

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

Characteristic			Symbol	Value	Unit
Drain-Source Voltage			V _{DSS}	-20	V
Gate-Source Voltage			V _{GSS}	±8	V
Drain Current (Note 5)	Steady State	T _A = +25°C	I _D	-430	mA
		T _A = +85°C		-310	
Pulsed Drain Current (Note 6)			I _{DM}	-750	mA

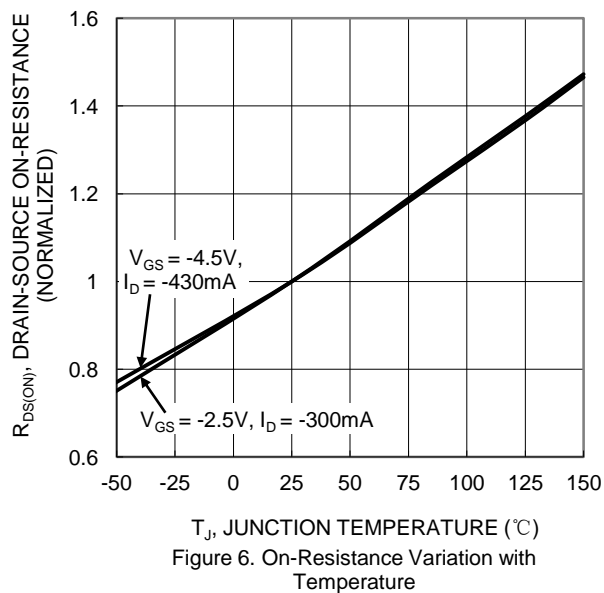
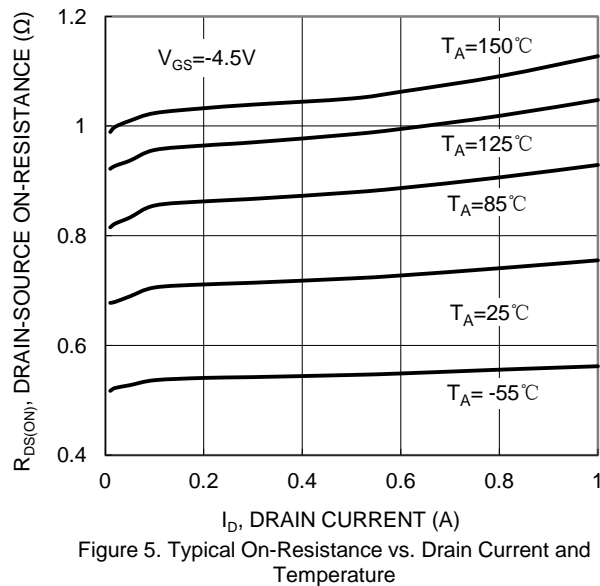
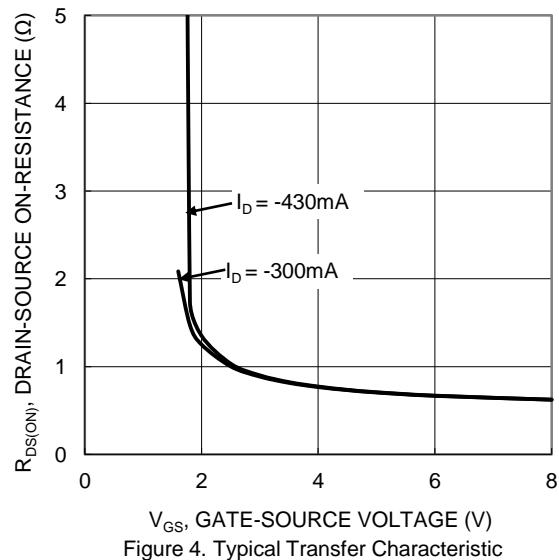
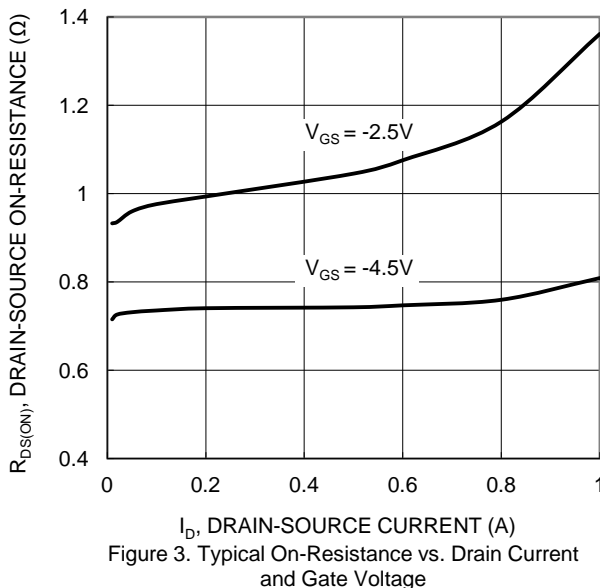
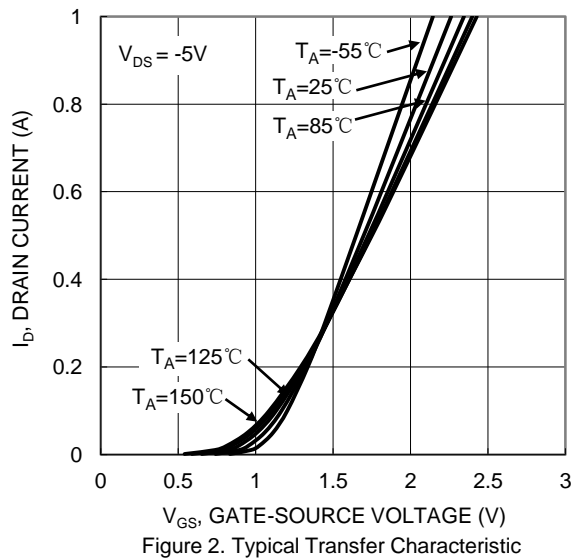
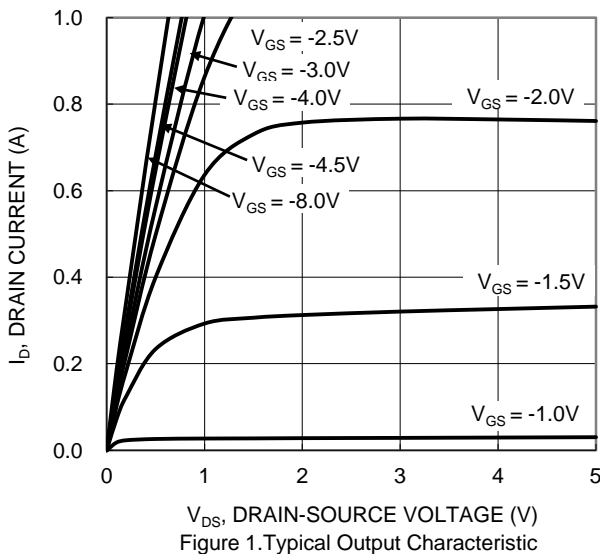
Thermal Characteristics (@T_A = +25°C, unless otherwise specified.)

