



New Product

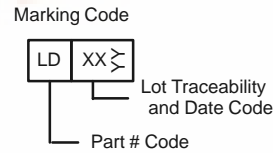
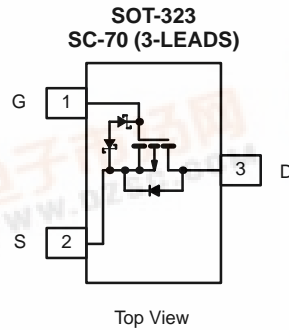
Si1303EDL
Vishay Siliconix

P-Channel 2.5-V (G-S) MOSFET

PRODUCT SUMMARY		
V _{DS} (V)	r _{DS(on)} (Ω)	I _D (A)
-20	0.430 @ V _{GS} = -4.5 V	±0.72
	0.480 @ V _{GS} = -3.6 V	±0.68
	0.700 @ V _{GS} = -2.5 V	±0.56



ESD Protected
3000 V



ABSOLUTE MAXIMUM RATINGS (T _A = 25°C UNLESS OTHERWISE NOTED)				
Parameter	Symbol	5 secs	Steady State	Unit
Drain-Source Voltage	V _{DS}	-20		V
Gate-Source Voltage	V _{GS}	±12		
Continuous Drain Current (T _J = 150°C) ^a	I _D	T _A = 25°C	±0.72	±0.67
		T _A = 70°C	±0.58	±0.54
Pulsed Drain Current	I _{DM}	±2.5		A
Continuous Diode Current (Diode Conduction) ^a	I _S	-0.28	-0.24	
Maximum Power Dissipation ^a	P _D	T _A = 25°C	0.34	0.29
		T _A = 70°C	0.22	0.19
Operating Junction and Storage Temperature Range	T _J , T _{stg}	-55 to 150		°C

THERMAL RESISTANCE RATINGS				
Parameter	Symbol	Typical	Maximum	Unit
Maximum Junction-to-Ambient ^a	R _{thJA}	t ≤ 5 sec	315	375
		Steady State	360	430
Maximum Junction-to-Foot (Drain)	R _{thJF}	285	340	°C/W

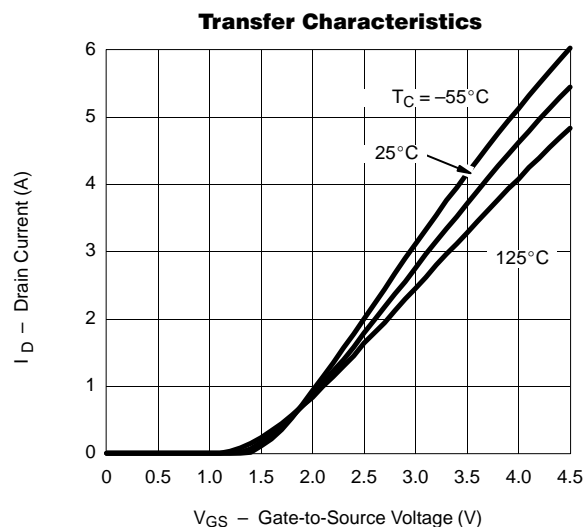
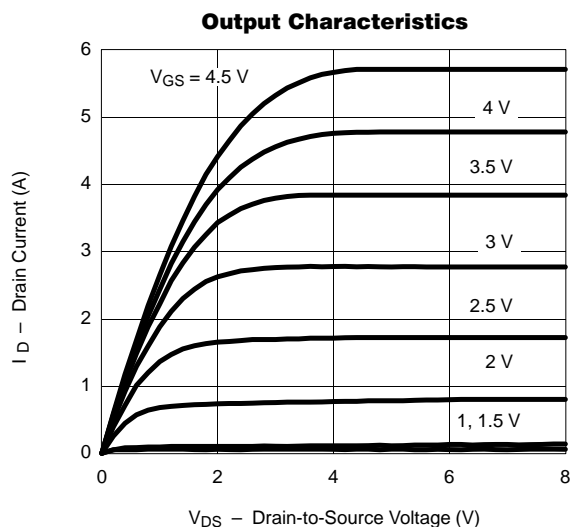
Notes:
a. Surface Mounted on 1" x 1" FR4 Board.

