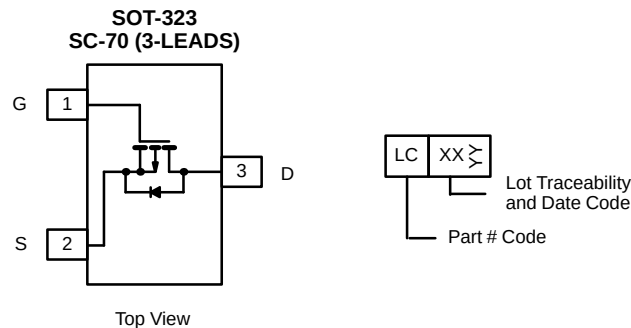




P-Channel 1.8-V (G-S) MOSFET

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	$t \leq 5$ sec	R_{thJA}	315	375	$^\circ\text{C/W}$
	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.

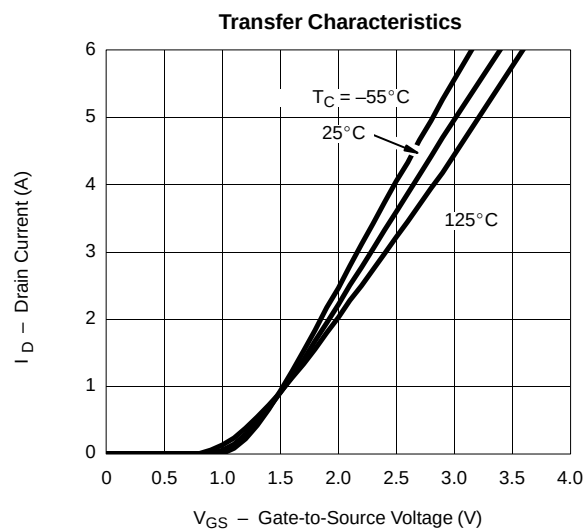
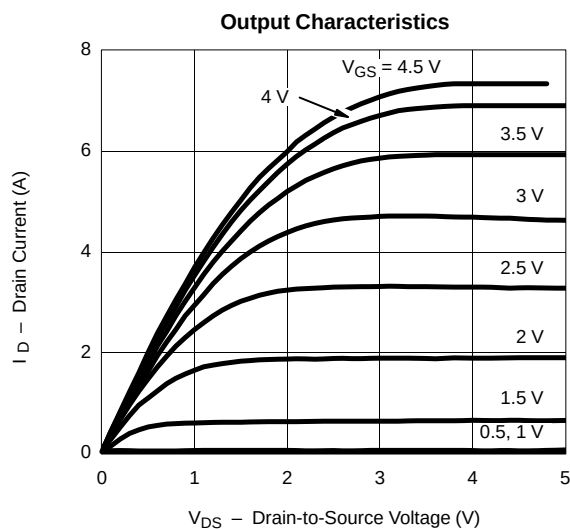
SPECIFICATIONS ($T_J = 25^\circ\text{C}$ UNLESS OTHERWISE NOTED)

