



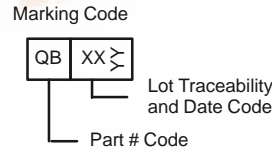
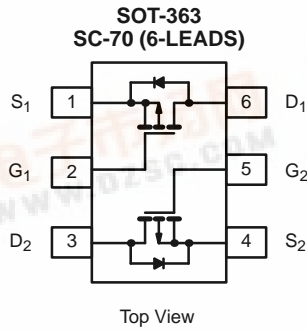
New Product

Si1905DL
Vishay Siliconix

Dual P-Channel 1.8-V (G-S) MOSFET

TrenchFET®
Power MOSFETs
1.8-V Rated

PRODUCT SUMMARY		
V _{DS} (V)	r _{DS(on)} (Ω)	I _D (A)
-8	0.600 @ V _{GS} = -4.5 V	±0.60
	0.850 @ V _{GS} = -2.5 V	±0.50
	1.200 @ V _{GS} = -1.8 V	±0.42



ABSOLUTE MAXIMUM RATINGS (T _A = 25°C UNLESS OTHERWISE NOTED)					
Parameter	Symbol	5 secs	Steady State	Unit	
Drain-Source Voltage	V _{DS}	-8		V	
Gate-Source Voltage	V _{GS}	±8			
Continuous Drain Current (T _J = 150°C) ^a	I _D	T _A = 25°C	±0.60	±0.57	A
		T _A = 85°C	±0.43	±0.41	
Pulsed Drain Current	I _{DM}	±1.0			
Continuous Diode Current (Diode Conduction) ^a	I _S	-0.25	-0.23		
Maximum Power Dissipation ^a	P _D	T _A = 25°C	0.30	0.27	W
		T _A = 85°C	0.16	0.14	
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	360	415	°C/W
		Steady State	400	460	
Maximum Junction-to-Foot (Drain)	R _{thJF}	300	350		

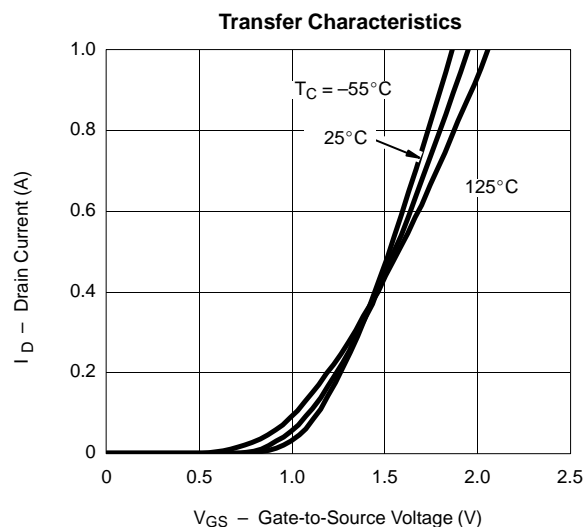
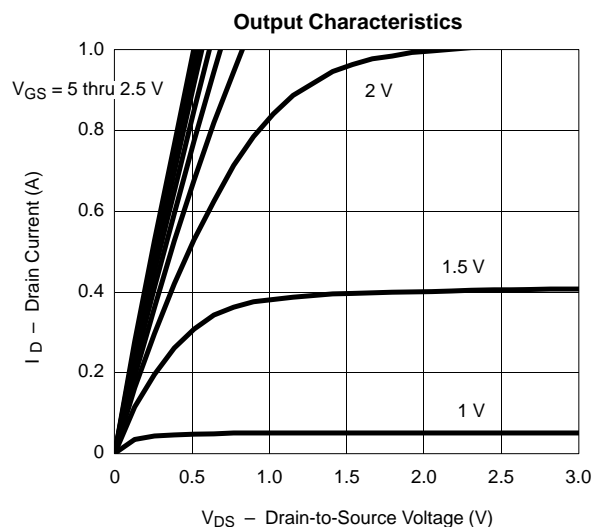
Notes:
a. Surface Mounted on 1" x 1" FR4 Board.


