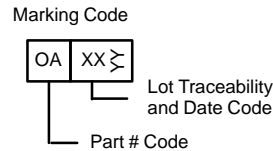
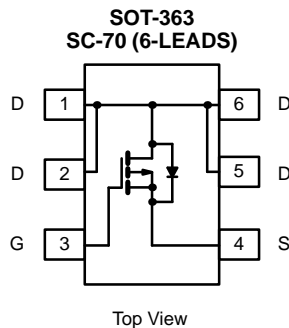




P-Channel 2.5-V (G-S) MOSFET

TrenchFET[®]
Power MOSFETS
2.5-V Rated

PRODUCT SUMMARY		
V_{DS} (V)	$r_{DS(on)}$ (Ω)	I_D (A)
-20	0.180 @ $V_{GS} = -4.5$ V	± 1.5
	0.200 @ $V_{GS} = -3.6$ V	± 1.4
	0.265 @ $V_{GS} = -2.5$ V	± 1.2



ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ UNLESS OTHERWISE NOTED)					
Parameter		Symbol	5 secs	Steady State	Unit
Drain-Source Voltage		V_{DS}	-20		V
Gate-Source Voltage		V_{GS}	± 12		
Continuous Drain Current ($T_J = 150^\circ\text{C}$) ^a	$T_A = 25^\circ\text{C}$	I_D	± 1.5	± 1.4	A
	$T_A = 85^\circ\text{C}$		± 1.2	± 1.0	
Pulsed Drain Current		I_{DM}	± 5		
Continuous Diode Current (Diode Conduction) ^a		I_S	-0.8	-0.8	
Maximum Power Dissipation ^a	$T_A = 25^\circ\text{C}$	P_D	0.625	0.568	W
	$T_A = 85^\circ\text{C}$		0.400	0.295	
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}	165	200	$^\circ\text{C/W}$
	Steady State		180	220	
Maximum Junction-to-Foot (Drain)	Steady State	R_{thJF}	105	130	

Notes

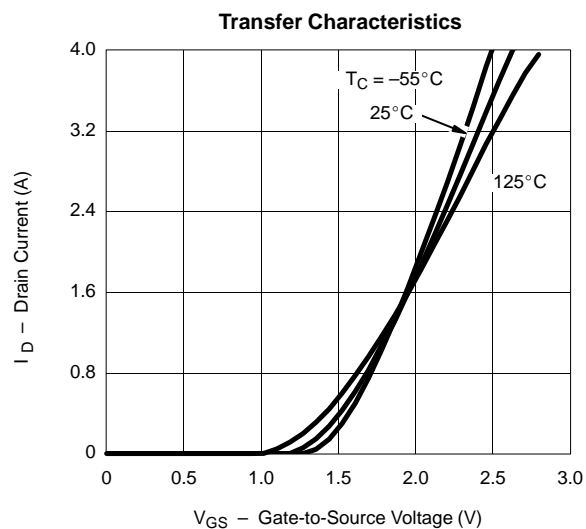
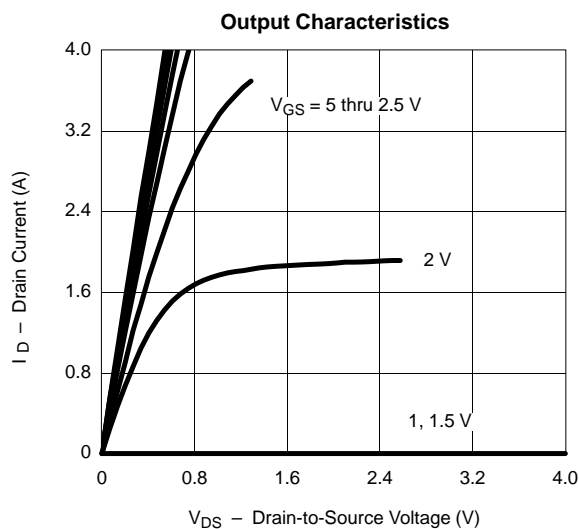
a. Surface Mounted on 1" x 1" FR4 Board.

