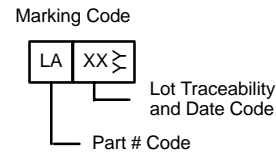
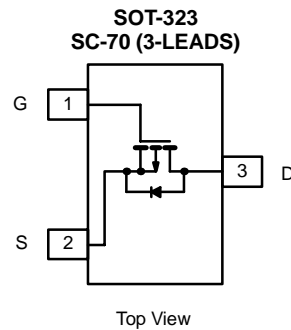




## P-Channel 2.5-V (G-S) MOSFET

**TrenchFET®**  
Power MOSFETs  
2.5-V Rated

PRODUCT SUMMARY		
V <sub>DS</sub> (V)	r <sub>DS(on)</sub> (Ω)	I <sub>D</sub> (A)
-20	0.430 @ V <sub>GS</sub> = -4.5 V	-0.72
	0.480 @ V <sub>GS</sub> = -3.6 V	-0.68
	0.700 @ V <sub>GS</sub> = -2.5 V	-0.56



ABSOLUTE MAXIMUM RATINGS (T <sub>A</sub> = 25 °C UNLESS OTHERWISE NOTED)					
Parameter	Symbol	5 secs	Steady State	Unit	
Drain-Source Voltage	V <sub>DS</sub>	-20		V	
Gate-Source Voltage	V <sub>GS</sub>	± 12			
Continuous Drain Current (T <sub>J</sub> = 150 °C) <sup>a</sup>	T <sub>A</sub> = 25 °C	I <sub>D</sub>	-0.72	-0.67	A
	T <sub>A</sub> = 70 °C		-0.58	-0.54	
Pulsed Drain Current	I <sub>DM</sub>	-2.5			
Continuous Diode Current (Diode Conduction) <sup>a</sup>	I <sub>S</sub>	-0.28	-0.24		
Maximum Power Dissipation <sup>a</sup>	T <sub>A</sub> = 25 °C	P <sub>D</sub>	0.34	0.29	W
	T <sub>A</sub> = 70 °C		0.22	0.19	
Operating Junction and Storage Temperature Range	T <sub>J</sub> , T <sub>stg</sub>	-55 to 150		°C	

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

Notes

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

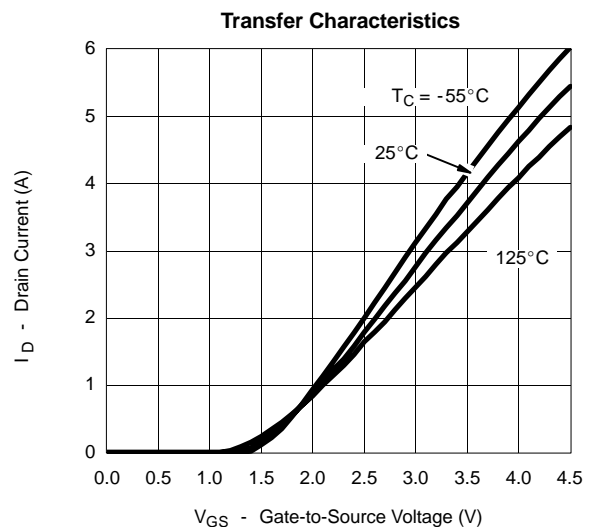
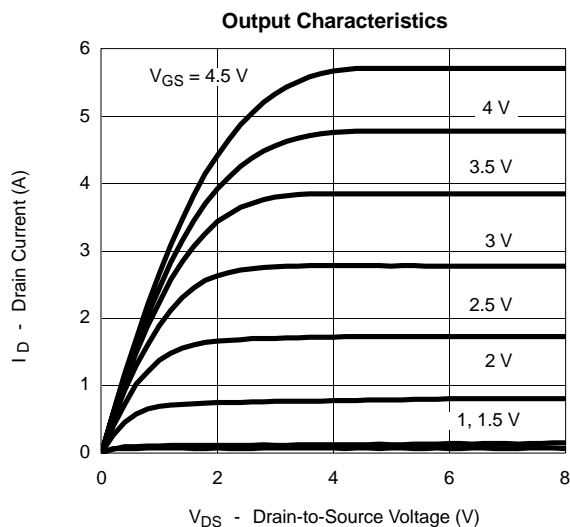


