

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 6) V _{GS} = 4.5V	Steady State	T _A = +25°C	I _D	380	mA
		T _A = +70°C	I _D	300	mA
	t < 5s	T _A = +25°C T _A = +70°C	I _D	430 340	mA
Maximum Continuous Body Diode Forward Current (Note 6)			I _S	0.4	A
Pulsed Drain Current (10µs Pulse, Duty Cycle = 1%) (Note 6)			I _{DM}	1.2	A

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

Characteristic			Symbol	Value	Unit
Total Power Dissipation (Note 5)			P _D	380	mW
Thermal Resistance, Junction to Ambient (Note 5)	Steady State		R _{θJA}	338	°C/W
	t < 5s		R _{θJA}	292	°C/W
Total Power Dissipation (Note 6)			P _D	590	mW
Thermal Resistance, Junction to Ambient (Note 6)	Steady State		R _{θJA}	216	°C/W
	t < 5s		R _{θJA}	177	°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}	60	—	—	V	V _{GS} = 0V, I _D = 10µA
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 7)						
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} = 4.5V, I _D = 0.1A
			1.4	2.5		V _{GS} = 2.5V, I _D = 0.05A
			1.8	3.0		V _{GS} = 1.8V, I _D = 0.05A
Forward Transconductance	Y _{fs}	—	1.8	—	S	V _{DS} = 10V, I _D = 0.2A
Diode Forward Voltage	V _{SD}	—	0.8	1.3	V	V _{GS} = 0V, I _S = 115mA
DYNAMIC CHARACTERISTICS (Note 8)						
Input Capacitance	C _{iss}	—	32	—	pF	V _{DS} = 30V, V _{GS} = 0V f = 1.0MHz
Output Capacitance	C _{oss}	—	3.9	—	pF	
Reverse Transfer Capacitance	C _{rss}	—	2.4	—	pF	
Gate Resistance	R _g	—	101	—	Ω	f = 1MHz, V _{GS} = 0V, V _{DS} = 0V
Total Gate Charge	Q _g	—	0.5	—	nC	V _{GS} = 4.5V, V _{DS} = 10V, I _D = 250mA
Gate-Source Charge	Q _{gs}	—	0.09	—	nC	
Gate-Drain Charge	Q _{gd}	—	0.09	—	nC	
Turn-On Delay Time	t _{D(ON)}	—	2.4	—	ns	V _{DD} = 30V, V _{GS} = 10V, R _G = 25Ω, I _D = 200mA
Turn-On Rise Time	t _R	—	2.5	—	ns	
Turn-Off Delay Time	t _{D(OFF)}	—	22.6	—	ns	
Turn-Off Fall Time	t _F	—	12.5	—	ns	

