

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

Characteristic			Symbol	Value	Units
Drain-Source Voltage			V _{DSS}	-12	V
Gate-Source Voltage			V _{GSS}	±8	V
Continuous Drain Current (Note 6) V _{GS} = -4.5V	Steady State	T _A = +25°C T _A = +70°C	I _D	-3.8 -3.0	A
Maximum Continuous Body Diode Forward Current (Note 6)			I _S	-1.7	A
Pulsed Drain Current (10μs pulse, duty cycle = 1%)			I _{DM}	-20	A

Thermal Characteristics

Characteristic			Symbol	Value	Units
Total Power Dissipation (Note 5)			P _D	0.66	W
Thermal Resistance, Junction to Ambient (Note 5)	Steady State		R _{θJA}	192	°C/W
Total Power Dissipation (Note 6)			P _D	1.03	W
Thermal Resistance, Junction to Ambient (Note 6)	Steady State		R _{θJA}	123	°C/W
Thermal Resistance, Junction to Case			R _{θJC}	39	°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}	-12	-	-	V	V _{GS} = 0V, I _D = -250μA
Zero Gate Voltage Drain Current T _J = +25°C	I _{DSS}	-	-	-1.0	μA	V _{DS} = -12V, V _{GS} = 0V
Gate-Source Leakage	I _{GSS}	-	-	±10	μA	V _{GS} = ±8V, V _{DS} = 0V
ON CHARACTERISTICS (Note 7)						
Gate Threshold Voltage	V _{GS(TH)}	-0.4	-	-1	V	V _{DS} = V _{GS} , I _D = -250μA
Static Drain-Source On-Resistance	R _{DS(ON)}	-	41	48	mΩ	V _{GS} = -4.5V, I _D = -3.0A
		-	49	59		V _{GS} = -2.5V, I _D = -1.0A
		-	69	80		V _{GS} = -1.8V, I _D = -1.0A
		-	110	150		V _{GS} = -1.5V, I _D = -0.5A
		-	-	-		V _{GS} = -1.5V, I _D = -0.5A
Diode Forward Voltage	V _{SD}	-	-0.7	-1.2	V	V _{GS} = 0V, I _S = -3.7A
DYNAMIC CHARACTERISTICS (Note 8)						
Input Capacitance	C _{ISS}	-	1,028	-	pF	V _{DS} = -6V, V _{GS} = 0V, f = 1.0MHz
Output Capacitance	C _{OSS}	-	285	-	pF	
Reverse Transfer Capacitance	C _{RSS}	-	254	-	pF	
Gate Resistance	R _g	-	19.6	-	Ω	V _{DS} = 0V, V _{GS} = 0V, f = 1MHz
Total Gate Charge (V _{GS} = -4.5V)	Q _g	-	13	-	nC	V _{DS} = -10V, I _D = -4.7A
Total Gate Charge (V _{GS} = -8V)		-	20.8	-	nC	
Gate-Source Charge	Q _{gs}	-	1.8	-	nC	
Gate-Drain Charge	Q _{gd}	-	4.5	-	nC	
Turn-On Delay Time	t _{D(ON)}	-	5.6	-	ns	V _{DD} = -6V, V _{GS} = -4.5V, R _L = 1.6Ω, R _G = 1Ω
Turn-On Rise Time	t _R	-	12.8	-	ns	
Turn-Off Delay Time	t _{D(OFF)}	-	30.7	-	ns	
Turn-Off Fall Time	t _F	-	25.4	-	ns	
Body Diode Reverse Recovery Time	t _{RR}	-	31.6	-	ns	I _S = -3.6A, dI/dt = 100A/μs
Body Diode Reverse Recovery Charge	Q _{RR}	-	7.8	-	nC	I _S = -3.6A, dI/dt = 100A/μs

