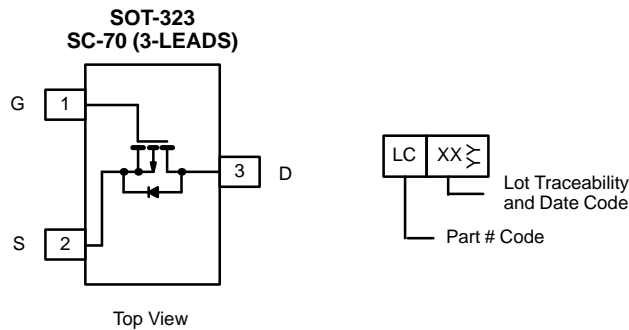




P-Channel 1.8-V (G-S) MOSFET

TrenchFET[®]
Power MOSFETs
1.8-V Rated

PRODUCT SUMMARY		
V _{DS} (V)	r _{DS(on)} (Ω)	I _D (A)
-12	0.290 @ V _{GS} = -4.5 V	±0.91
	0.435 @ V _{GS} = -2.5 V	±0.74
	0.580 @ V _{GS} = -1.8 V	±0.64



ABSOLUTE MAXIMUM RATINGS (T _A = 25°C UNLESS OTHERWISE NOTED)					
Parameter		Symbol	5 secs	Steady State	Unit
Drain-Source Voltage		V _{DS}	-12		V
Gate-Source Voltage		V _{GS}	±8		
Continuous Drain Current (T _J = 150°C) ^a	T _A = 25°C	I _D	±0.91	±0.85	A
	T _A = 70°C		±0.72	±0.68	
Pulsed Drain Current		I _{DM}	±3		
Continuous Diode Current (Diode Conduction) ^a		I _S	-0.28	-0.24	
Maximum Power Dissipation ^a	T _A = 25°C	P _D	0.34	0.29	W
	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	t ≤ 5 sec	R _{thJA}	315	375	°C/W
	Steady State		360	430	
Maximum Junction-to-Foot (Drain)	Steady State	R _{thJF}	285	340	

Notes

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

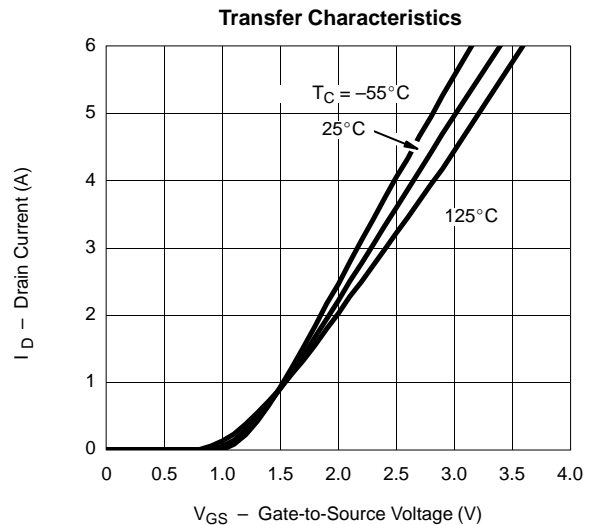
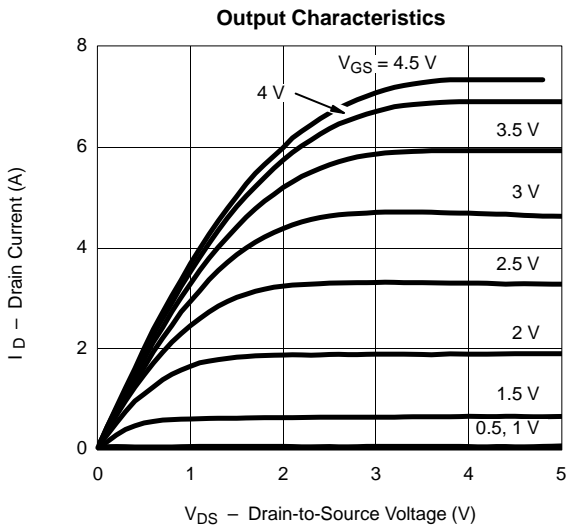