Characteristic		Symbol	Value	Unit
Total Power Dissipation (Note 5)		P _D	230	mW
Thermal Resistance, Junction to Ambient (Note 5)	Steady State	R _{θJA}	558	°C/W
Total Power Dissipation (Note 6)		P _D	320	mW
Thermal Resistance, Junction to Ambient (Note 6)	Steady State	R _{θJA}	393	°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}	-20	—	—	V	V _{GS} = 0V, I _D = -250μA
Zero Gate Voltage Drain Current	I _{DSS}	—	—	-1.0	μA	V _{DS} = -20V, V _{GS} = 0V
Gate-Source Leakage	I _{GSS}	—	—	±1.0	μA	V _{GS} = ±4.5V, V _{DS} = 0V
ON CHARACTERISTICS (Note 7)						
Gate Threshold Voltage	V _{GS(TH)}	-0.5	—	-1.0	V	V _{DS} = V _{GS} , I _D = -250μA
Static Drain-Source On-Resistance	R _{DS(ON)}	—	0.7	1.1	Ω	V _{GS} = -4.5V, I _D = -430mA
			1.0	1.6		V _{GS} = -2.5V, I _D = -300mA
			1.3	2.4		V _{GS} = -1.8V, I _D = -150mA
Diode Forward Voltage	V _{SD}	—	-0.8	-1.4	V	V _{GS} = 0V, I _S = -115mA
DYNAMIC CHARACTERISTICS (Note 8)						
Input Capacitance	C _{iss}	—	47	—	pF	V _{DS} = -16V, V _{GS} = 0V f = 1.0MHz
Output Capacitance	C _{oss}	—	6.8	—	pF	
Reverse Transfer Capacitance	C _{rss}	—	4.9	—	pF	
Gate Resistance	R _g	—	240	—	Ω	V _{DS} = 0V, V _{GS} = 0V
Total Gate Charge V _{GS} = -4.5V	Q _g	—	0.55	—	nC	V _{DS} = -10V, I _D = -250mA
Total Gate Charge V _{GS} = -8V	Q _g	—	0.97	—	nC	
Gate-Source Charge	Q _{gs}	—	0.05	—	nC	
Gate-Drain Charge	Q _{gd}	—	0.1	—	nC	
Turn-On Delay Time	t _{D(ON)}	—	5.9	—	ns	V _{DD} = -3V, V _{GS} = -2.5V, R _G = 25Ω, I _D = -100mA
Turn-On Rise Time	t _r	—	3.3	—	ns	
Turn-Off Delay Time	t _{D(OFF)}	—	25.5	—	ns	
Turn-Off Fall Time	t _f	—	19.3	—	ns	I _F = -1A, di/dt = -100A/μs
Reverse Recovery Time	t _{RR}	—	7.3	—	ns	
Reverse Recovery Charge	Q _{RR}	—	1.9	—	nC	I _F = -1A, di/dt = -100A/μs