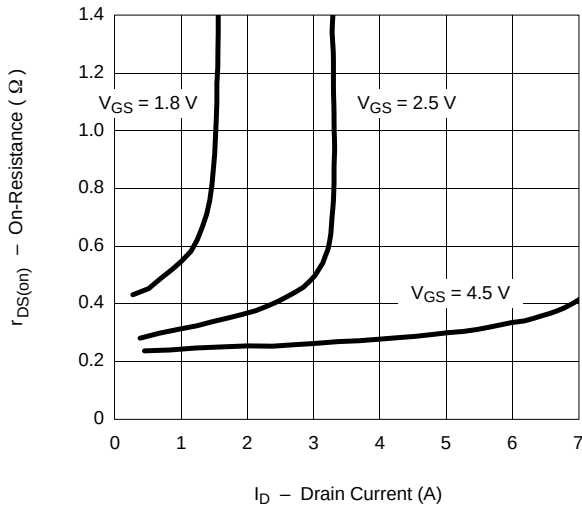
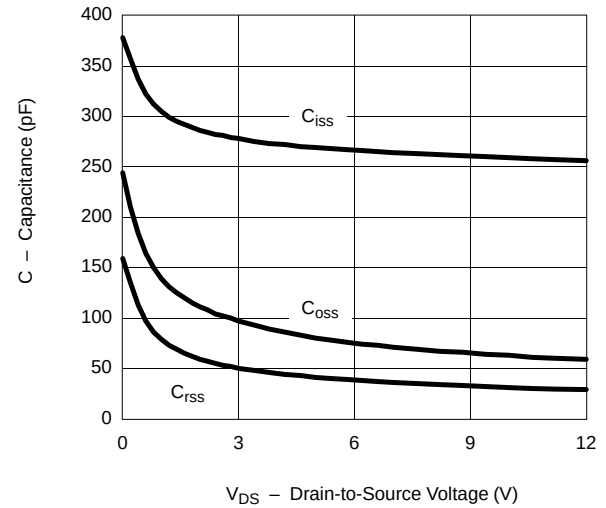
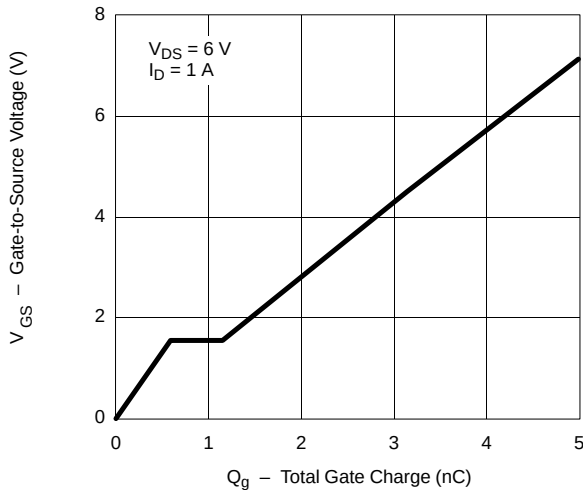
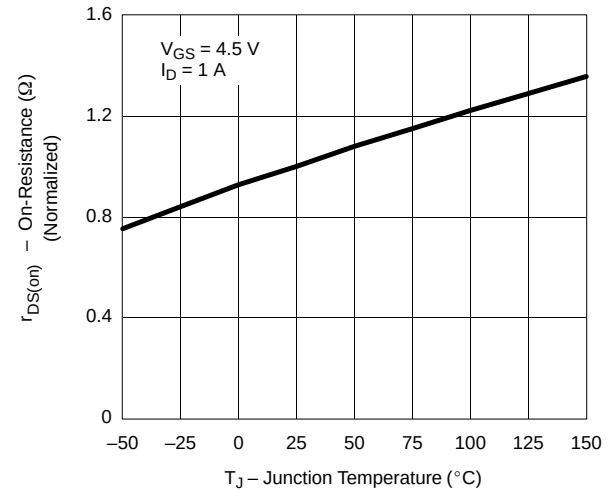
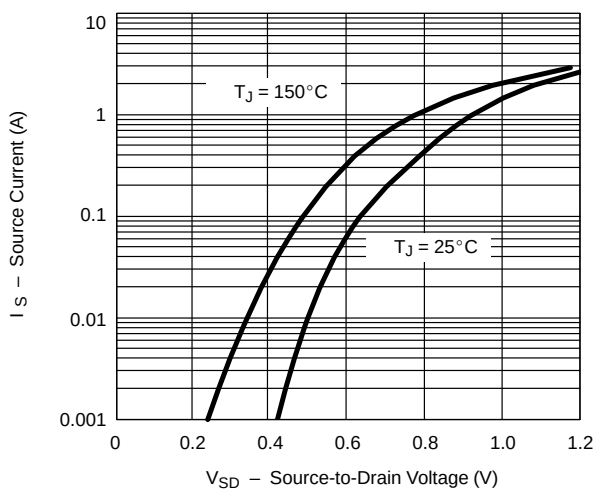
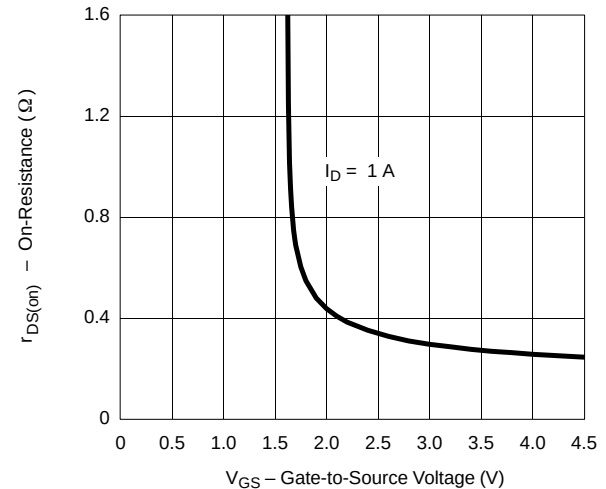
Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Static						
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = -250\ \mu\text{A}$	-0.45			V
Gate-Body Leakage	I_{GSS}	$V_{DS} = 0\ \text{V}, V_{GS} = \pm 8\ \text{V}$			± 100	nA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = -9.6\ \text{V}, V_{GS} = 0\ \text{V}$			-1	μA
		$V_{DS} = -9.6\ \text{V}, V_{GS} = 0\ \text{V}, T_J = 70^\circ\text{C}$			-5	
On-State Drain Current ^a	$I_{D(on)}$	$V_{DS} = -5\ \text{V}, V_{GS} = -4.5\ \text{V}$	-3			A
Drain-Source On-State Resistance ^a	$r_{DS(on)}$	$V_{GS} = -4.5\ \text{V}, I_D = -1\ \text{A}$		0.240	0.290	Ω
		$V_{GS} = -2.5\ \text{V}, I_D = -0.5\ \text{A}$		0.350	0.435	
		$V_{GS} = -1.8\ \text{V}, I_D = -0.3\ \text{A}$		0.480	0.580	
Forward Transconductance ^a	g_{fs}	$V_{DS} = -5\ \text{V}, I_D = -1\ \text{A}$		3.5		S
Diode Forward Voltage ^a	V_{SD}	$I_S = -1\ \text{A}, V_{GS} = 0\ \text{V}$			-1.2	V
Dynamic^b						
Total Gate Charge	Q_g	$V_{DS} = -6\ \text{V}, V_{GS} = -4.5\ \text{V}, I_D = -1\ \text{A}$		3.2	5	nC
Gate-Source Charge	Q_{gs}			0.59		
Gate-Drain Charge	Q_{gd}			0.56		
Turn-On Delay Time	$t_{d(on)}$	$V_{DD} = -6\ \text{V}, R_L = 4\ \Omega$ $I_D \cong -1\ \text{A}, V_{GEN} = -4.5\ \text{V}, R_G = 6\ \Omega$		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}	$I_F = -1\ \text{A}, di/dt = 100\ \text{A}/\mu\text{s}$		32	52	

Notes

a. Pulse test; pulse width $\leq 300\ \mu\text{s}$, duty cycle $\leq 2\%$.

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)
