

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
Continuous Drain Current (Note 6) V _{GS} = -4.5V	Steady State	T _A = +25°C T _A = +70°C	I _D	-4.2 -3.3	A
	t < 10s	T _A = +25°C T _A = +70°C	I _D	-5.0 -4.0	A
Pulsed Drain Current (Note 7)			I _{DM}	-15	A

Thermal Characteristics

Characteristic		Symbol	Value	Unit
Power Dissipation (Note 6)		P _D	1.4	W
Thermal Resistance, Junction to Ambient (Note 6)	Steady State	R _{θJA}	90	°C/W
	t < 10s		64	°C/W
Thermal Resistance, Junction to Case (Note 8)		R _{θJC}	33	°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 8)						
Drain-Source Breakdown Voltage	BV _{DSS}	-20	—	—	V	V _{GS} = 0V, I _D = -250μA
Zero Gate Voltage Drain Current (T _J = +25°C)	I _{DSS}	—	—	-1.0	μA	V _{DS} = -20V, V _{GS} = 0V
Gate-Source Leakage	I _{GSS}	—	—	±100	nA	V _{GS} = ±8V, V _{DS} = 0V
ON CHARACTERISTICS (Note 8)						
Gate Threshold Voltage	V _{GS(TH)}	-0.5	—	-0.9	V	V _{DS} = V _{GS} , I _D = -250μA
Static Drain-Source On-Resistance	R _{DS(ON)}	—	40	52	mΩ	V _{GS} = -4.5V, I _D = -4.2A
			52	100		V _{GS} = -2.5V, I _D = -3.4A
			68	200		V _{GS} = -1.8V, I _D = -2A
Forward Transfer Admittance	Y _{FS}	—	9	—	S	V _{DS} = -5V, I _D = -4A
DYNAMIC CHARACTERISTICS (Note 9)						
Input Capacitance	C _{iss}	—	808	—	pF	V _{DS} = -15V, V _{GS} = 0V f = 1.0MHz
Output Capacitance	C _{oss}	—	85	—	pF	
Reverse Transfer Capacitance	C _{rss}	—	77	—	pF	
Gate Resistance	R _G	—	15.2	—	Ω	V _{GS} = 0V, V _{DS} = 0V, f = 1.0MHz
SWITCHING CHARACTERISTICS (Note 9)						
Total Gate Charge	Q _G	—	10.2	—	nC	V _{GS} = -4.5V, V _{DS} = -4V, I _D = -3.5A
Gate-Source Charge	Q _{GS}	—	1.3	—	nC	
Gate-Drain Charge	Q _{GD}	—	2.2	—	nC	
Turn-On Delay Time	t _{D(ON)}	—	10.8	—	ns	V _{DS} = -4V, V _{GS} = -4.5V, R _G = 6Ω, I _D = -1A
Turn-On Rise Time	t _R	—	13.7	—	ns	
Turn-Off Delay Time	t _{D(OFF)}	—	79.3	—	ns	
Turn-Off Fall Time	t _F	—	34.7	—	ns	

- Notes:
6. Device mounted on FR-4 substrate PC board, 2oz copper, with 1-inch square copper plate.
 7. Repetitive rating, pulse width limited by junction temperature.
 8. Short duration pulse test used to minimize self-heating effect.
 9. Guaranteed by design. Not subject to product testing.