- 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.



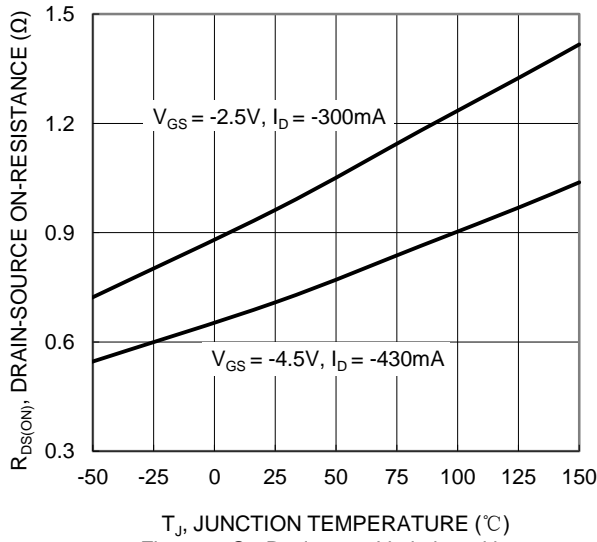


Figure 7. On-Resistance Variation with Temperature

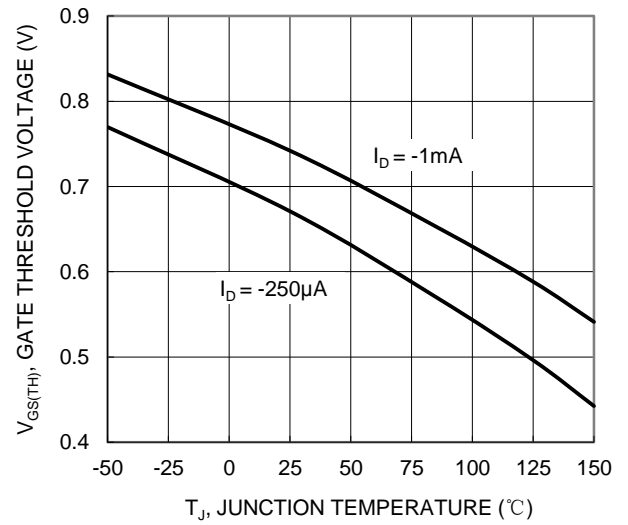


Figure 8. Gate Threshold Variation vs. Junction Temperature

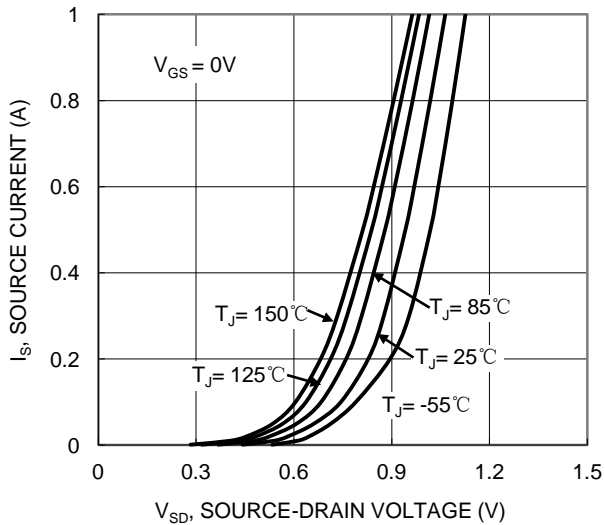