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} = ±12 V			±100	nA
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = -16 V, V _{GS} = 0 V			-1	μA
		V _{DS} = -16 V, V _{GS} = 0 V, T _J = 85 °C			-5	
On-State Drain Current ^a	I _{D(on)}	V _{DS} = -5 V, V _{GS} = -4.5 V	-2			A
Drain-Source On-State Resistance ^a	r _{DS(on)}	V _{GS} = -4.5 V, I _D = -1.5 A		0.145	0.180	Ω
		V _{GS} = -3.6 V, I _D = -1.4 A		0.165	0.200	
		V _{GS} = -2.5 V, I _D = -0.8 A		0.220	0.265	
Forward Transconductance ^a	g _{fs}	V _{DS} = -10 V, I _D = -1.5 A		3.8		S
Diode Forward Voltage ^a	V _{SD}	I _S = -0.8 A, V _{GS} = 0 V		-0.78	-1.1	V
Dynamic^b						
Total Gate Charge	Q _g	V _{DS} = -10 V, V _{GS} = -4.5 V, I _D = -1.5 A		3.7	4.5	nC
Gate-Source Charge	Q _{gs}			0.9		
Gate-Drain Charge	Q _{gd}			0.9		
Turn-On Delay Time	t _{d(on)}	V _{DD} = -10 V, R _L = 10 Ω I _D ≅ -1 A, V _{GEN} = -4.5 V, R _G = 6 Ω		8	12	ns
Rise Time	t _r			25	40	
Turn-Off Delay Time	t _{d(off)}			21	32	
Fall Time	t _f			20	30	
Source-Drain Reverse Recovery Time	t _{rr}		I _F = -0.8 A, di/dt = 100 A/μs		20	

Notes

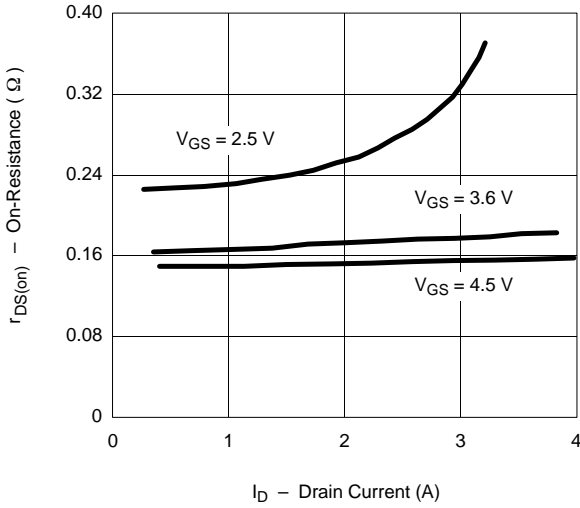
- a. Pulse test; pulse width ≤ 300 μs, duty cycle ≤ 2%.
b. Guaranteed by design, not subject to production testing.

TYPICAL CHARACTERISTICS (25 °C UNLESS NOTED)

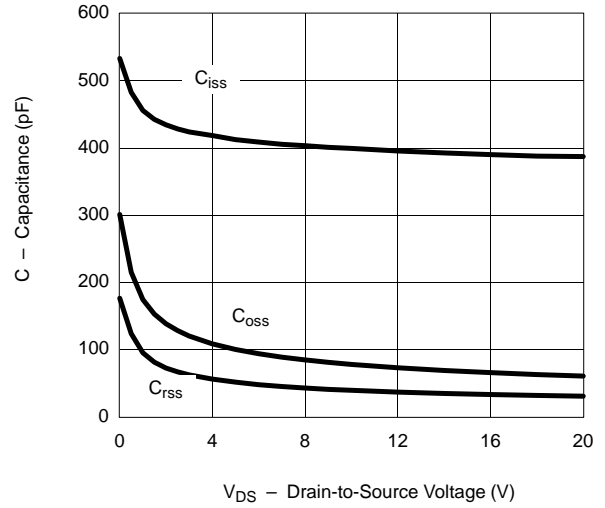


TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)

