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

Characteristic			Symbol	Value	Unit
Drain-Source Voltage			V_{DSS}	60	V
Gate-Source Voltage			V_{GSS}	±20	V
Continuous Drain Current (Note 7) V_{GS} = 5.0V	Steady State	T_A = +25°C T_A = +70°C	I_D	340 270	mA
	t<5s	T_A = +25°C T_A = +70°C	I_D	400 300	mA
Maximum Continuous Body Diode Forward Current (Note 7)			I_S	0.4	A
Pulsed Drain Current (10µs Pulse, Duty Cycle = 1%) (Note 7)			I_{DM}	1.2	A

Thermal Characteristics (@T_A = +25°C, unless otherwise specified.)

Characteristic		Symbol	Value	Unit
Total Power Dissipation (Note 6)		P_D	320	mW
Thermal Resistance, Junction to Ambient (Note 6)	Steady State	$R_{\theta JA}$	393	°C/W
	t<5s		306	
Total Power Dissipation (Note 7)		P_D	440	mW
Thermal Resistance, Junction to Ambient (Note 7)	Steady State	$R_{\theta JA}$	289	°C/W
	t<5s		235	
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)						
Drain-Source Breakdown Voltage	BV_{DSS}	60	—	—	V	V_{GS} = 0V, I_D = 250µA
Zero Gate Voltage Drain Current	I_{DSS}	—	—	1.0	µA	V_{DS} = 60V, V_{GS} = 0V
Gate-Source Leakage	I_{GSS}	—	—	±10	µA	V_{GS} = ±20V, V_{DS} = 0V
ON CHARACTERISTICS (Note 8)						
Gate Threshold Voltage	$V_{GS(TH)}$	0.5	—	1.0	V	V_{DS} = 10V, I_D = 250µA
Static Drain-Source On-Resistance	$R_{DS(ON)}$	—	1.2	2.0	Ω	V_{GS} = 5.0V, I_D = 0.05A
			1.6	2.5		V_{GS} = 2.5V, I_D = 0.05A
			2.5	3.5		V_{GS} = 1.8V, I_D = 0.05A
Forward Transconductance	$\|Y_{fs}\|$	200	—	—	mS	V_{DS} =10V, I_D = 0.2A
Diode Forward Voltage	V_{SD}	—	0.75	1.4	V	V_{GS} = 0V, I_S = 115mA
DYNAMIC CHARACTERISTICS (Note 9)						
Input Capacitance	C_{iss}	—	28.5	—	pF	V_{DS} = 30V, V_{GS} = 0V f = 1.0MHz
Output Capacitance	C_{oss}	—	3.9	—	pF	
Reverse Transfer Capacitance	C_{rss}	—	2.5	—	pF	
Gate Resistance	R_g	—	65	—	Ω	f = 1MHz , V_{GS} = 0V, V_{DS} = 0V
Total Gate Charge	Q_g	—	0.4	—	nC	V_{GS} = 4.5V, V_{DS} = 10V, I_D = 250mA
Gate-Source Charge	Q_{gs}	—	0.1	—	nC	
Gate-Drain Charge	Q_{gd}	—	0.1	—	nC	
Turn-On Delay Time	$t_{D(ON)}$	—	2.1	—	ns	V_{DD} = 30V, V_{GS} = 10V, R_G = 25Ω, I_D = 200mA
Turn-On Rise Time	t_R	—	1.8	—	ns	
Turn-Off Delay Time	$t_{D(OFF)}$	—	14.4	—	ns	
Turn-Off Fall Time	t_F	—	8.4	—	ns	

Notes: 6. Device mounted on FR-4 PCB, with minimum recommended pad layout.
7. Device mounted on 1" x 1" FR-4 PCB with high coverage 2oz. Copper, single sided.
8. Short duration pulse test used to minimize self-heating effect.
9. Guaranteed by design. Not subject to product testing.