Figure 9. Diode Forward Voltage vs. Current

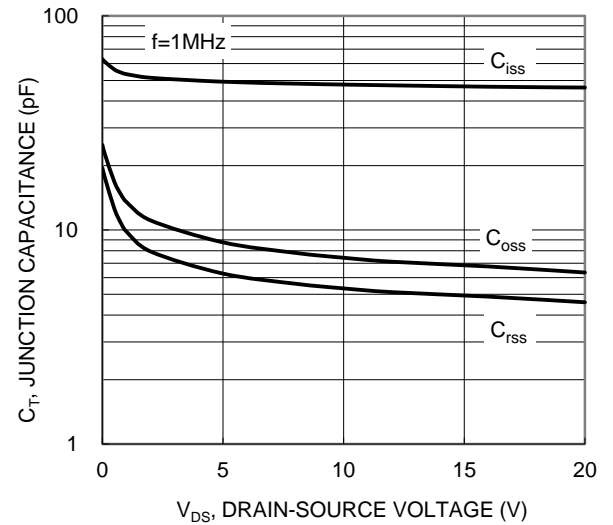


Figure 10. Typical Junction Capacitance

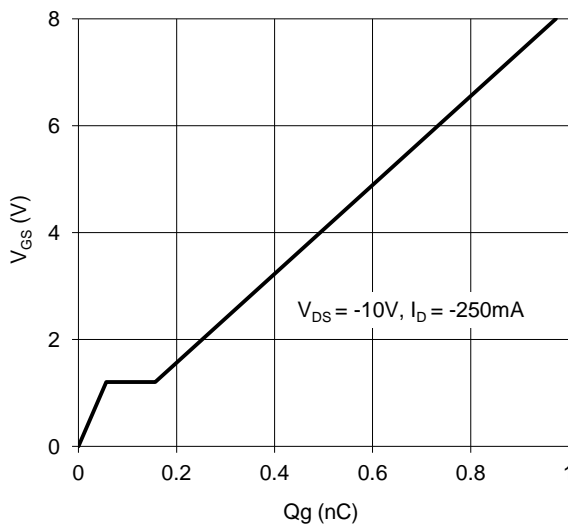


Figure 11. Gate Charge

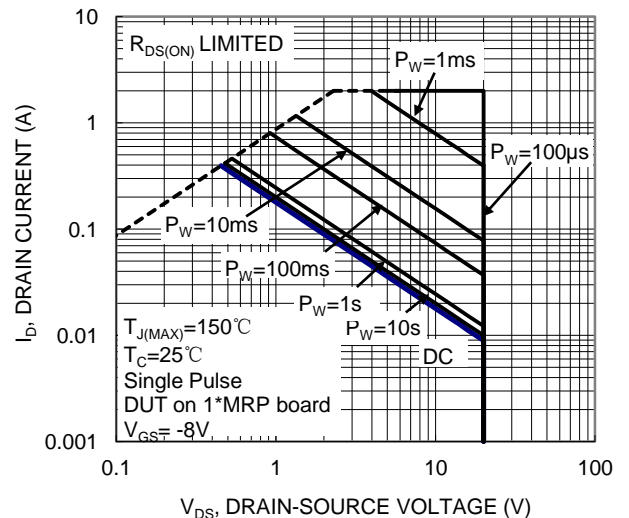
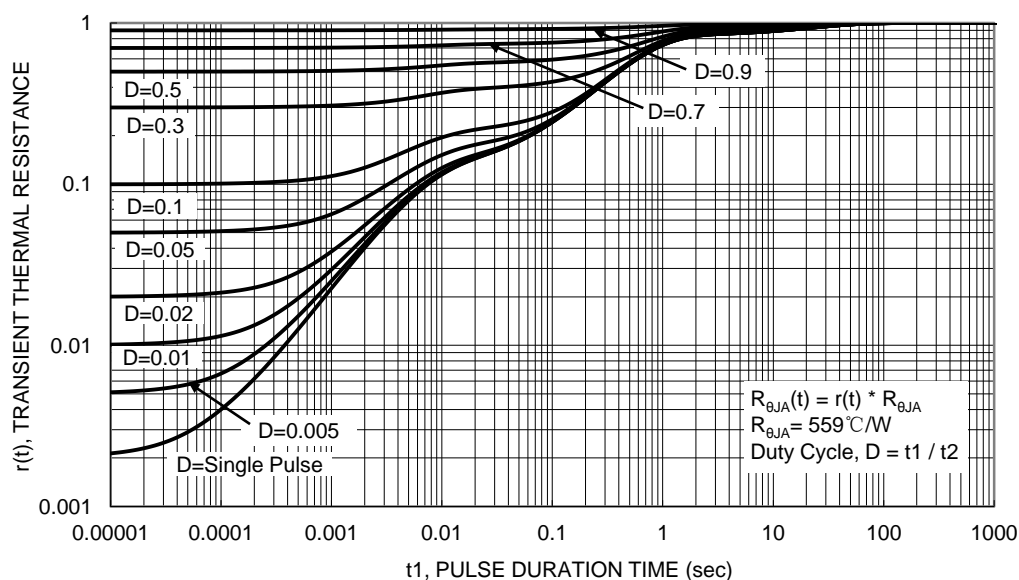


