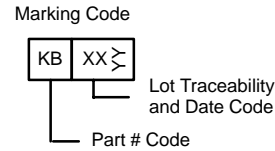
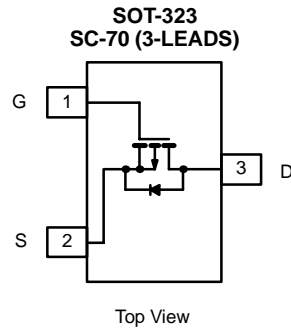




N-Channel 25-V (D-S) MOSFET

TrenchFET®
Power MOSFETs

PRODUCT SUMMARY		
V_{DS} (V)	$r_{DS(on)}$ (Ω)	I_D (A)
25	0.350 @ $V_{GS} = 4.5$ V	0.75
	0.450 @ $V_{GS} = 2.5$ V	0.66



ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ UNLESS OTHERWISE NOTED)					
Parameter	Symbol	5 secs	Steady State	Unit	
Drain-Source Voltage	V_{DS}	25		V	
Gate-Source Voltage	V_{GS}	± 8			
Continuous Drain Current ($T_J = 150^\circ\text{C}$) ^a	I_D	$T_A = 25^\circ\text{C}$	0.75	0.70	A
		$T_A = 70^\circ\text{C}$	0.60	0.56	
Pulsed Drain Current	I_{DM}	3.0			
Continuous Diode Current (Diode Conduction) ^a	I_S	0.28	0.24		
Maximum Power Dissipation ^a	P_D	$T_A = 25^\circ\text{C}$	0.33	0.29	W
		$T_A = 70^\circ\text{C}$	0.21	0.19	
Operating Junction and Storage Temperature Range	T_J, T_{stg}	-55 to 150		$^\circ\text{C}$	

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		380	450	
Maximum Junction-to-Foot (Drain)	Steady State	R_{thJF}	285	340	

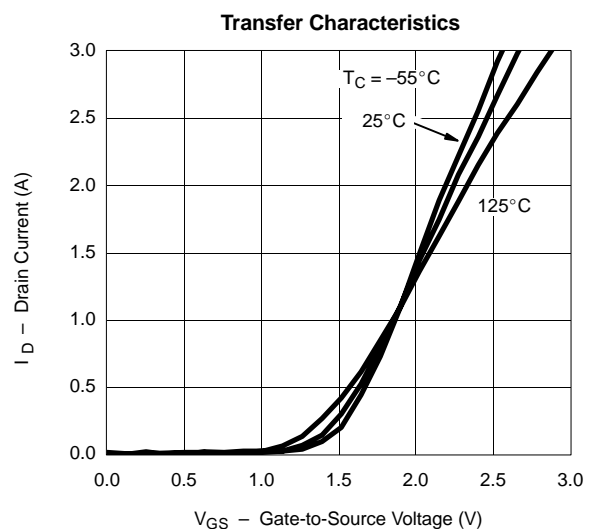
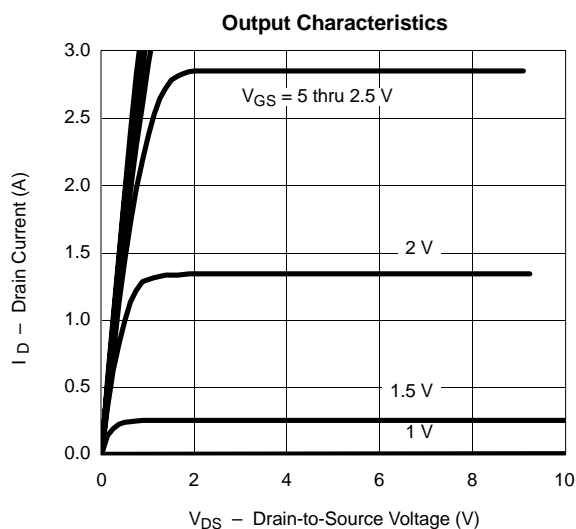
Notes
a. Surface Mounted on 1" x 1" FR4 Board.