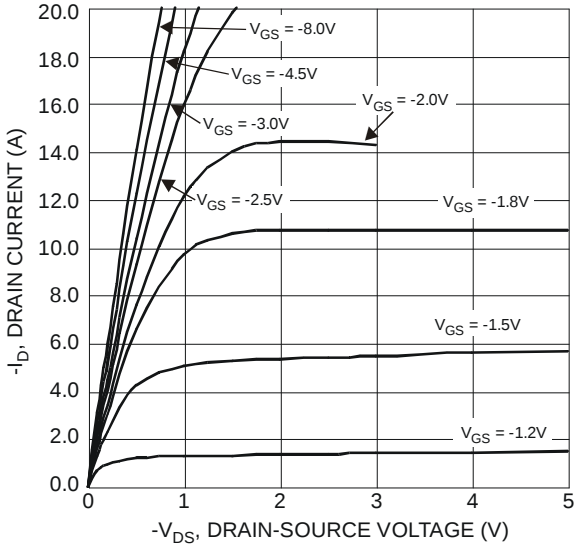


Figure 1 Typical Output Characteristics

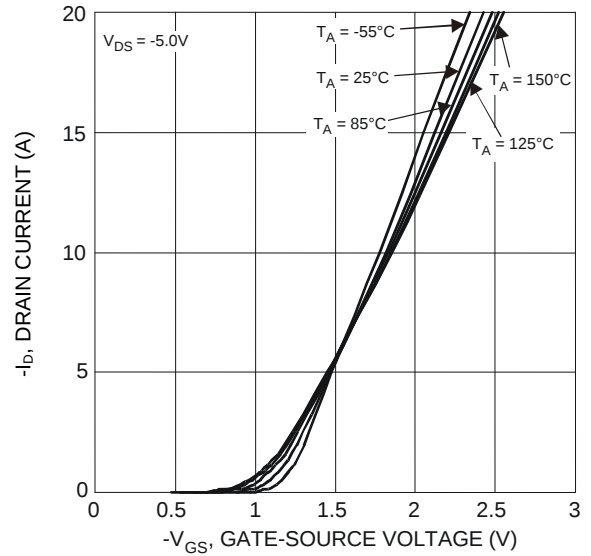


Figure 2 Typical Transfer Characteristics

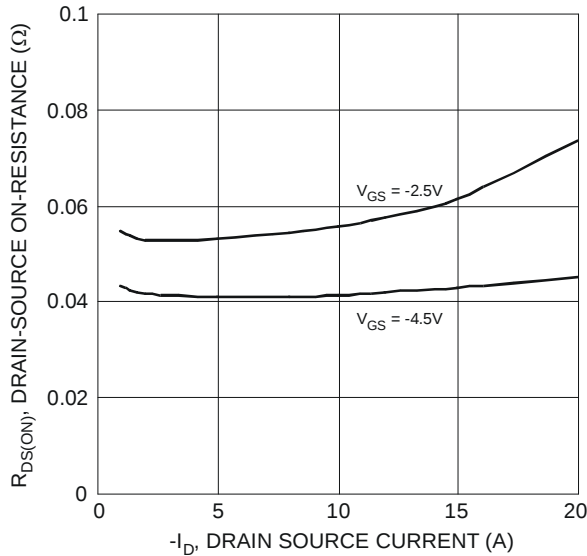


Figure 3 Typical On-Resistance vs. Drain Current and Gate Voltage

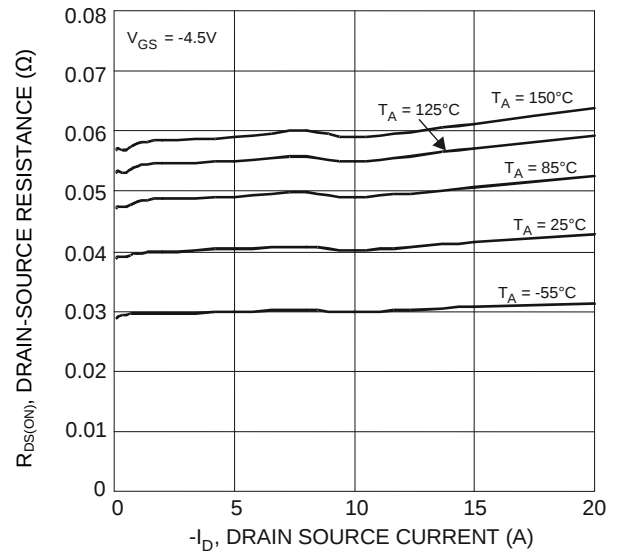


Figure 4 Typical On-Resistance vs. Drain Current and Temperature

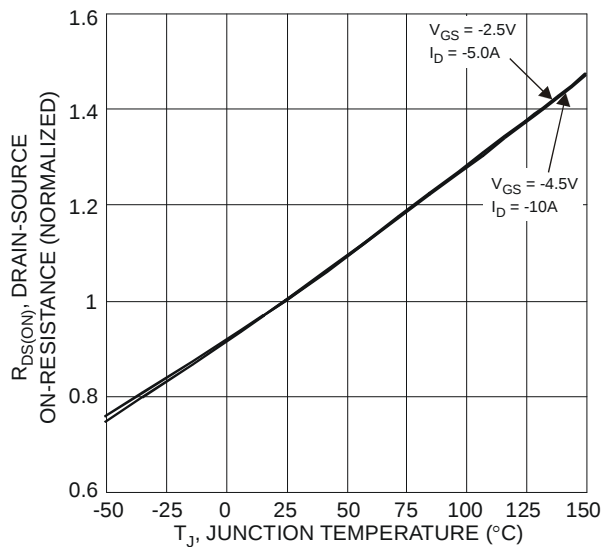


Figure 5 On-Resistance Variation with Temperature