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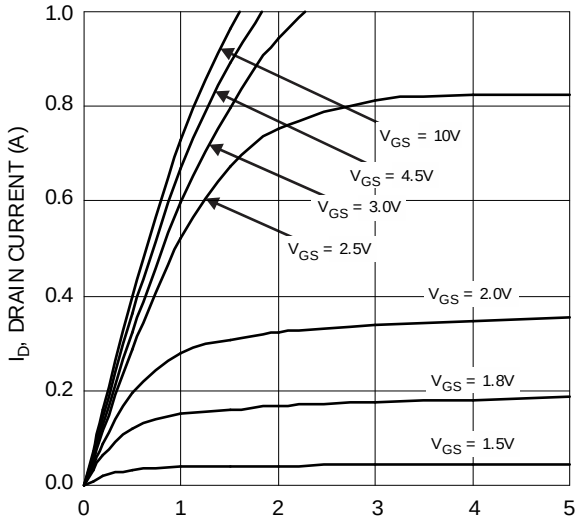

Figure 1 Typical Output Characteristics

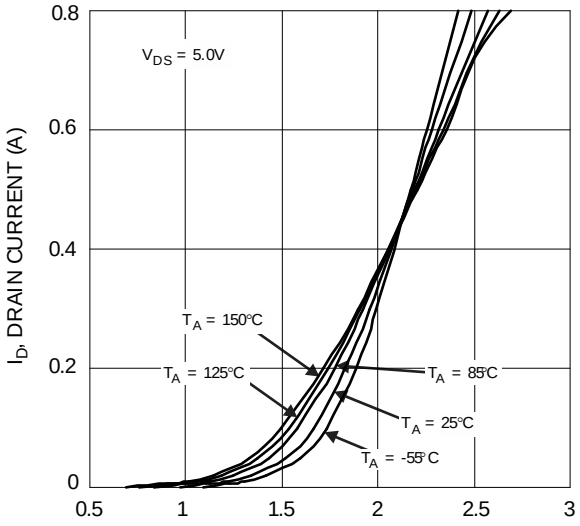

Figure 2 Typical Transfer Characteristics

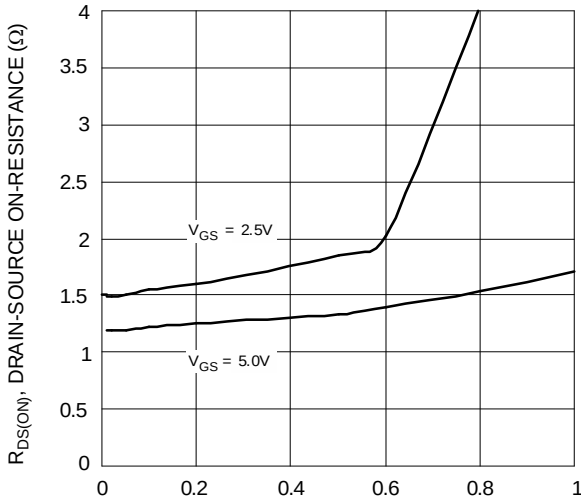

Figure 3 Typical On-Resistance vs. Drain Current and Gate Voltage

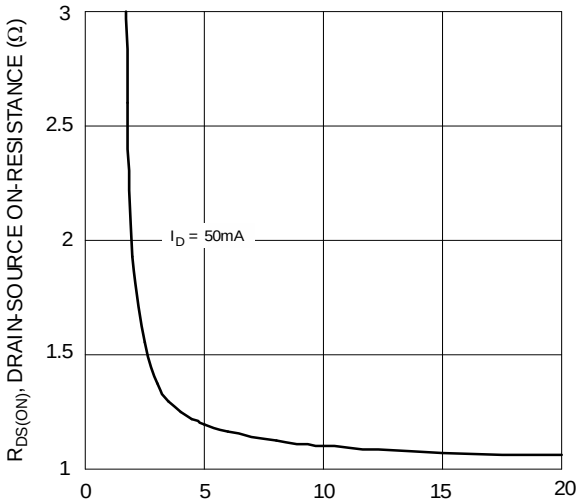