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

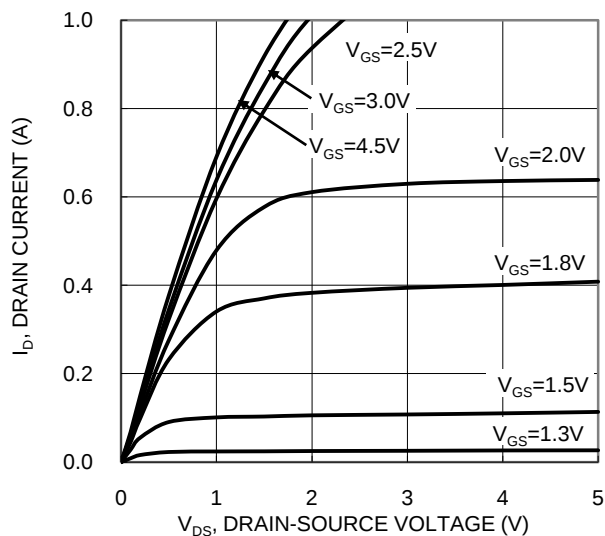


Figure 1. Typical Output Characteristic

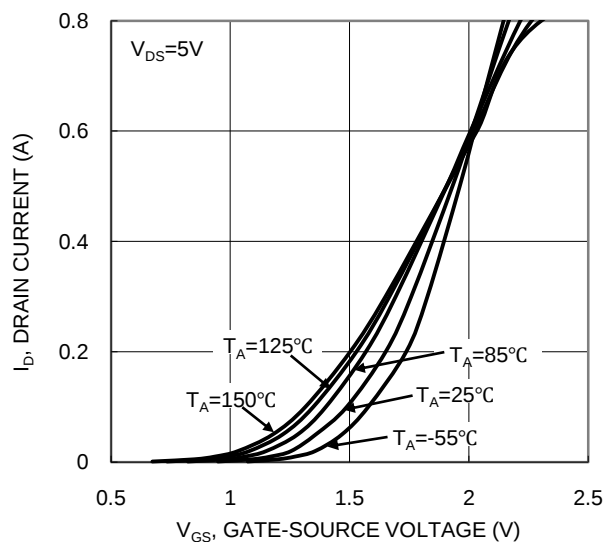


Figure 2. Typical Transfer Characteristic

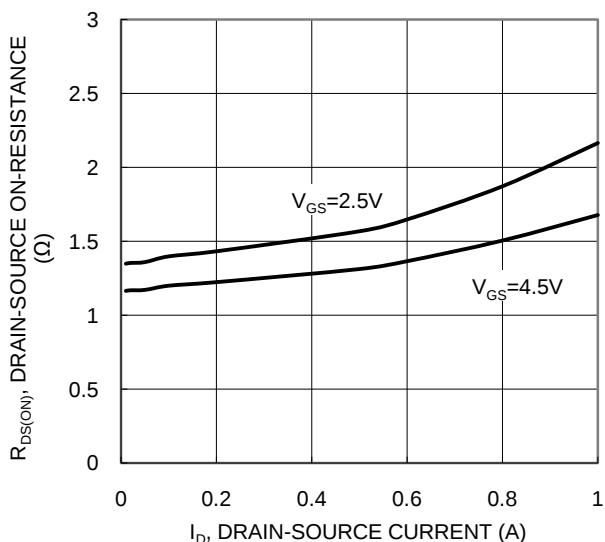