**SPECIFICATIONS (T_J = 25 °C UNLESS OTHERWISE NOTED)**

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Static						
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = -250 μA	-0.6			V
Gate-Body Leakage	I _{GSS}	V _{DS} = 0 V, V _{GS} = ±4.5 V			±1	μA
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = -20 V, V _{GS} = 0 V			-1	μA
		V _{DS} = -20 V, V _{GS} = 0 V, T _J = 70 °C			-5	
On-State Drain Current ^a	I _{D(on)}	V _{DS} = -5 V, V _{GS} = -4.5 V	-2.5			A
Drain-Source On-State Resistance ^a	r _{DS(on)}	V _{GS} = -4.5 V, I _D = -1 A		0.360	0.430	Ω
		V _{GS} = -3.6 V, I _D = -0.7 A		0.400	0.480	
		V _{GS} = -2.5 V, I _D = -0.3 A		0.560	0.700	
Forward Transconductance ^a	g _{fs}	V _{DS} = -10 V, I _D = -1 A		1.7		S
Diode Forward Voltage ^a	V _{SD}	I _S = -1 A, V _{GS} = 0 V			-1.2	V
Dynamic^b						
Total Gate Charge	Q _g	V _{DS} = -10 V, V _{GS} = -4.5 V, I _D = -1 A		1.9	2.5	nC
Gate-Source Charge	Q _{gs}			0.45		
Gate-Drain Charge	Q _{gd}			0.44		
Turn-On Delay Time	t _{d(on)}	V _{DD} = -10 V, R _L = 10 Ω I _D ≅ -1 A, V _{GEN} = -4.5 V, R _G = 6 Ω		180	300	ns
Rise Time	t _r			410	655	
Turn-Off Delay Time	t _{d(off)}			560	900	
Fall Time	t _f			530	850	
Source-Drain Reverse Recovery Time	t _{rr}		I _F = -1 A, di/dt = 100 A/μs		435	

Notes

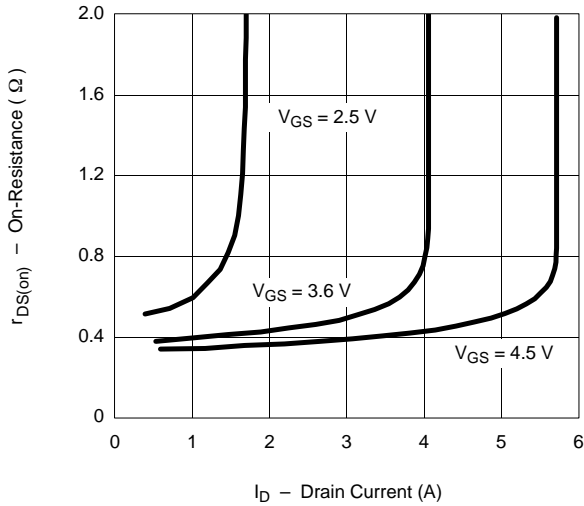
- a. Pulse test; pulse width ≤ 300 μs, duty cycle ≤ 2%.
b. Guaranteed by design, not subject to production testing.

TYPICAL CHARACTERISTICS (25 °C UNLESS NOTED)

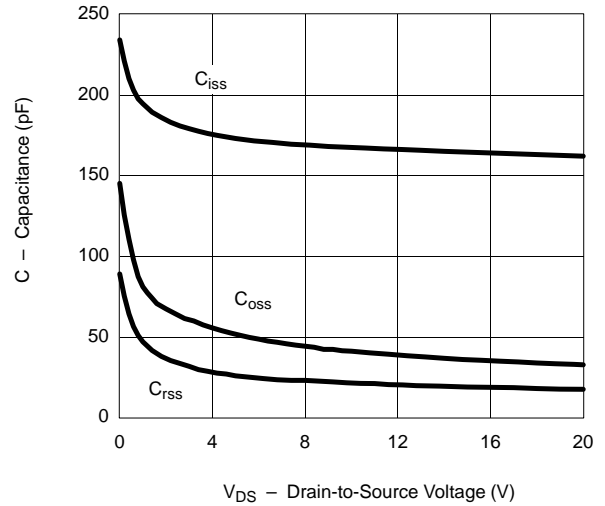


TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)