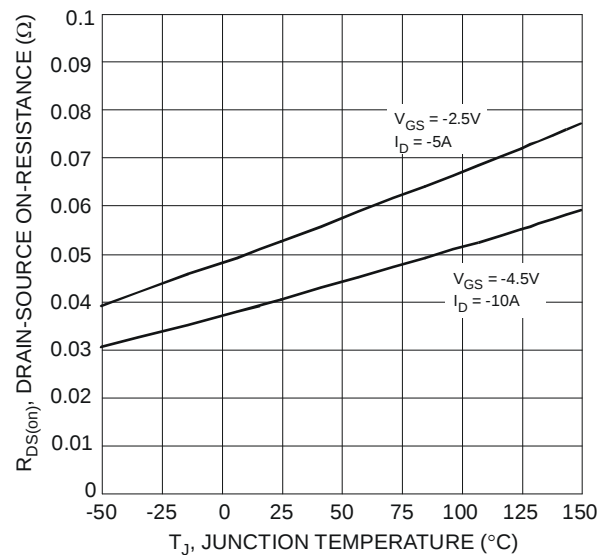


Figure 6 On-Resistance Variation with Temperature

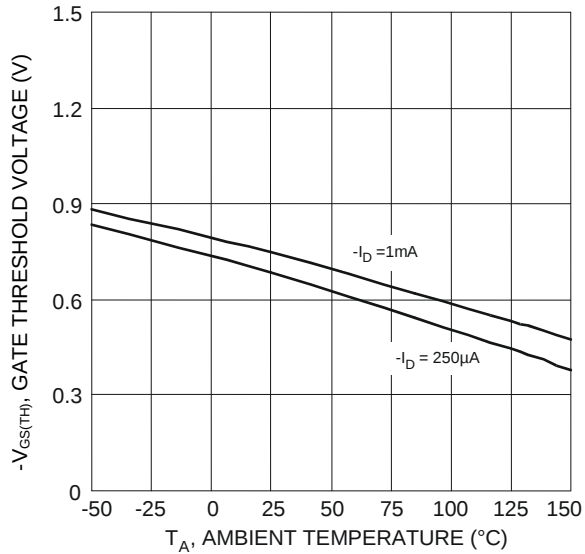


Figure 7 Gate Threshold Variation vs. Ambient Temperature

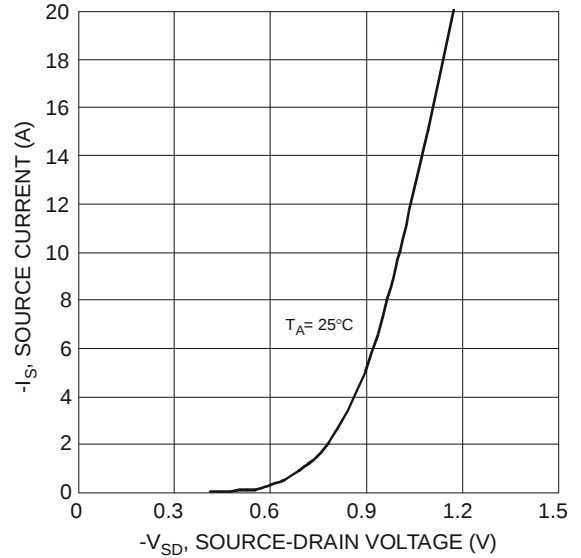


Figure 8 Diode Forward Voltage vs. Current

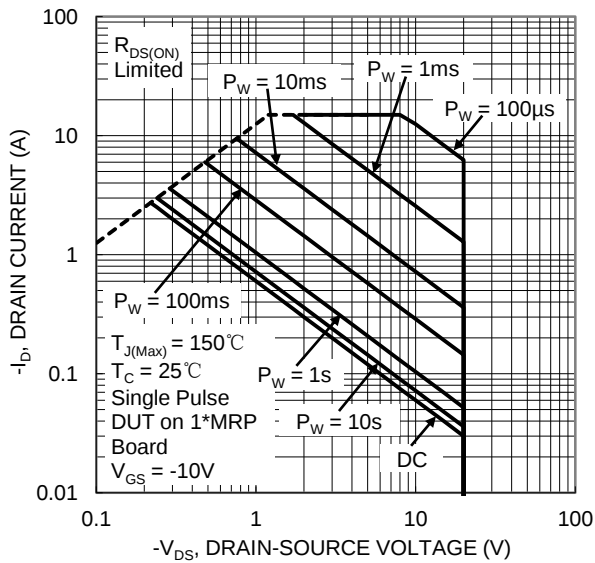
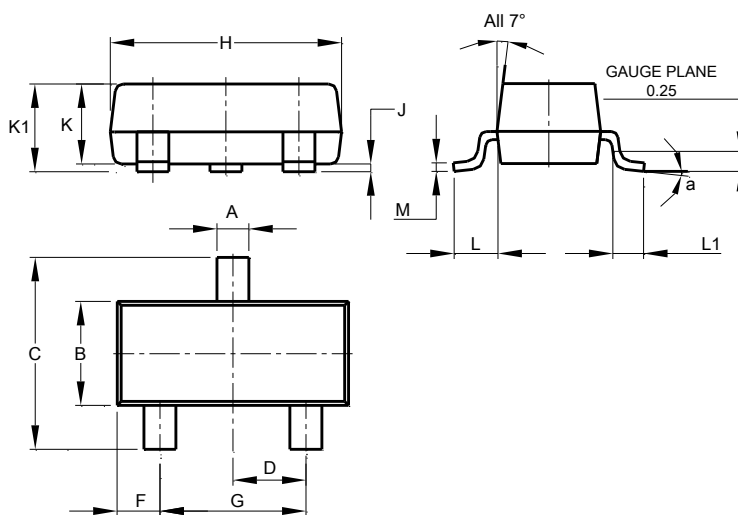


Figure 9 SOA, Safe Operation Area

Package Outline Dimensions

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

SOT23

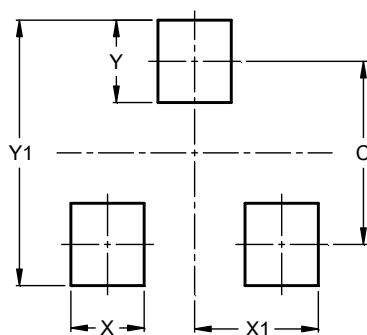


SOT23			
Dim	Min	Max	Typ
A	0.37	0.51	0.40
B	1.20	1.40	1.30
C	2.30	2.50	2.40
D	0.89	1.03	0.915
F	0.45	0.60	0.535
G	1.78	2.05	1.83
H	2.80	3.00	2.90
J	0.013	0.10	0.05
K	0.890	1.00	0.975
K1	0.903	1.10	1.025
L	0.45	0.61	0.55
L1	0.25	0.55	0.40
M	0.085	0.150	0.110
a	0°	8°	--
All Dimensions in mm			

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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