Figure 3. Typical On-Resistance vs. Drain Current and Gate Voltage

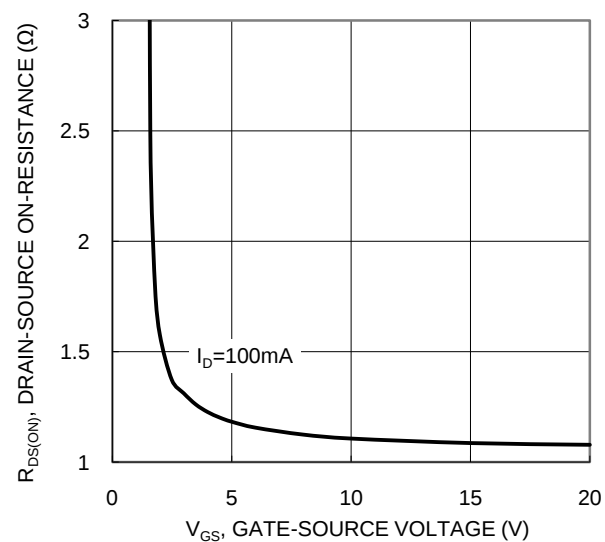


Figure 4. Typical Transfer Characteristic

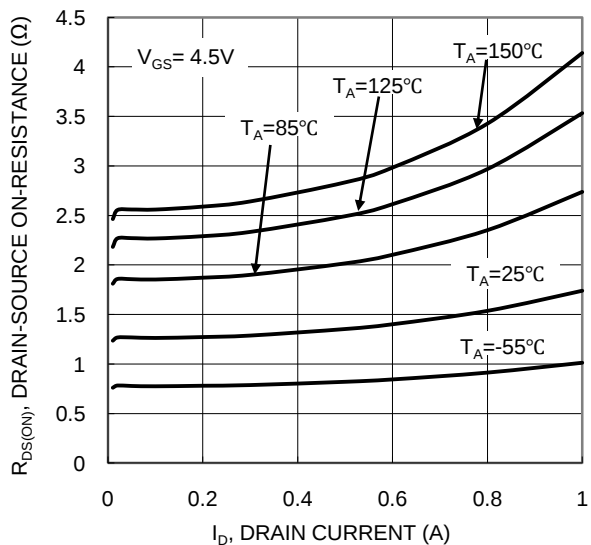


Figure 5. Typical On-Resistance vs. Drain Current and Temperature