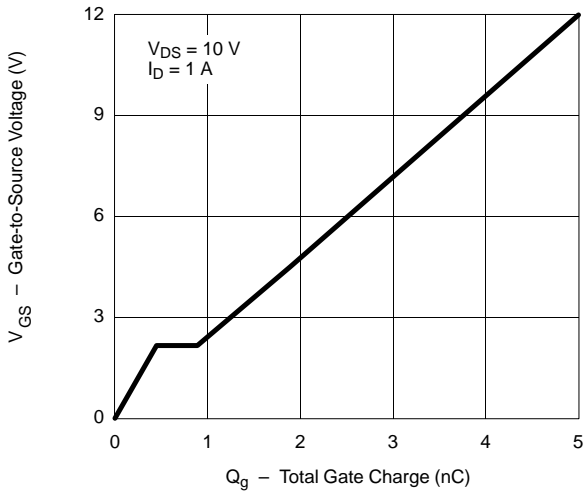
On-Resistance vs. Drain Current



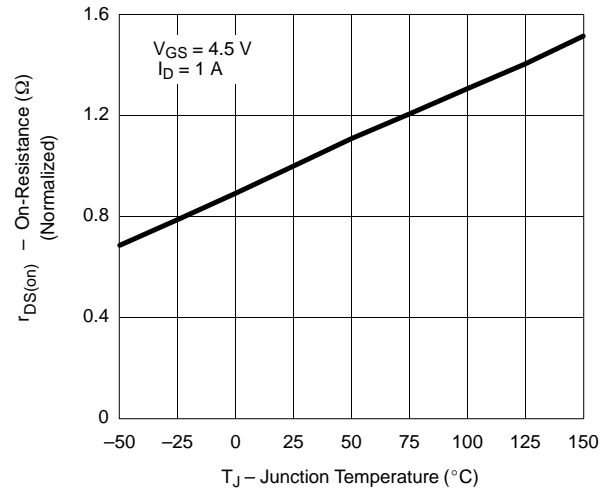
Capacitance



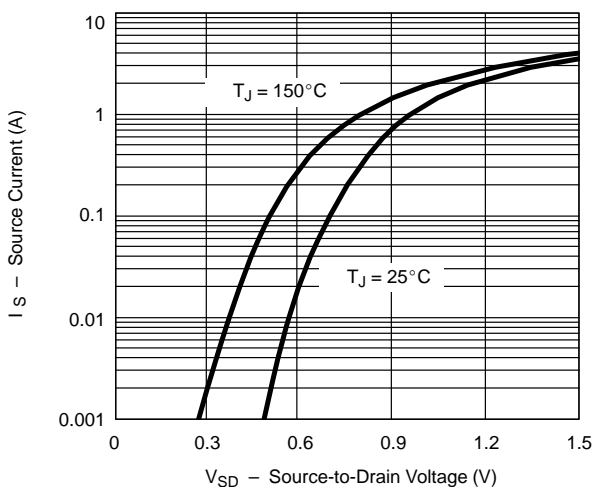
Gate Charge



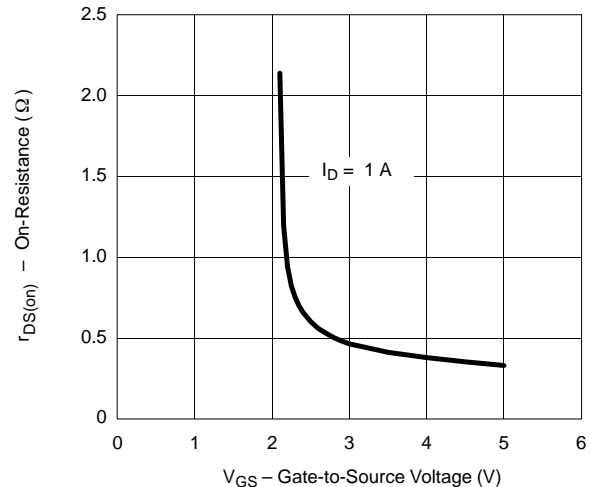
On-Resistance vs. Junction Temperature



Source-Drain Diode Forward Voltage