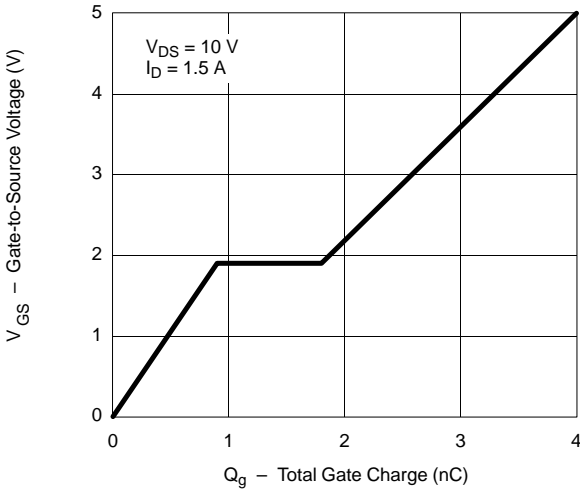
On-Resistance vs. Drain Current



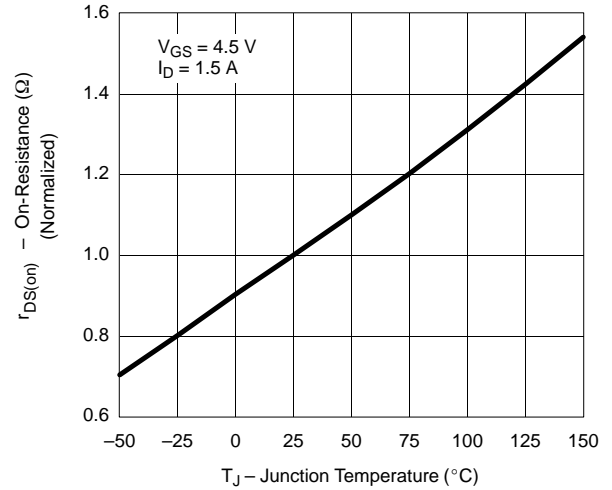
Capacitance



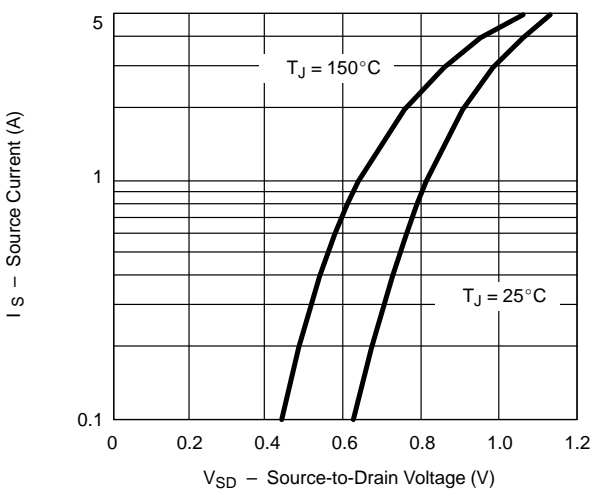
Gate Charge



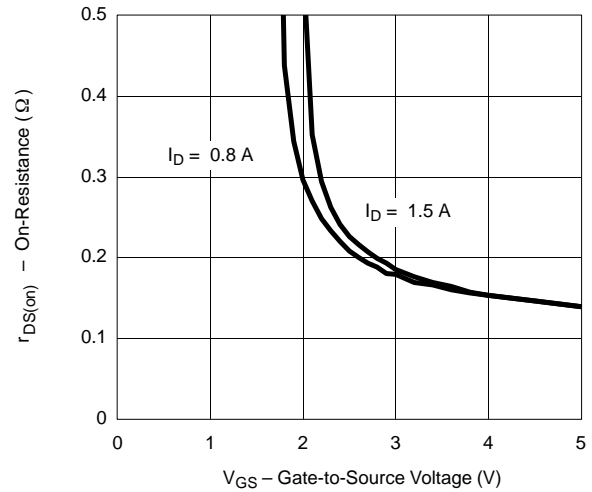
On-Resistance vs. Junction Temperature



Source-Drain Diode Forward Voltage



On-Resistance vs. Gate-to-Source Voltage





TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)