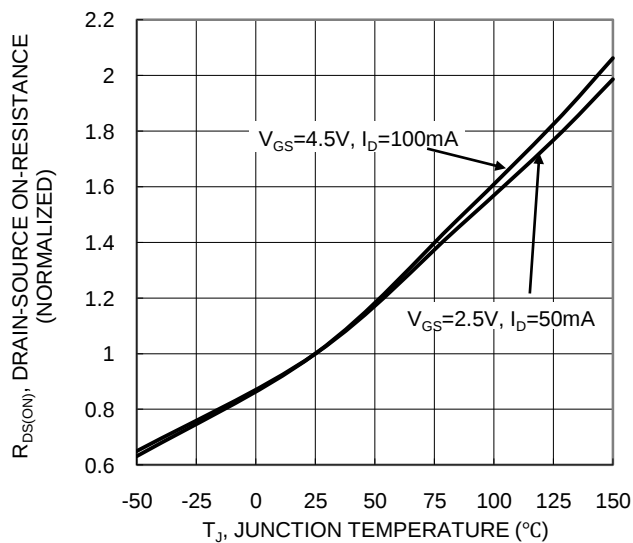
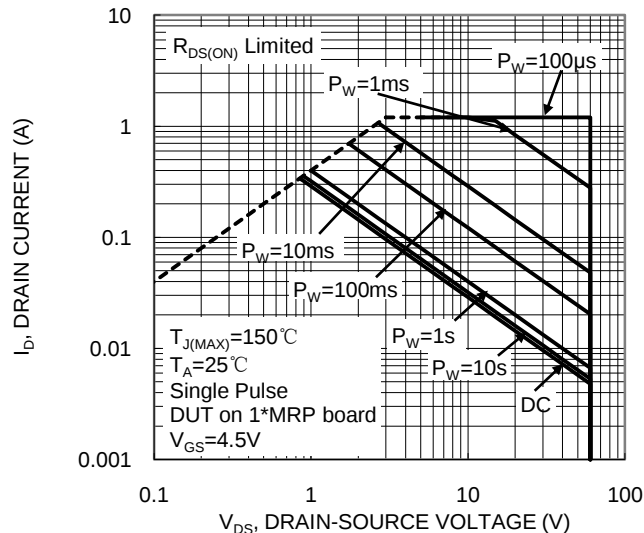
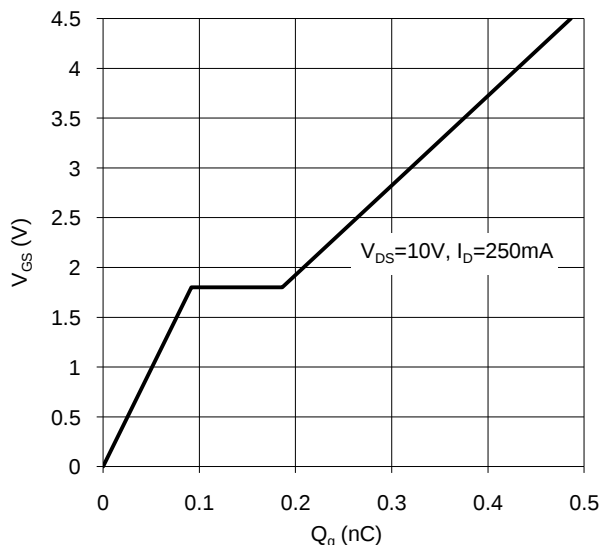
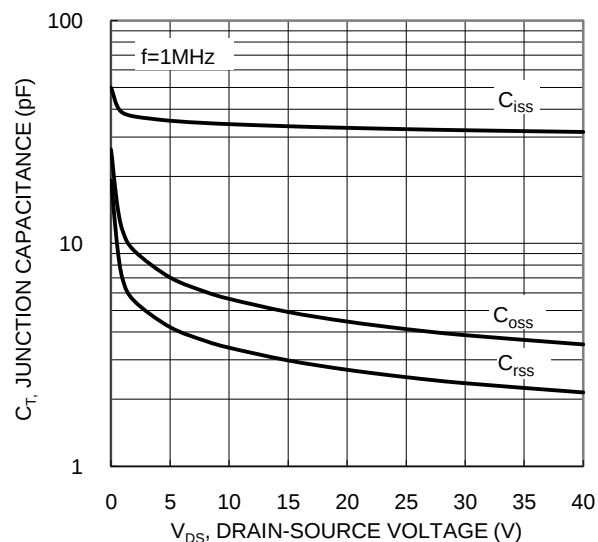
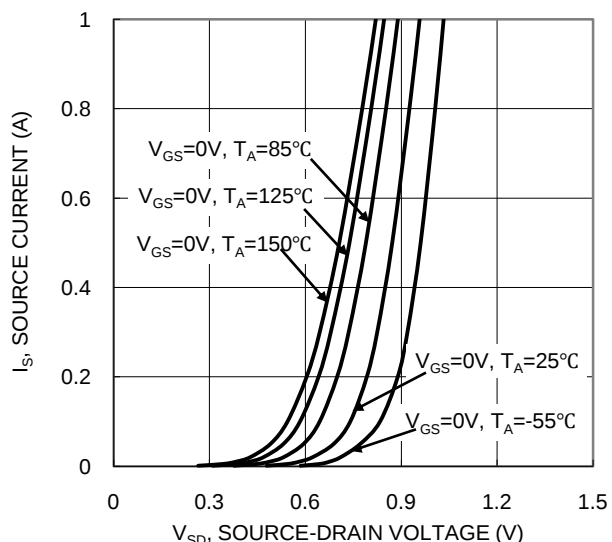
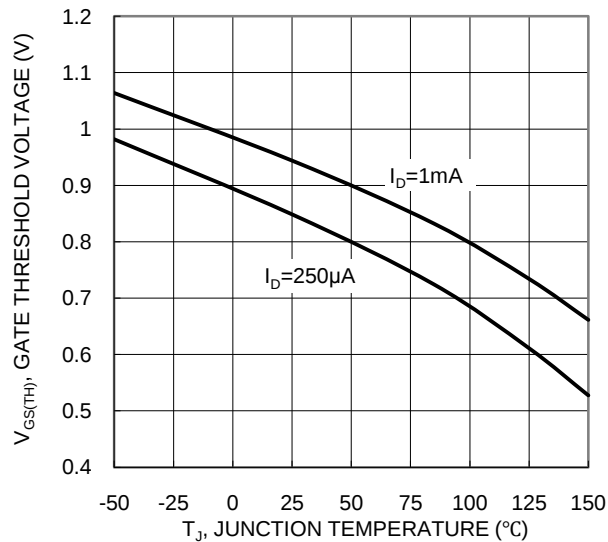
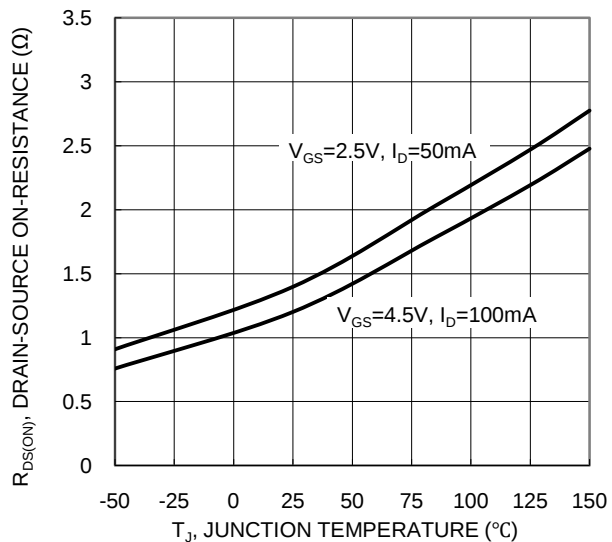


