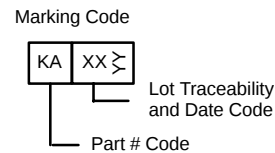
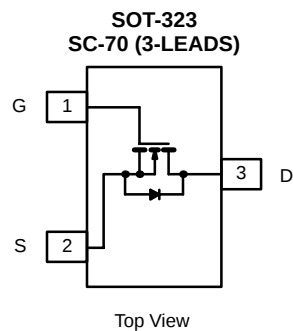




N-Channel 30-V (D-S) MOSFET

TrenchFET®
Power MOSFETs

PRODUCT SUMMARY		
V_{DS} (V)	$r_{DS(on)}$ (Ω)	I_D (A)
30	0.480 @ $V_{GS} = 10$ V	0.64
	0.700 @ $V_{GS} = 4.5$ V	0.53



ABSOLUTE MAXIMUM RATINGS (T _A = 25 °C UNLESS OTHERWISE NOTED)					
Parameter		Symbol	5 secs	Steady State	Unit
Drain-Source Voltage		V _{DS}	30		V
Gate-Source Voltage		V _{GS}	± 20		
Continuous Drain Current (T _J = 150 °C) ^a	T _A = 25 °C	I _D	0.64	0.60	A
	T _A = 70 °C		0.51	0.48	
Pulsed Drain Current		I _{DM}	1.5		
Continuous Diode Current (Diode Conduction) ^a		I _S	0.26	0.23	
Maximum Power Dissipation ^a	T _A = 25 °C	P _D	0.31	0.28	W
	T _A = 70 °C		0.20	0.18	
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}	355	400	$^\circ\text{C/W}$
	Steady State		380	450	
Maximum Junction-to-Foot (Drain)	Steady State	R_{thJF}	285	340	

Notes

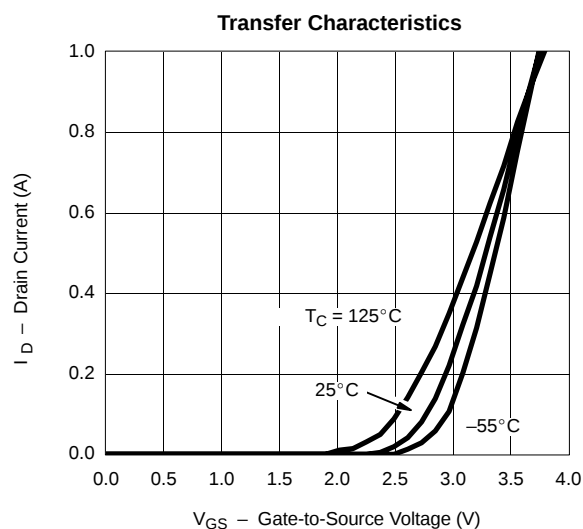
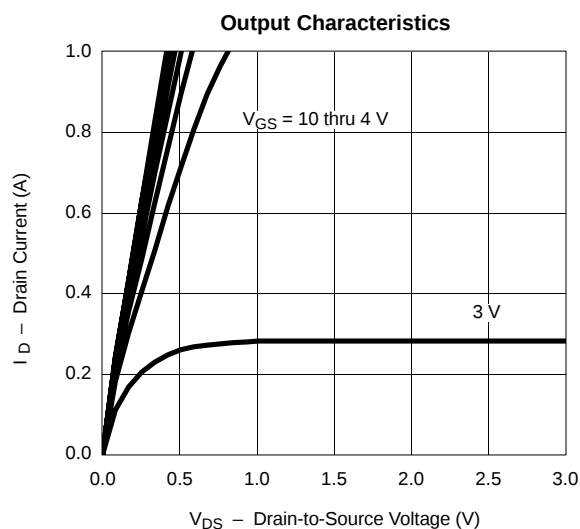
a. Surface Mounted on 1" x 1" FR4 Board.