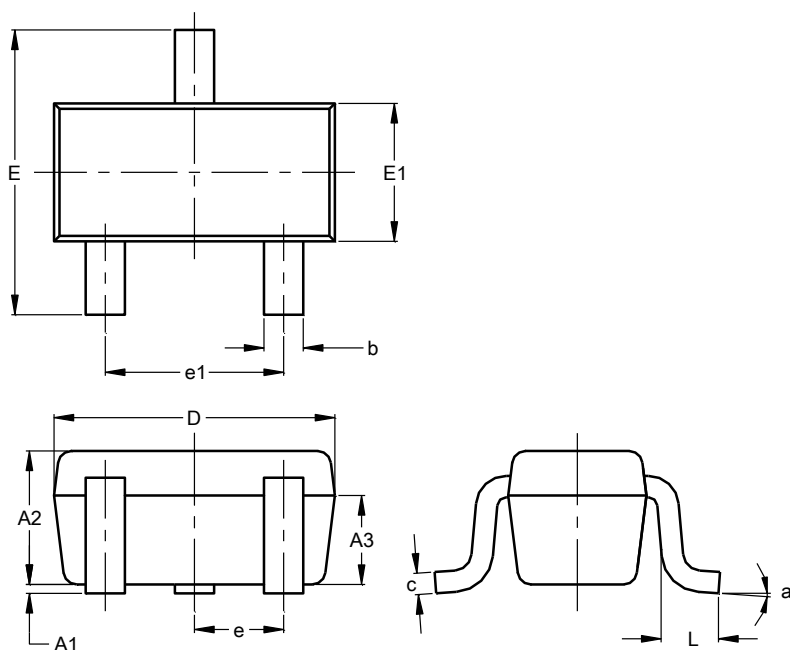
Figure 12. SOA, Safe Operation Area



Package Outline Dimensions

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

SOT523

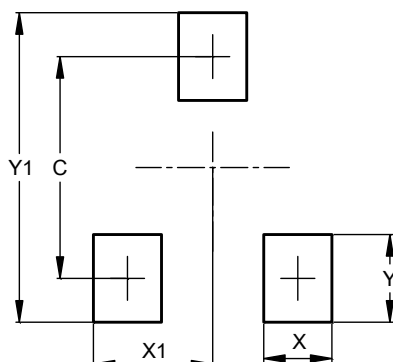


SOT523			
Dim	Min	Max	Typ
A1	0.00	0.10	0.05
A2	0.60	0.80	0.75
A3	0.45	0.65	0.50
b	0.15	0.30	0.22
c	0.10	0.20	0.12
D	1.50	1.70	1.60
E	1.45	1.75	1.60
E1	0.75	0.85	0.80
e	0.50 BSC		
e1	0.90	1.10	1.00
L	0.20	0.40	0.33
a	0°	--	8°
All Dimensions in mm			

Suggested Pad Layout

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

SOT523



Dimensions	Value (in mm)
C	1.29
X	0.40
X1	0.70
Y	0.51
Y1	1.80

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