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

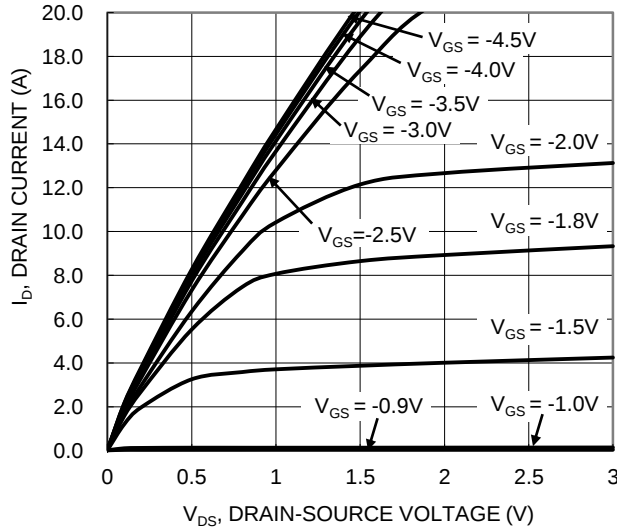


Figure 1. Typical Output Characteristic

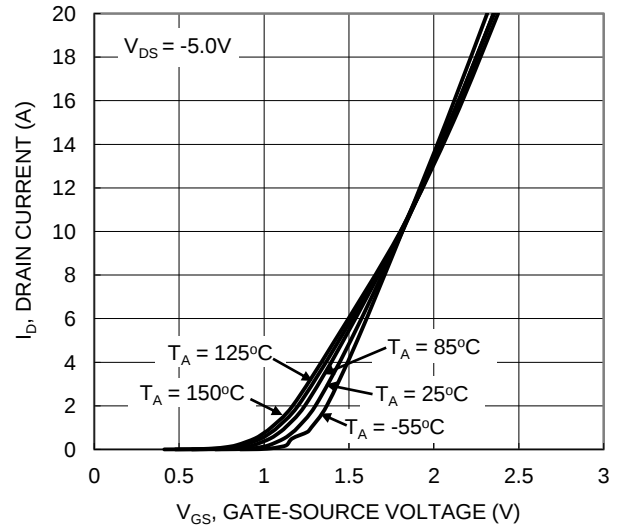


Figure 2. Typical Transfer Characteristic

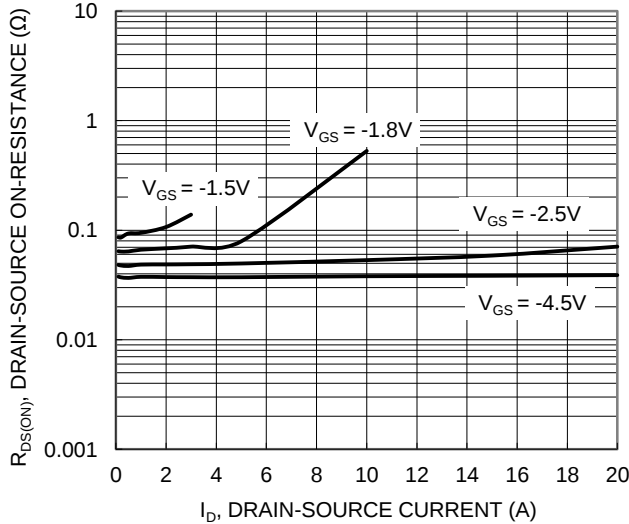