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	-0.45			V
Gate-Body Leakage	I _{GSS}	V _{DS} = 0 V, V _{GS} = ±8 V			±100	nA
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = -6.4 V, V _{GS} = 0 V			-1	μA
		V _{DS} = -6.4 V, V _{GS} = 0 V, T _J = 85 °C			-5	
On-State Drain Current ^a	I _{D(on)}	V _{DS} = -5 V, V _{GS} = -4.5 V	-1.0			A
Drain-Source On-State Resistance ^a	r _{DS(on)}	V _{GS} = -4.5 V, I _D = -0.57 A		0.51	0.600	Ω
		V _{GS} = -2.5 V, I _D = -0.48 A		0.720	0.850	
		V _{GS} = -1.8 V, I _D = -0.20 A		1.0	1.200	
Forward Transconductance ^a	g _{fs}	V _{DS} = -10 V, I _D = -0.57 A		1.2		S
Diode Forward Voltage ^a	V _{SD}	I _S = -0.23 A, V _{GS} = 0 V		-0.8	-1.2	V
Dynamic^b						
Total Gate Charge	Q _g	V _{DS} = -4 V, V _{GS} = -4.5 V, I _D = -0.57 A		1.5	2.3	nC
Gate-Source Charge	Q _{gs}			0.17		
Gate-Drain Charge	Q _{gd}			0.16		
Turn-On Delay Time	t _{d(on)}	V _{DD} = -4 V, R _L = 8 Ω I _D ≅ -0.5 A, V _{GEN} = -4.5 V, R _G = 6 Ω		6	12	ns
Rise Time	t _r			25	50	
Turn-Off Delay Time	t _{d(off)}			10	20	
Fall Time	t _f			10	20	
Source-Drain Reverse Recovery Time	t _{rr}		I _F = -0.23 A, di/dt = 100 A/μs		20	

Notes

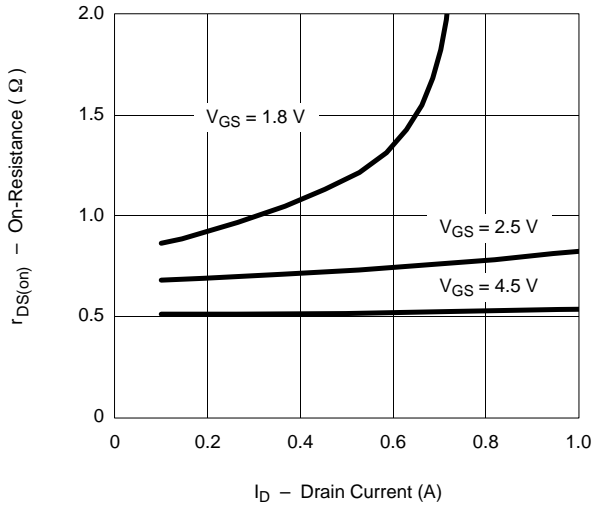
- a. Pulse test; pulse width ≤ 300 μs, duty cycle ≤ 2%.
 b. Guaranteed by design, not subject to production testing.

TYPICAL CHARACTERISTICS (25 °C UNLESS NOTED)


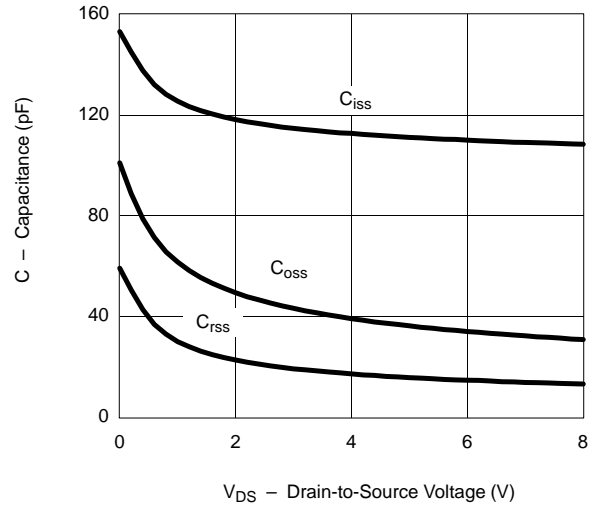


TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)