Figure 4 Typical Drain-Source On-Resistance vs. Gate-Source Voltage

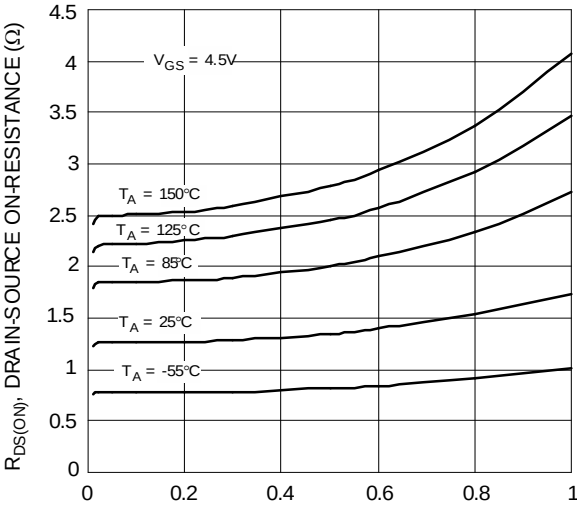

Figure 5 Typical On-Resistance vs. Drain Current and Temperature

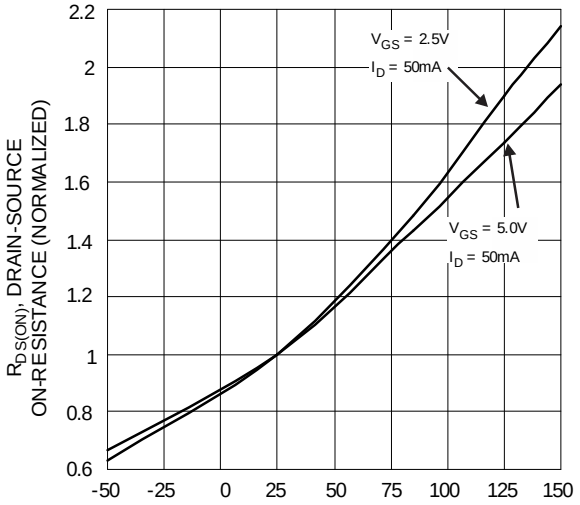

Figure 6 On-Resistance Variation with Junction Temperature

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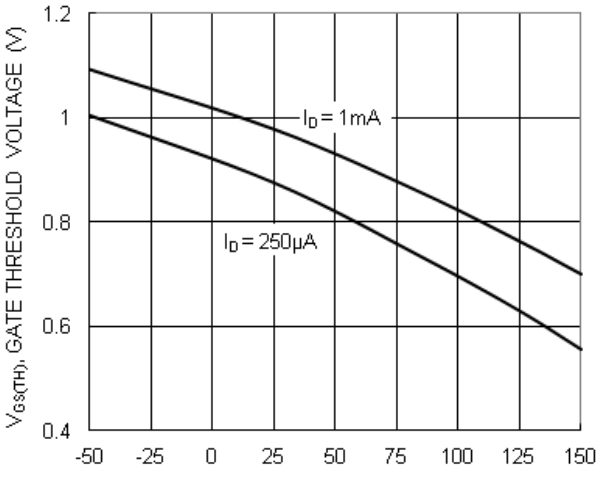