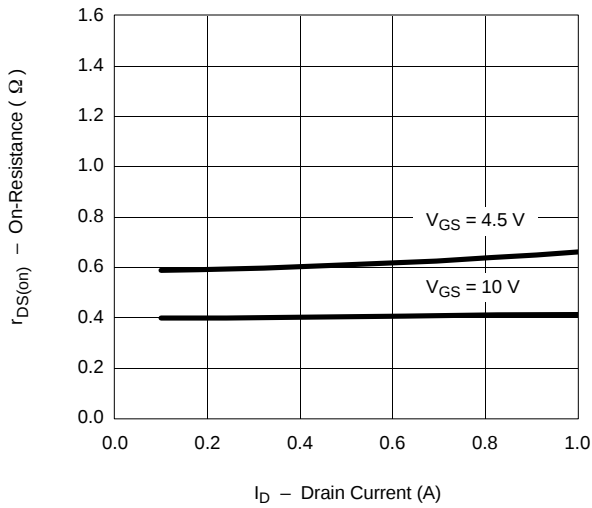
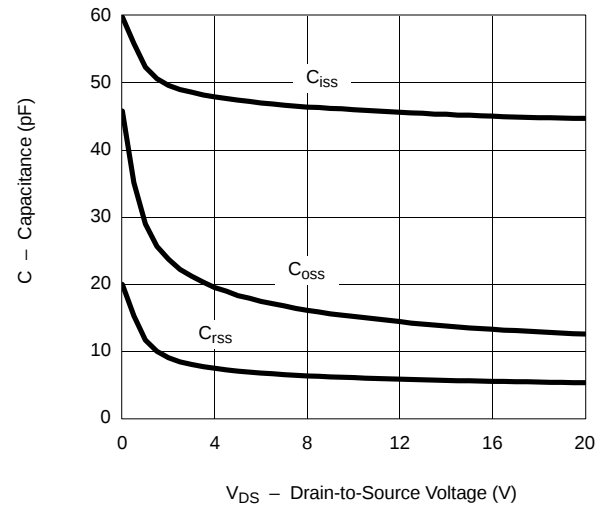
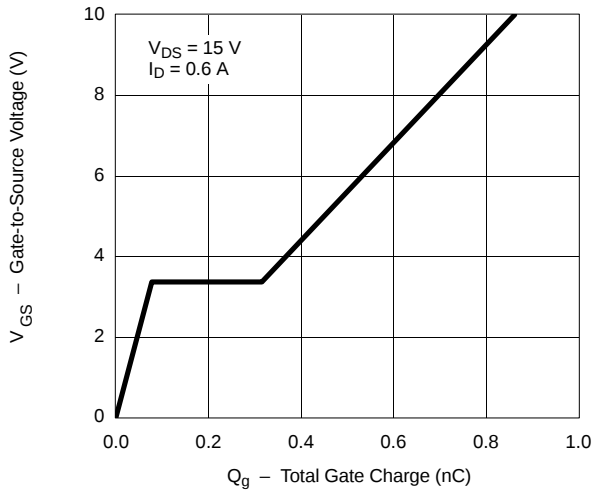
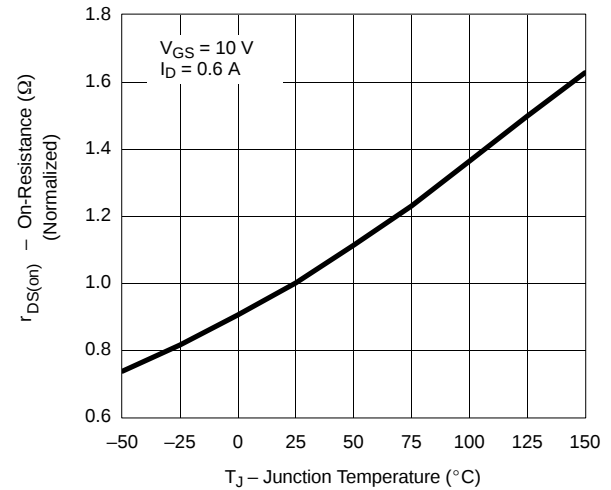
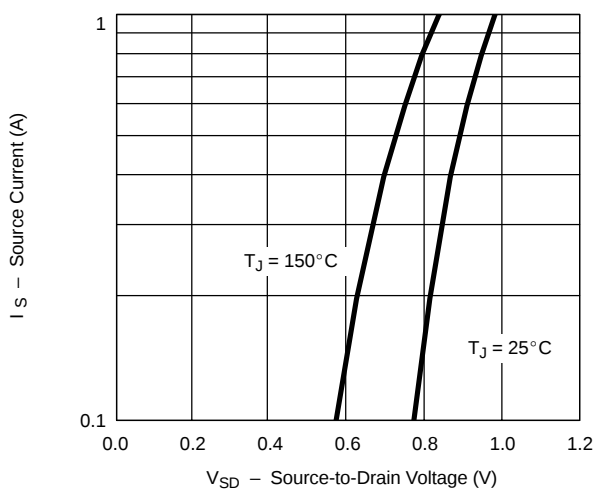
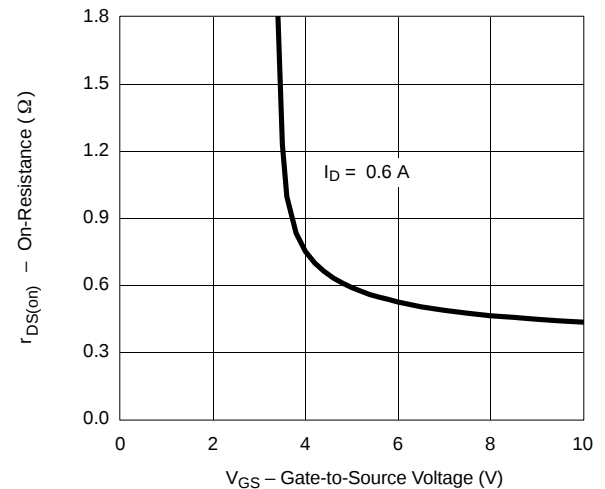
SPECIFICATIONS ($T_J = 25^\circ\text{C}$ UNLESS OTHERWISE NOTED)