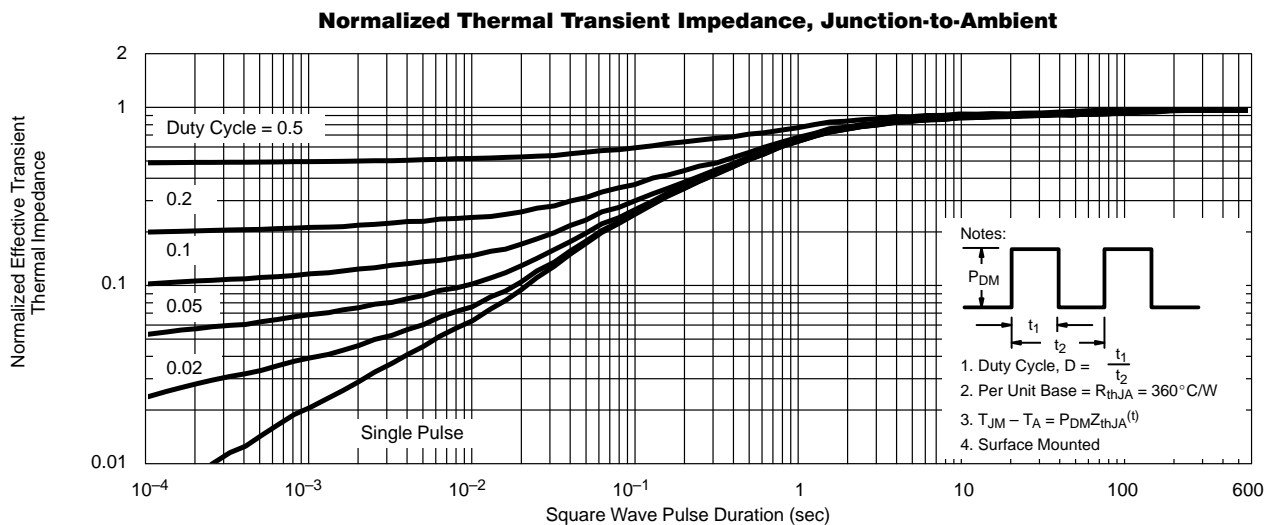
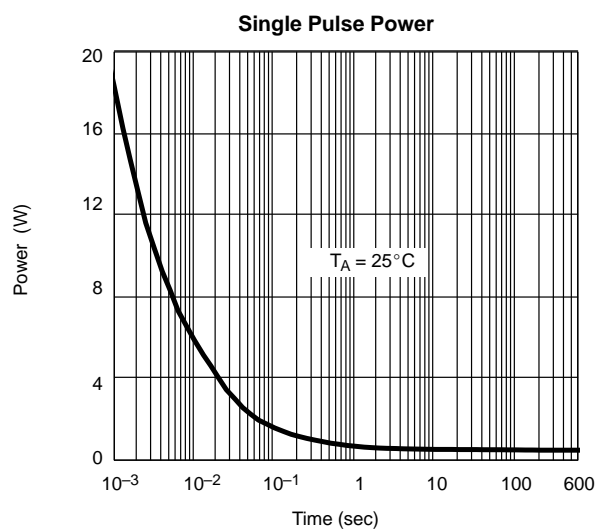
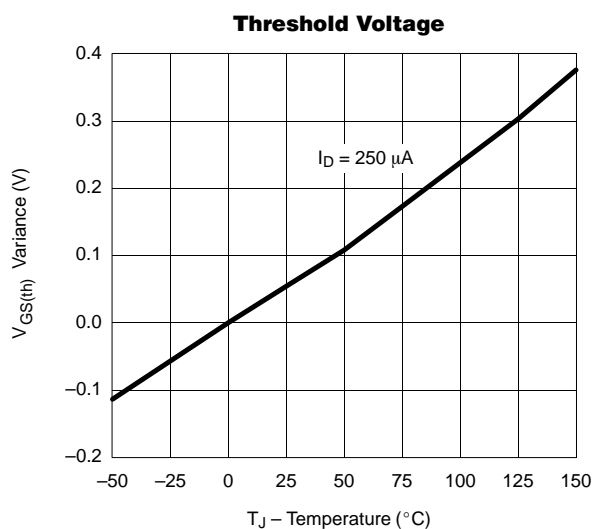
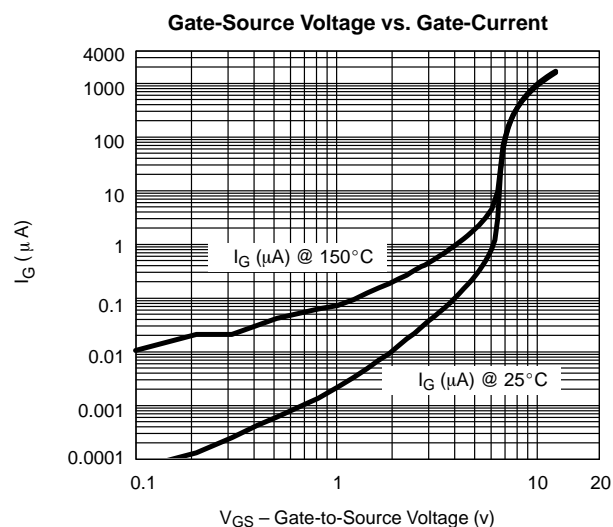
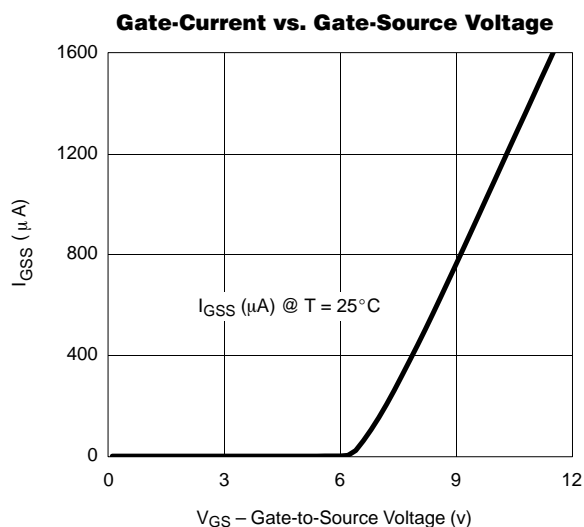


On-Resistance vs. Gate-to-Source Voltage





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