SPECIFICATIONS (T <sub>J</sub> = 25 °C UNLESS OTHERWISE NOTED)						
Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
<b>Static</b>						
Gate Threshold Voltage	V <sub>GS(th)</sub>	V <sub>DS</sub> = V <sub>GS</sub> , I <sub>D</sub> = -250 μA	-0.6			V
Gate-Body Leakage	I <sub>GSS</sub>	V <sub>DS</sub> = 0 V, V <sub>GS</sub> = ±12 V			±100	nA
Zero Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> = -20 V, V <sub>GS</sub> = 0 V			-1	μA
		V <sub>DS</sub> = -20 V, V <sub>GS</sub> = 0 V, T <sub>J</sub> = 70 °C			-5	
On-State Drain Current <sup>a</sup>	I <sub>D(on)</sub>	V <sub>DS</sub> = -5 V, V <sub>GS</sub> = -4.5 V	-2.5			A
Drain-Source On-State Resistance <sup>a</sup>	r <sub>DS(on)</sub>	V <sub>GS</sub> = -4.5 V, I <sub>D</sub> = -1 A		0.360	0.430	Ω
		V <sub>GS</sub> = -3.6 V, I <sub>D</sub> = -0.7 A		0.400	0.480	
		V <sub>GS</sub> = -2.5 V, I <sub>D</sub> = -0.3 A		0.560	0.700	
Forward Transconductance <sup>a</sup>	g <sub>fs</sub>	V <sub>DS</sub> = -10 V, I <sub>D</sub> = -1 A		1.7		S
Diode Forward Voltage <sup>a</sup>	V <sub>SD</sub>	I <sub>S</sub> = -0.3 A, V <sub>GS</sub> = 0 V			-1.2	V
<b>Dynamic<sup>b</sup></b>						
Total Gate Charge	Q <sub>g</sub>	V <sub>DS</sub> = -10 V, V <sub>GS</sub> = -4.5 V, I <sub>D</sub> = -1 A		1.7	2.2	nC
Gate-Source Charge	Q <sub>gs</sub>			0.38		
Gate-Drain Charge	Q <sub>gd</sub>			0.63		
Turn-On Delay Time	t <sub>d(on)</sub>	V <sub>DD</sub> = -10 V, R <sub>L</sub> = 10 Ω I <sub>D</sub> ≅ -1 A, V <sub>GEN</sub> = -4.5 V, R <sub>G</sub> = 6 Ω		9	15	ns
Rise Time	t <sub>r</sub>			31	45	
Turn-Off Delay Time	t <sub>d(off)</sub>			12.5	20	
Fall Time	t <sub>f</sub>			14	20	
Source-Drain Reverse Recovery Time	t <sub>rr</sub>	I <sub>F</sub> = -1 A, di/dt = 100 A/μs		35	55	

Notes

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

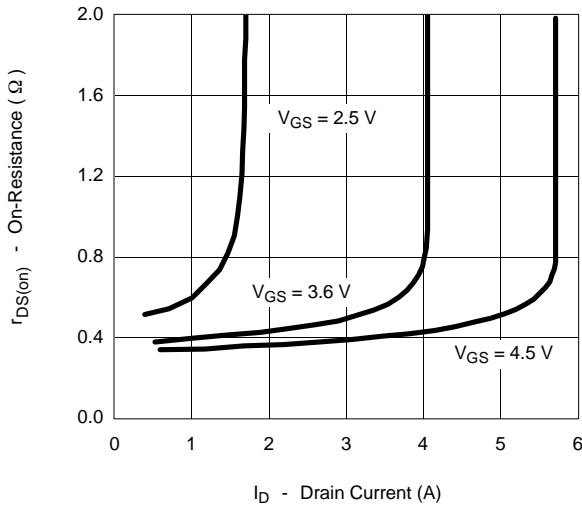
**TYPICAL CHARACTERISTICS (25 °C UNLESS NOTED)**