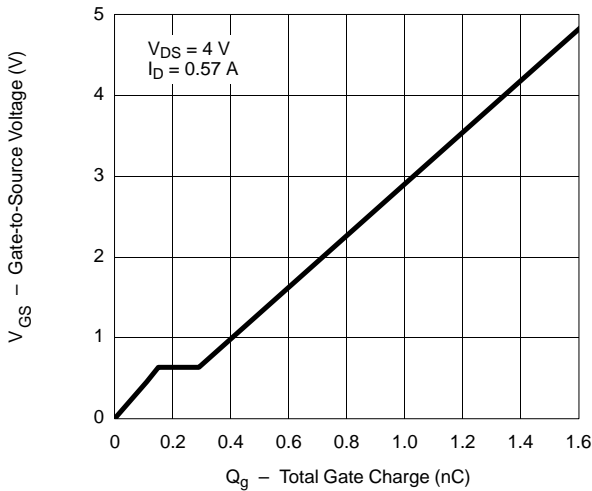
On-Resistance vs. Drain Current



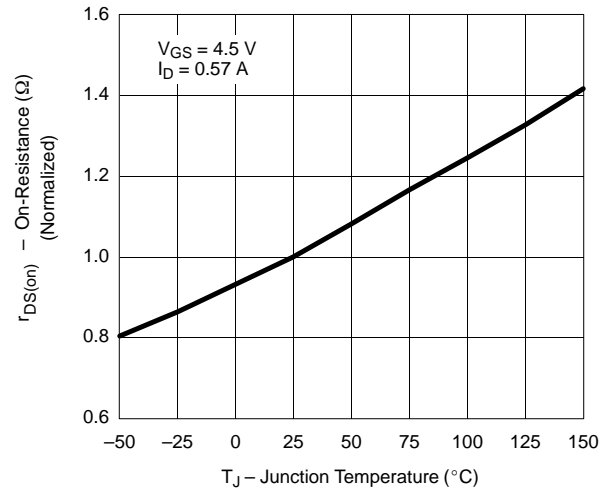
Capacitance



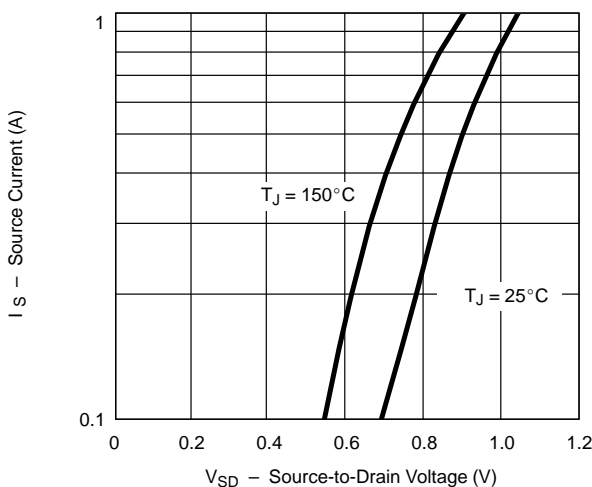
Gate Charge



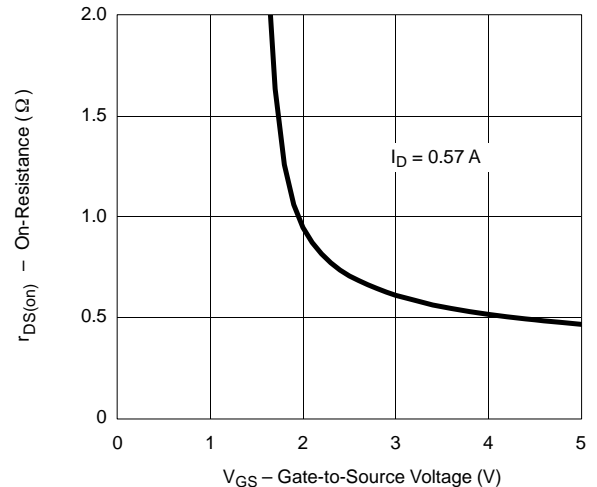
On-Resistance vs. Junction Temperature



Source-Drain Diode Forward Voltage



On-Resistance vs. Gate-to-Source Voltage





TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)