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Static						
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}$, $I_D = 250\ \mu\text{A}$	1			V
Gate-Body Leakage	I_{GSS}	$V_{DS} = 0\ \text{V}$, $V_{GS} = \pm 20\ \text{V}$			± 100	nA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 24\ \text{V}$, $V_{GS} = 0\ \text{V}$			1	μA
		$V_{DS} = 24\ \text{V}$, $V_{GS} = 0\ \text{V}$, $T_J = 70^\circ\text{C}$			5	
On-State Drain Current ^a	$I_{D(on)}$	$V_{DS} = 5\ \text{V}$, $V_{GS} = 10\ \text{V}$	1.5			A
Drain-Source On-State Resistance ^a	$r_{DS(on)}$	$V_{GS} = 10\ \text{V}$, $I_D = 0.6\ \text{A}$		0.410	0.480	Ω
		$V_{GS} = 4.5\ \text{V}$, $I_D = 0.2\ \text{A}$		0.600	0.700	
Forward Transconductance ^a	g_{fs}	$V_{DS} = 15\ \text{V}$, $I_D = 0.6\ \text{A}$		0.75		S
Diode Forward Voltage ^a	V_{SD}	$I_S = 0.23\ \text{A}$, $V_{GS} = 0\ \text{V}$		0.8	1.2	V
Dynamic^b						
Total Gate Charge	Q_g	$V_{DS} = 15\ \text{V}$, $V_{GS} = 10\ \text{V}$, $I_D = 0.6\ \text{A}$		0.86	1.4	nC
Gate-Source Charge	Q_{gs}			0.24		
Gate-Drain Charge	Q_{gd}			0.08		
Turn-On Delay Time	$t_{d(on)}$	$V_{DD} = 15\ \text{V}$, $R_L = 30\ \Omega$ $I_D \cong 0.5\ \text{A}$, $V_{GEN} = 10\ \text{V}$, $R_G = 6\ \Omega$		5	10	ns
Rise Time	t_r			8	15	
Turn-Off Delay Time	$t_{d(off)}$			8	15	
Fall Time	t_f			7	15	
Source-Drain Reverse Recovery Time	t_{rr}	$I_F = 0.23\ \text{A}$, $di/dt = 100\ \text{A}/\mu\text{s}$		15	30	

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)