SPECIFICATIONS (T _J = 25 °C UNLESS OTHERWISE NOTED)						
Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Static						
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = -250 μA	-0.45			V
Gate-Body Leakage	I _{GSS}	V _{DS} = 0 V, V _{GS} = ±8 V			±100	nA
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = -9.6 V, V _{GS} = 0 V			-1	μA
		V _{DS} = -9.6 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	-3			A
Drain-Source On-State Resistance ^a	r _{DS(on)}	V _{GS} = -4.5 V, I _D = -1 A		0.240	0.290	Ω
		V _{GS} = -2.5 V, I _D = -0.5 A		0.350	0.435	
		V _{GS} = -1.8 V, I _D = -0.3 A		0.480	0.580	
Forward Transconductance ^a	g _{fs}	V _{DS} = -5 V, I _D = -1 A		3.5		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} = -6 V, V _{GS} = -4.5 V, I _D = -1 A		3.2	5	nC
Gate-Source Charge	Q _{gs}			0.59		
Gate-Drain Charge	Q _{gd}			0.56		
Turn-On Delay Time	t _{d(on)}	V _{DD} = -6 V, R _L = 4 Ω I _D ≅ -1 A, V _{GEN} = -4.5 V, R _G = 6 Ω		7.5	12	ns
Rise Time	t _r			32	45	
Turn-Off Delay Time	t _{d(off)}			17	25	
Fall Time	t _f			11.5	20	
Source-Drain Reverse Recovery Time	t _{rr}	I _F = -1 A, di/dt = 100 A/μs		32	52	

Notes

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

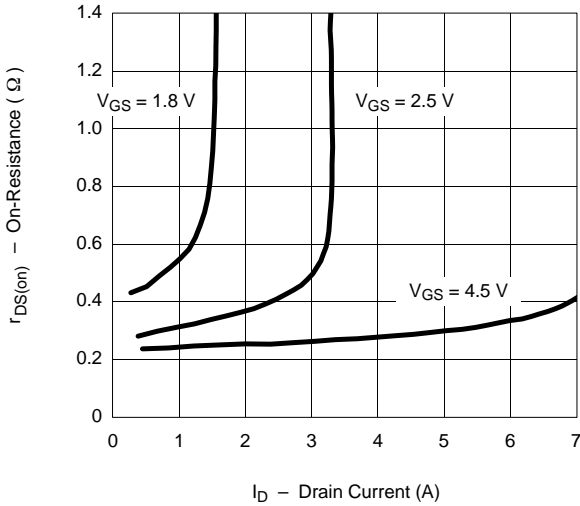
TYPICAL CHARACTERISTICS (25 °C UNLESS NOTED)



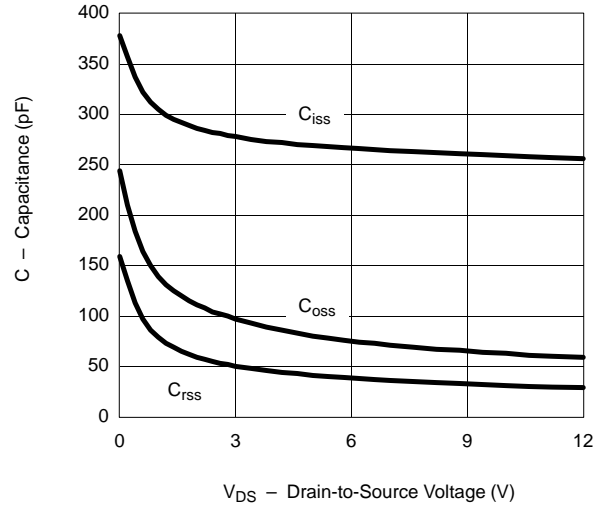


TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)