Figure 3. Typical On-Resistance vs. Drain Current and Gate Voltage

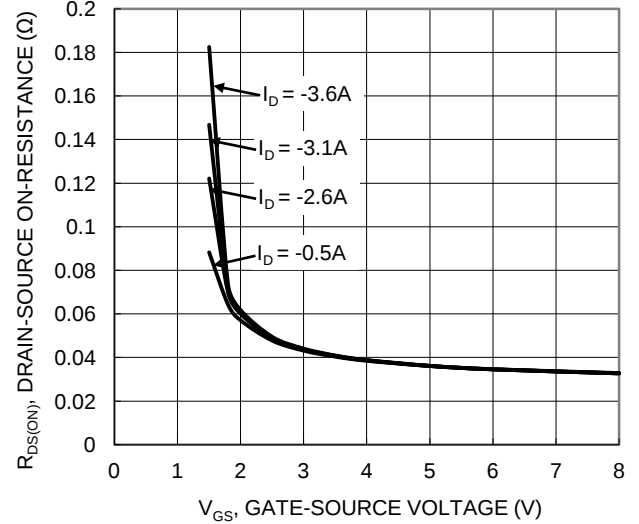


Figure 4. Typical Transfer Characteristic

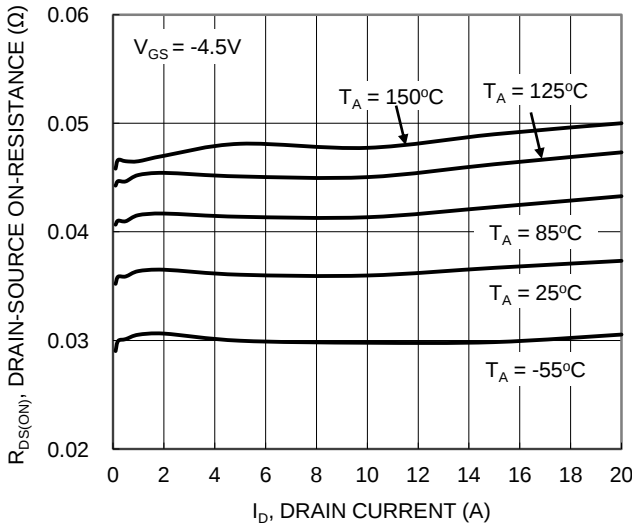


Figure 5. Typical On-Resistance vs. Drain Current and Temperature