Figure 7. Gate Threshold Variation vs. Junction Temperature

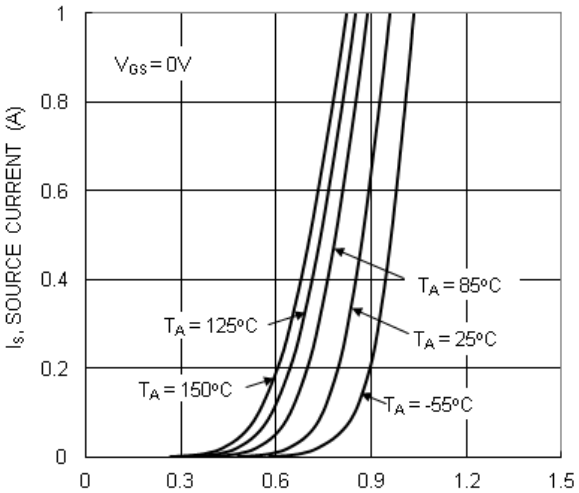

Figure 8. Diode Forward Voltage vs. Current

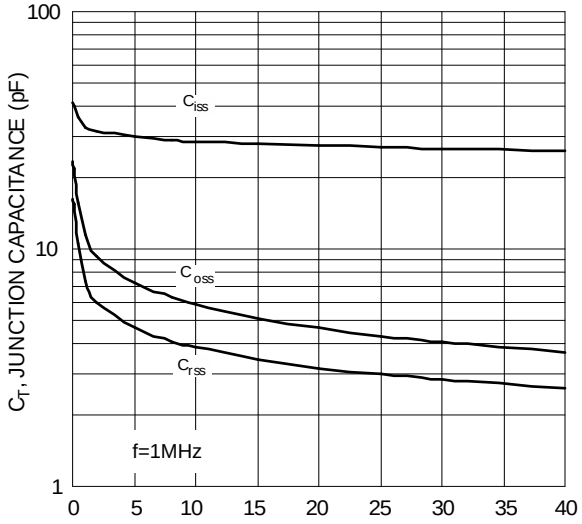

Figure 9 Typical Junction Capacitance

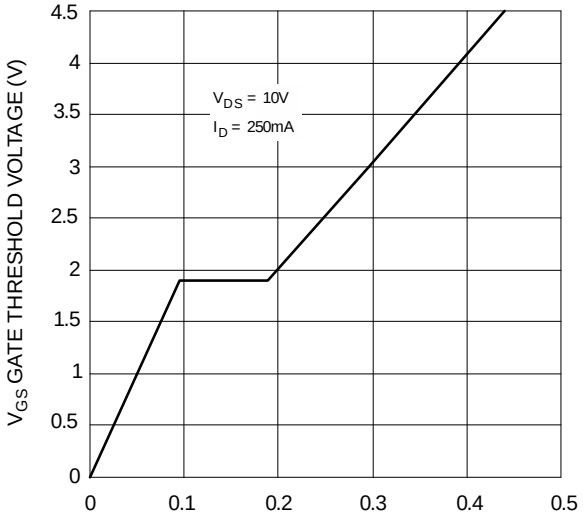

Figure 10 Gate Charge

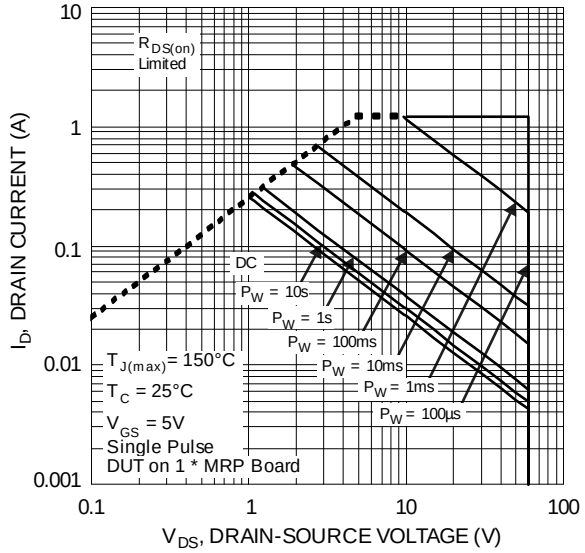

Figure 11 SOA, Safe Operation Area

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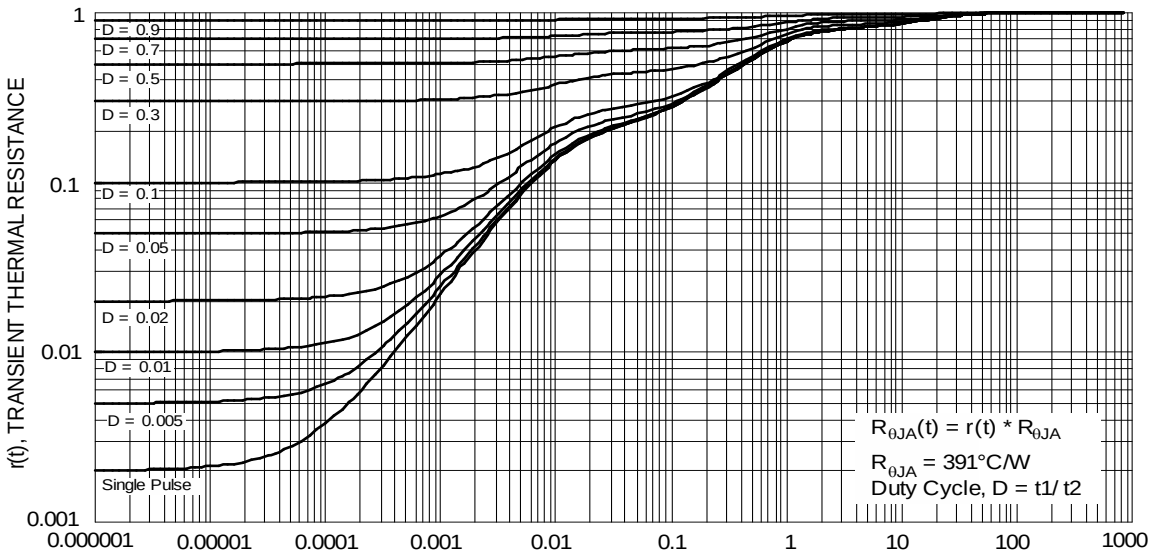

Figure 12 Transient Thermal Resistance

Package Outline Dimensions

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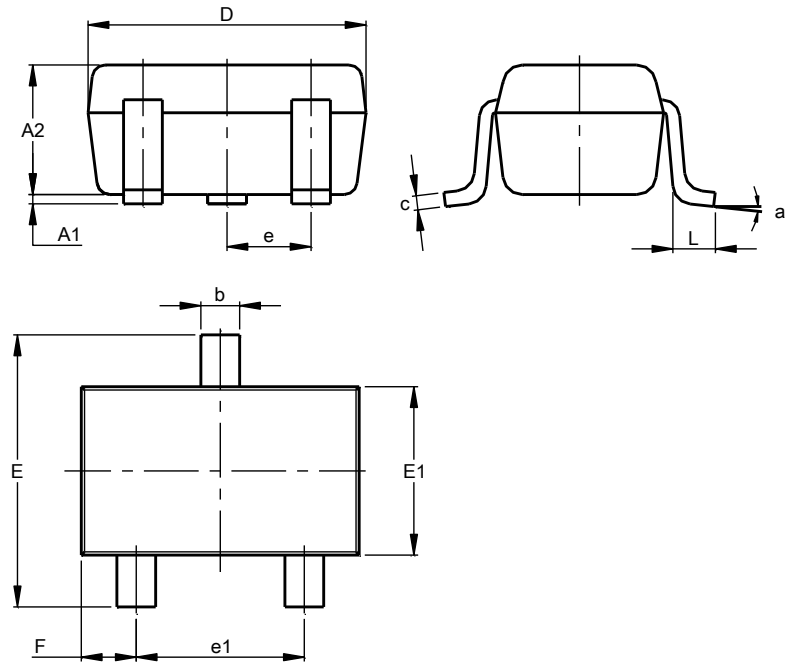

SOT323			
Dim	**Min**	**Max**	**Typ**
A1	0.00	0.10	0.05
A2	0.90	1.00	0.95
b	0.25	0.40	0.30
c	0.10	0.18	0.11
D	1.80	2.20	2.15
E	2.00	2.20	2.10
E1	1.15	1.35	1.30
e	0.650 BSC		
e1	1.20	1.40	1.30
F	0.375	0.475	0.425
L	0.25	0.40	0.30
a	0°	8°	--
All Dimensions in mm			

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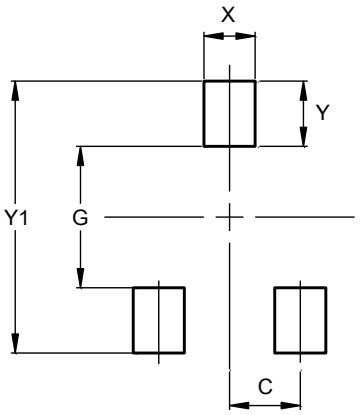
Suggested Pad Layout

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



Dimensions	Value (in mm)
C	0.650
G	1.300
X	0.470
Y	0.600
Y1	2.500

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