SPECIFICATIONS (T_J = 25 °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	0.6			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} = 20 V, V _{GS} = 0 V			1	μA
		V _{DS} = 20 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	3.0			A
Drain-Source On-State Resistance ^a	r _{DS(on)}	V _{GS} = 4.5 V, I _D = 0.75 A		0.280	0.350	Ω
		V _{GS} = 2.5 V, I _D = 0.50 A		0.355	0.450	
Forward Transconductance ^a	g _{fs}	V _{DS} = 15 V, I _D = 0.75 A		1.5		S
Diode Forward Voltage ^a	V _{SD}	I _S = 0.24 A, V _{GS} = 0 V		0.8	1.2	V
Dynamic^b						
Total Gate Charge	Q _g	V _{DS} = 15 V, V _{GS} = 4.5 V, I _D = 0.75 A		1.85	2.8	nC
Gate-Source Charge	Q _{gs}			0.15		
Gate-Drain Charge	Q _{gd}			0.82		
Turn-On Delay Time	t _{d(on)}	V _{DD} = 15 V, R _L = 20 Ω I _D ≅ 0.75 A, V _{GEN} = 4.5 V, R _G = 6 Ω		11	20	ns
Rise Time	t _r			18	30	
Turn-Off Delay Time	t _{d(off)}			17	30	
Fall Time	t _f			11	20	
Source-Drain Reverse Recovery Time	t _{rr}		I _F = 0.24 A, di/dt = 100 A/μs		30	

Notes

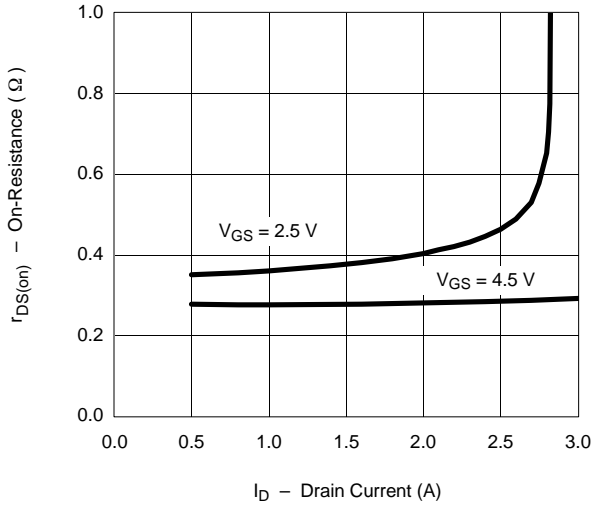
- a. Pulse test; pulse width ≤ 300 μs, duty cycle ≤ 2%.
 b. Guaranteed by design, not subject to production testing.

TYPICAL CHARACTERISTICS (25 °C UNLESS NOTED)


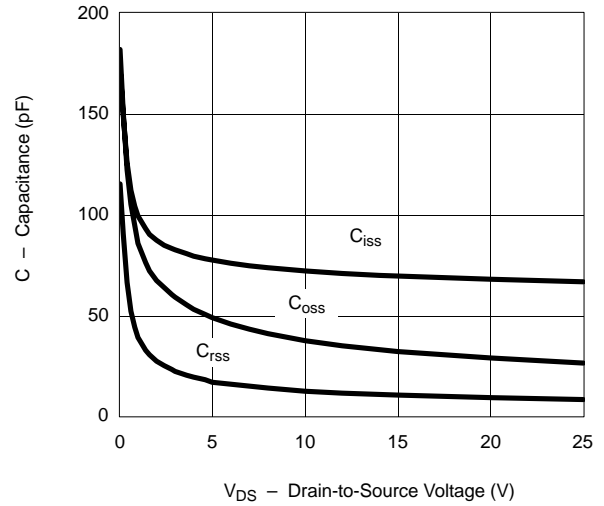


TYPICAL CHARACTERISTICS (25 °C UNLESS NOTED)

