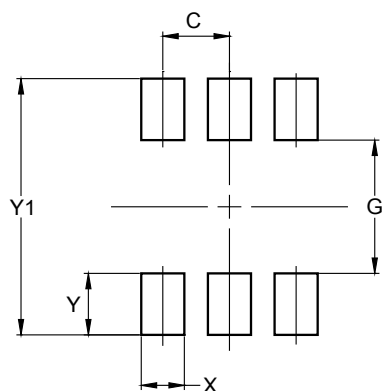


SOT363			
Dim	Min	Max	Typ
A1	0.00	0.10	0.05
A2	0.90	1.00	0.95
b	0.10	0.30	0.25
c	0.10	0.22	0.11
D	1.80	2.20	2.15
E	2.00	2.20	2.10
E1	1.15	1.35	1.30
e	0.650 BSC		
F	0.40	0.45	0.425
L	0.25	0.40	0.30
a	0°	8°	--
All Dimensions in mm			

Suggested Pad Layout

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

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Dimensions	Value (in mm)
C	0.650
G	1.300
X	0.420
Y	0.600
Y1	2.500

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