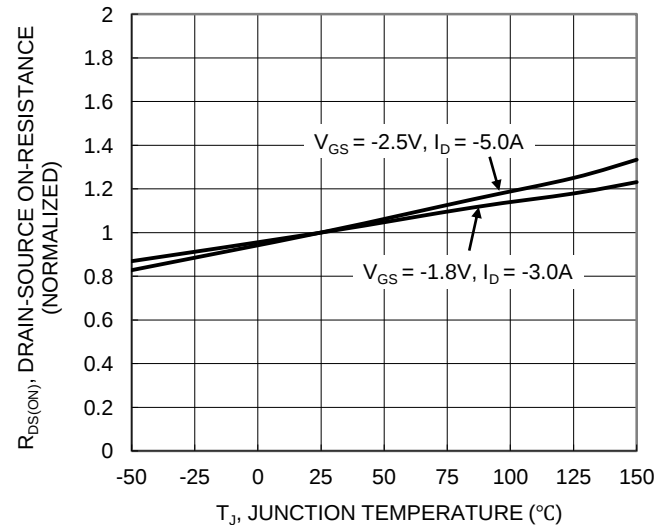
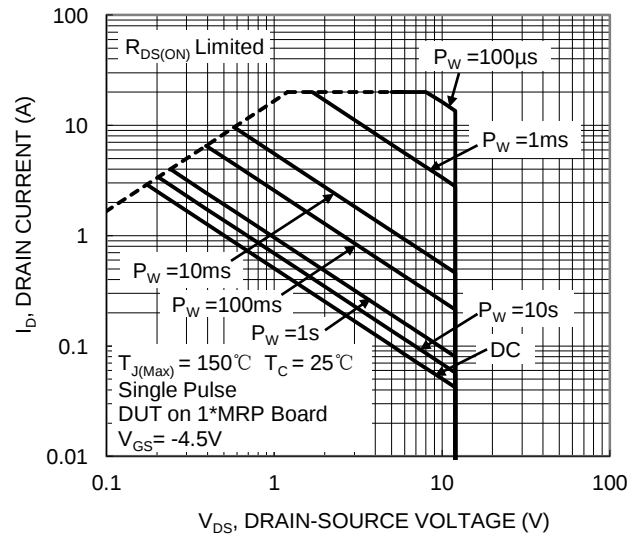
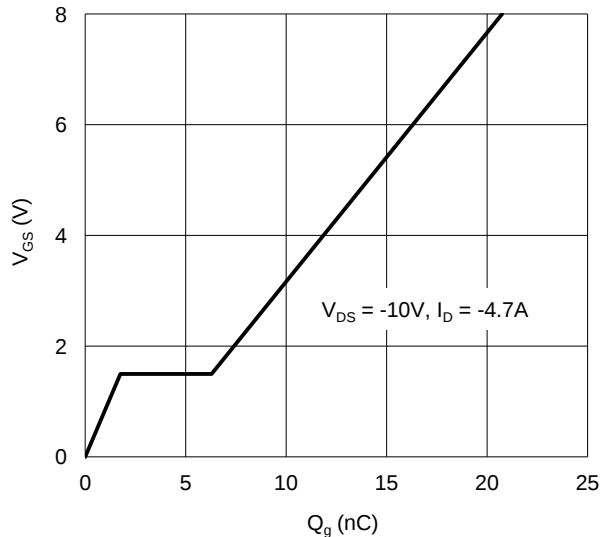
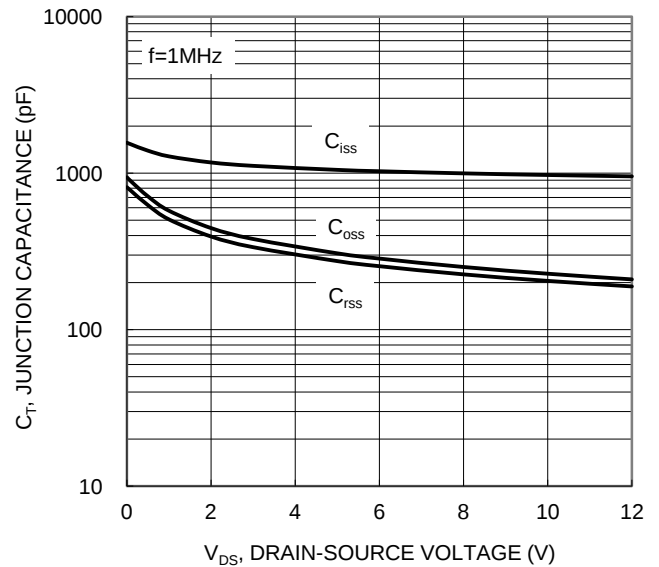
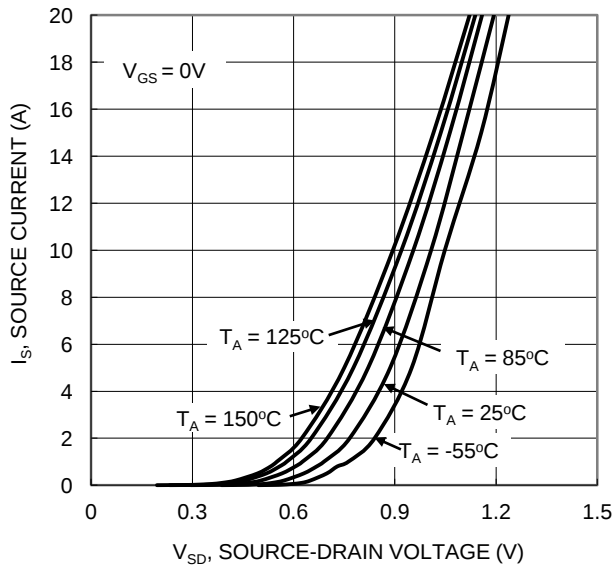
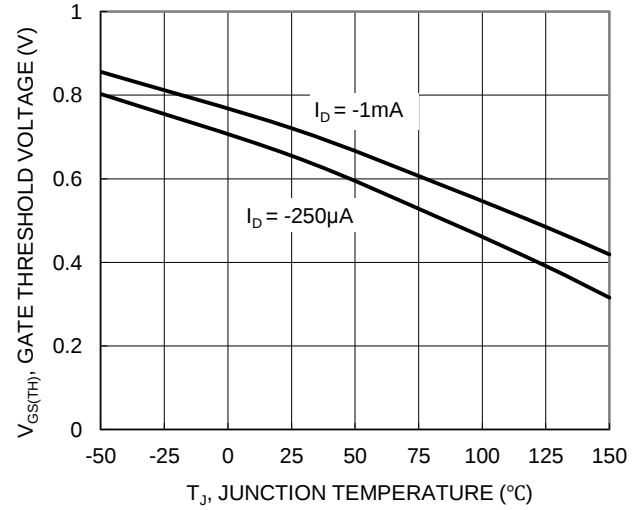
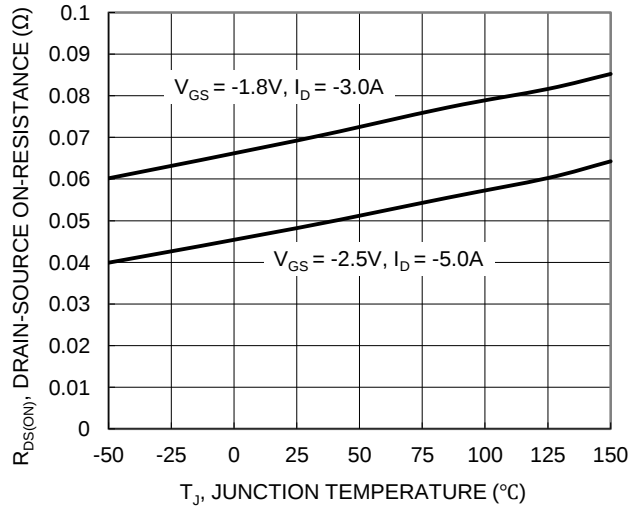