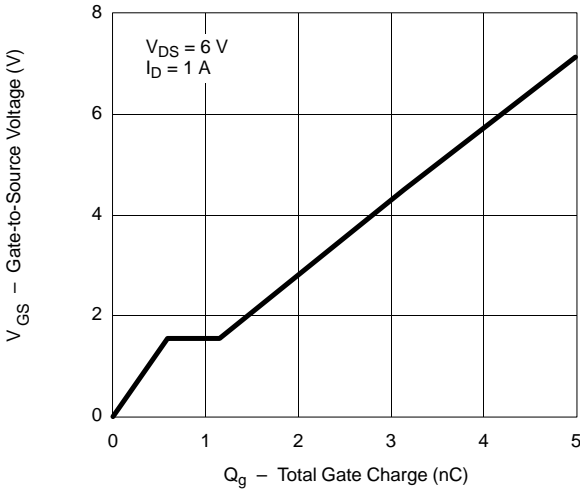
On-Resistance vs. Drain Current



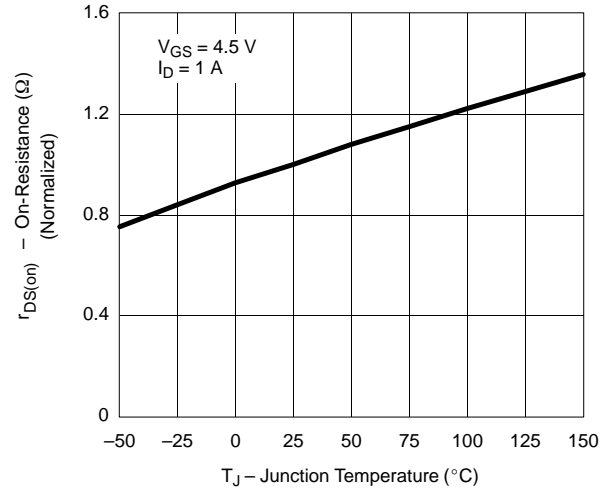
Capacitance



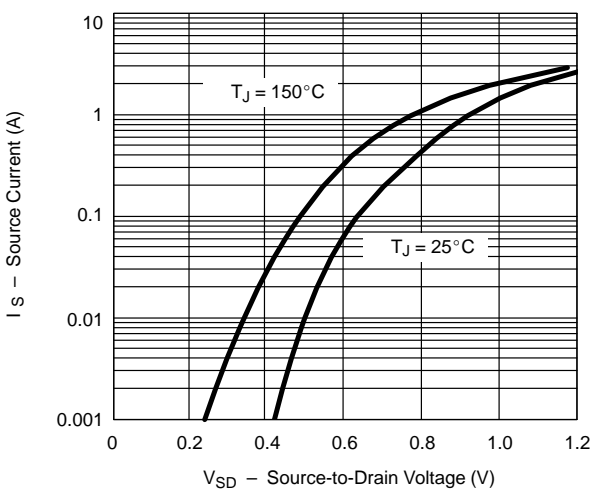
Gate Charge



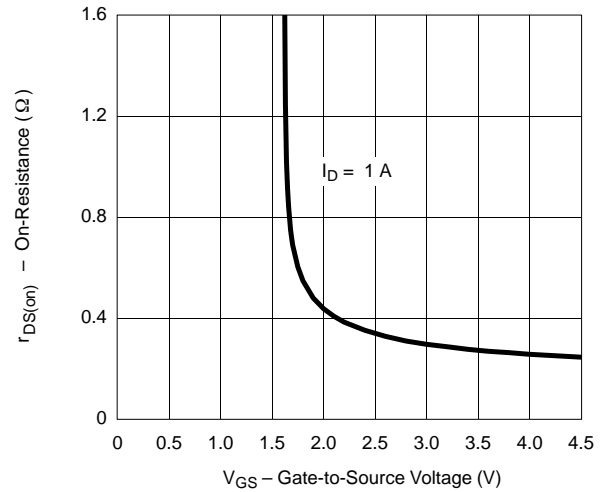
On-Resistance vs. Junction Temperature



Source-Drain Diode Forward Voltage



On-Resistance vs. Gate-to-Source Voltage





TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)