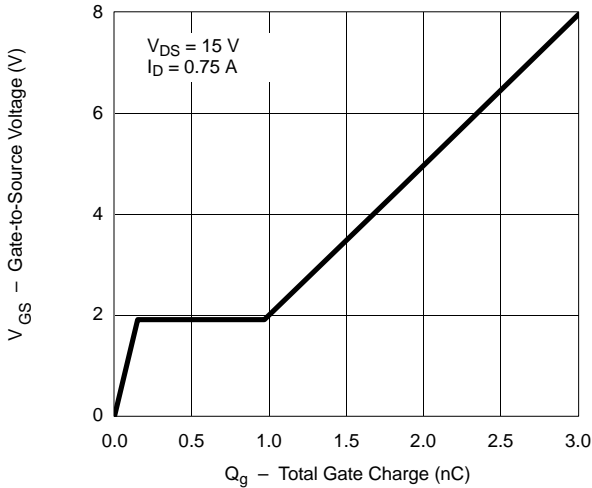
On-Resistance vs. Drain Current



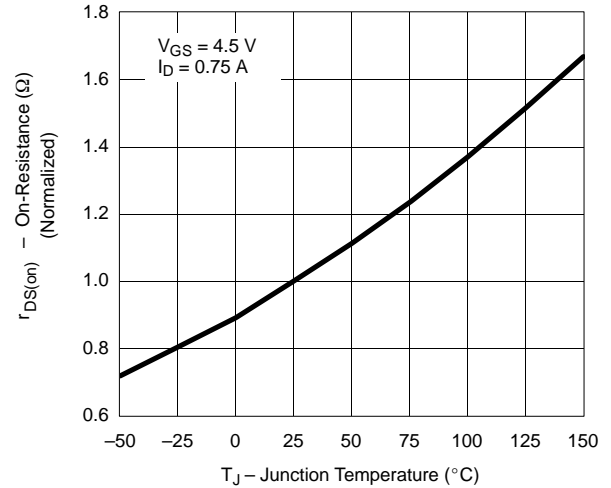
Capacitance



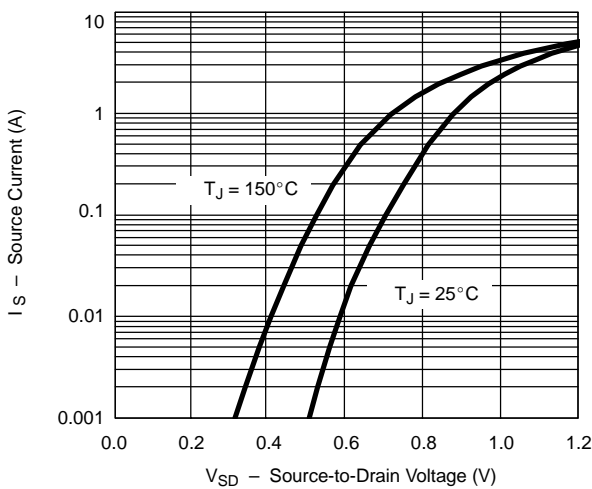
Gate Charge



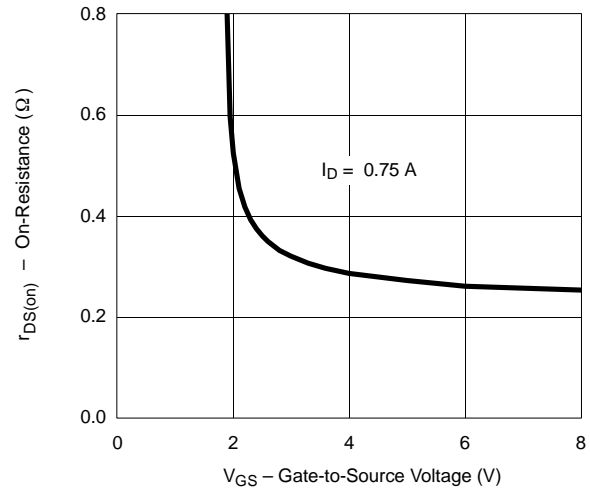
On-Resistance vs. Junction Temperature



Source-Drain Diode Forward Voltage



On-Resistance vs. Gate-to-Source Voltage



TYPICAL CHARACTERISTICS (25 °C UNLESS NOTED)