Figure 6. On-Resistance Variation with Temperature



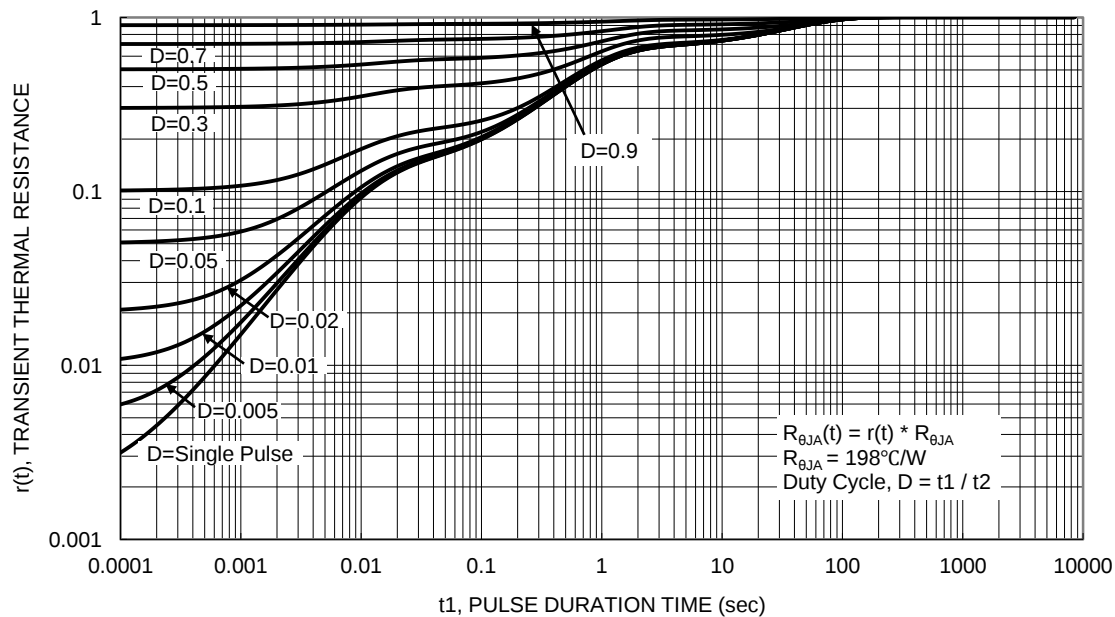
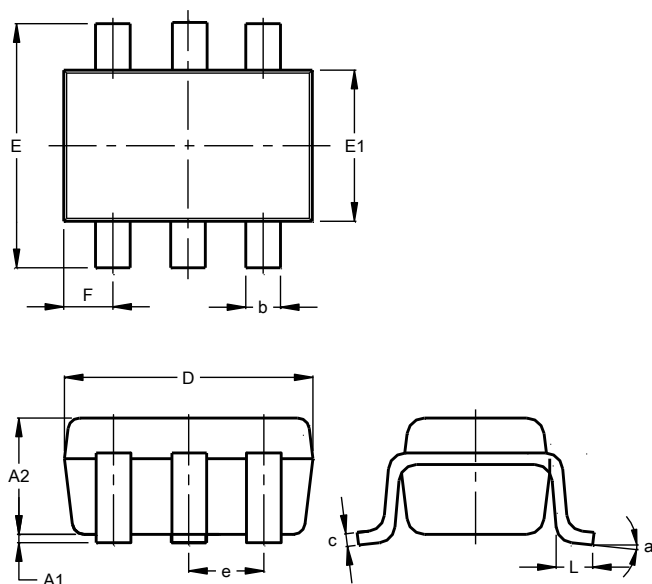


Figure 13. Transient Thermal Resistance

Package Outline Dimensions

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

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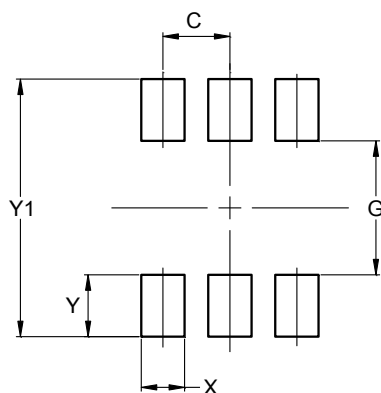


SOT363			
Dim	Min	Max	Typ
A1	0.00	0.10	0.05
A2	0.90	1.00	1.00
b	0.10	0.30	0.25
c	0.10	0.22	0.11
D	1.80	2.20	2.15
E	2.00	2.20	2.10
E1	1.15	1.35	1.30
e	0.650 BSC		
F	0.40	0.45	0.425
L	0.25	0.40	0.30
a	0°	8°	--
All Dimensions in mm			

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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