Figure 6. On-Resistance Variation with Junction Temperature



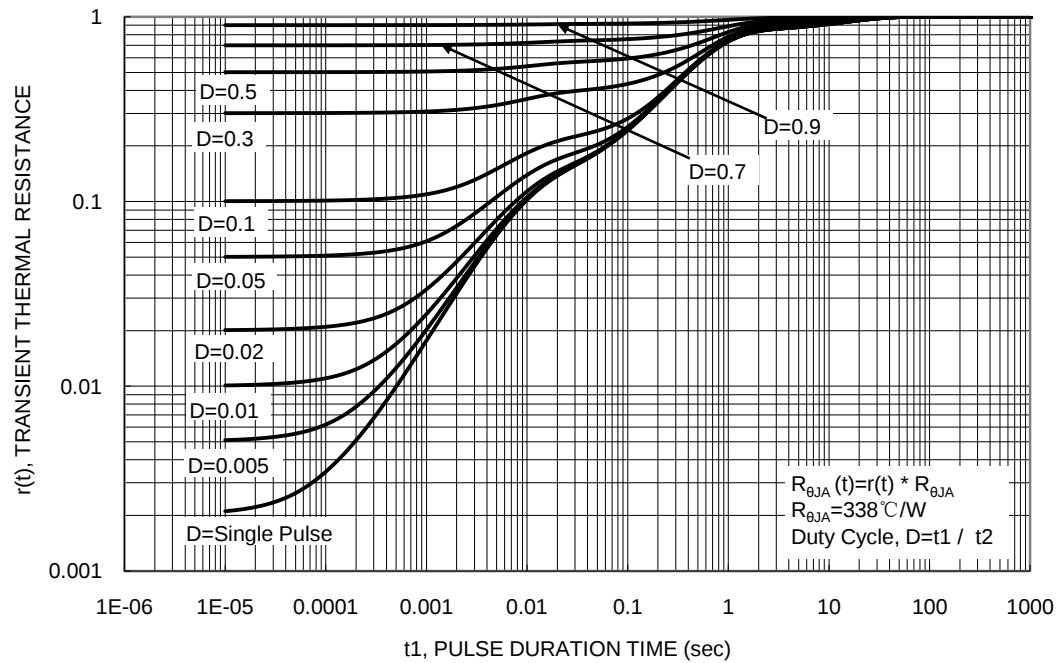
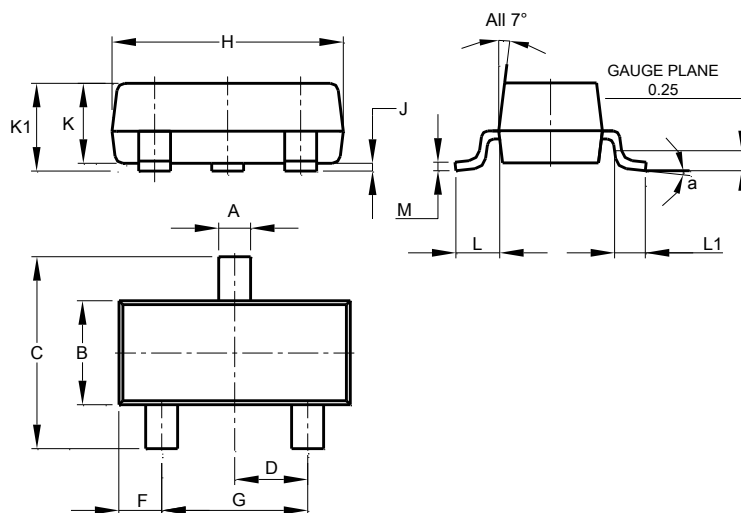


Figure 13. Transient Thermal Resistance

Package Outline Dimensions

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

SOT23

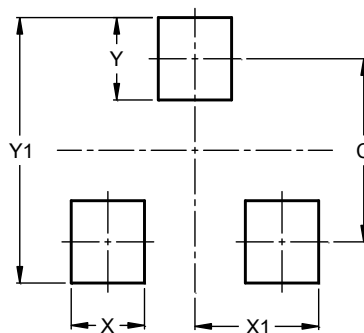


SOT23			
Dim	Min	Max	Typ
A	0.37	0.51	0.40
B	1.20	1.40	1.30
C	2.30	2.50	2.40
D	0.89	1.03	0.915
F	0.45	0.60	0.535
G	1.78	2.05	1.83
H	2.80	3.00	2.90
J	0.013	0.10	0.05
K	0.890	1.00	0.975
K1	0.903	1.10	1.025
L	0.45	0.61	0.55
L1	0.25	0.55	0.40
M	0.085	0.150	0.110
a	0°	8°	--
All Dimensions in mm			

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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