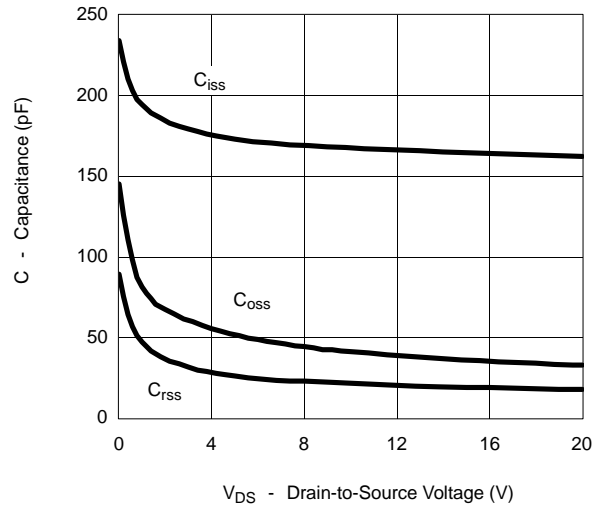


**TYPICAL CHARACTERISTICS (25 °C UNLESS NOTED)**

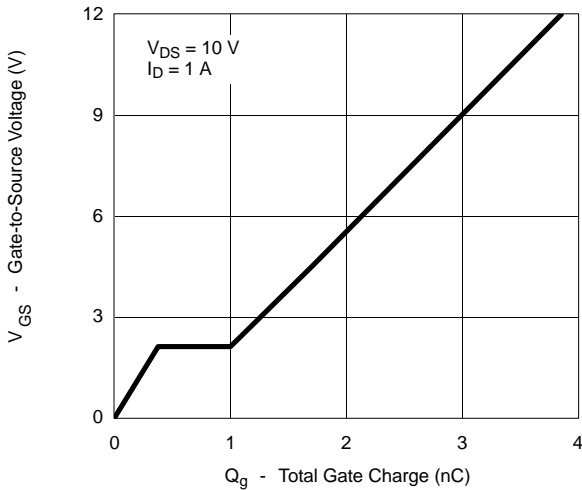
**On-Resistance vs. Drain Current**



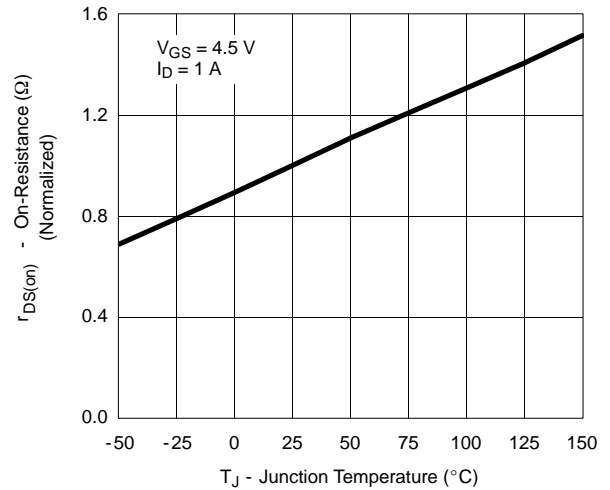
**Capacitance**



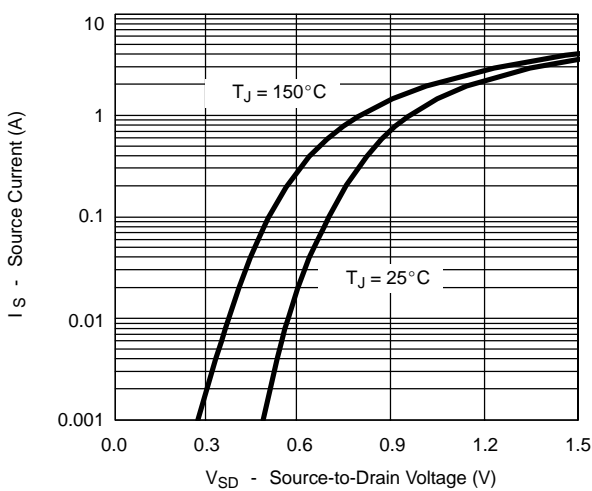
**Gate Charge**



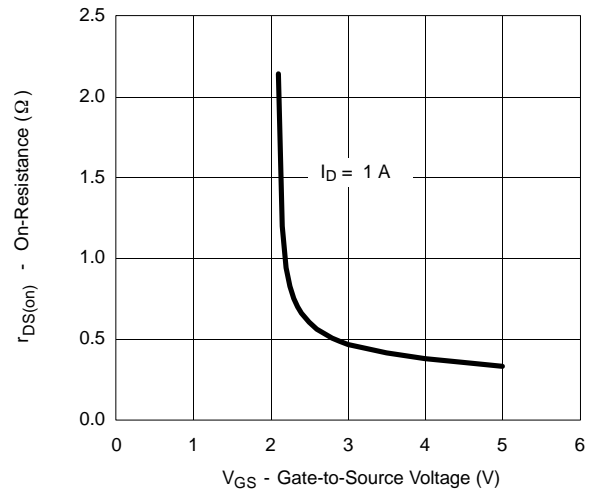
**On-Resistance vs. Junction Temperature**



**Source-Drain Diode Forward Voltage**



**On-Resistance vs. Gate-to-Source Voltage**



**TYPICAL CHARACTERISTICS (25 °C UNLESS NOTED)**

