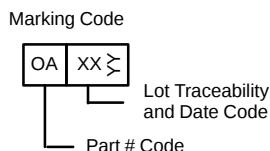
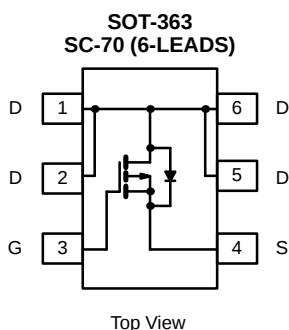


P-Channel 2.5-V (G-S) MOSFET

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

TrenchFET®
Power MOSFETs
2.5-V Rated



ABSOLUTE MAXIMUM RATINGS (T _A = 25°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°C) ^a	T _A = 25°C	I _D	± 1.5	± 1.4	A
	T _A = 85°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°C	P _D	0.625	0.568	W
	T _A = 85°C		0.400	0.295	
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}	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.

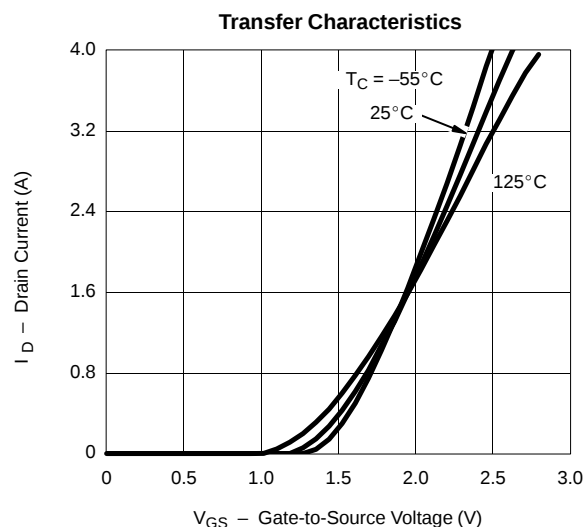
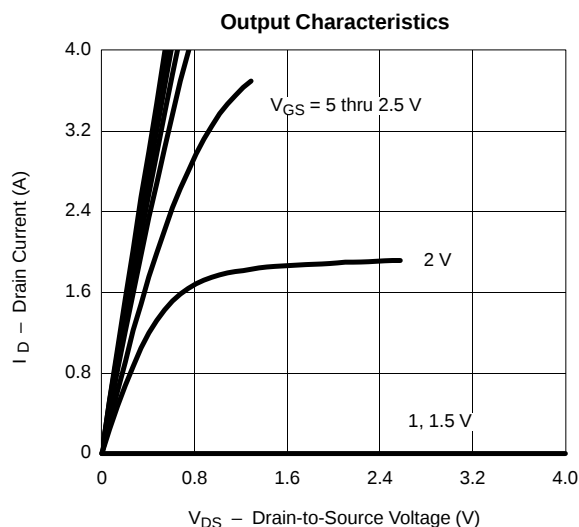
SPECIFICATIONS ($T_J = 25^\circ\text{C}$ UNLESS OTHERWISE NOTED)

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Static						
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}$, $I_D = -250\ \mu\text{A}$	-0.6			V
Gate-Body Leakage	I_{GSS}	$V_{DS} = 0\ \text{V}$, $V_{GS} = \pm 12\ \text{V}$			± 100	nA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = -16\ \text{V}$, $V_{GS} = 0\ \text{V}$			-1	μA
		$V_{DS} = -16\ \text{V}$, $V_{GS} = 0\ \text{V}$, $T_J = 85^\circ\text{C}$			-5	
On-State Drain Current ^a	$I_{D(on)}$	$V_{DS} = -5\ \text{V}$, $V_{GS} = -4.5\ \text{V}$	-2			A
Drain-Source On-State Resistance ^a	$r_{DS(on)}$	$V_{GS} = -4.5\ \text{V}$, $I_D = -1.5\ \text{A}$		0.145	0.180	Ω
		$V_{GS} = -3.6\ \text{V}$, $I_D = -1.4\ \text{A}$		0.165	0.200	
		$V_{GS} = -2.5\ \text{V}$, $I_D = -0.8\ \text{A}$		0.220	0.265	
Forward Transconductance ^a	g_{fs}	$V_{DS} = -10\ \text{V}$, $I_D = -1.5\ \text{A}$		3.8		S
Diode Forward Voltage ^a	V_{SD}	$I_S = -0.8\ \text{A}$, $V_{GS} = 0\ \text{V}$		-0.78	-1.1	V
Dynamic^b						
Total Gate Charge	Q_g	$V_{DS} = -10\ \text{V}$, $V_{GS} = -4.5\ \text{V}$, $I_D = -1.5\ \text{A}$		3.7	4.5	nC
Gate-Source Charge	Q_{gs}			0.9		
Gate-Drain Charge	Q_{gd}			0.9		
Turn-On Delay Time	$t_{d(on)}$	$V_{DD} = -10\ \text{V}$, $R_L = 10\ \Omega$ $I_D \approx -1\ \text{A}$, $V_{GEN} = -4.5\ \text{V}$, $R_G = 6\ \Omega$		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}	$I_F = -0.8\ \text{A}$, $di/dt = 100\ \text{A}/\mu\text{s}$		20	40	

Notes

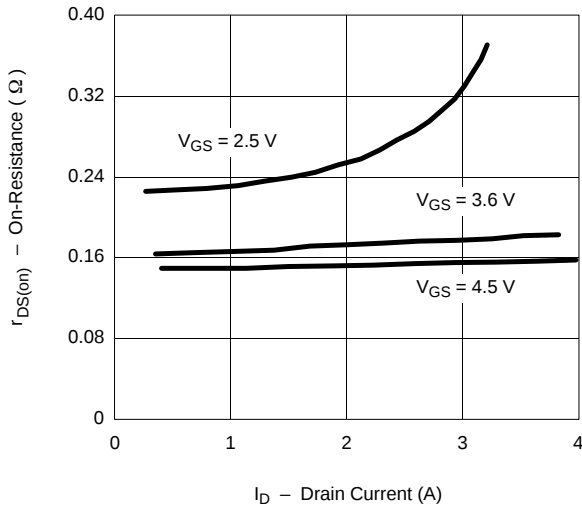
a. Pulse test; pulse width $\leq 300\ \mu\text{s}$, duty cycle $\leq 2\%$.

b. Guaranteed by design, not subject to production testing.

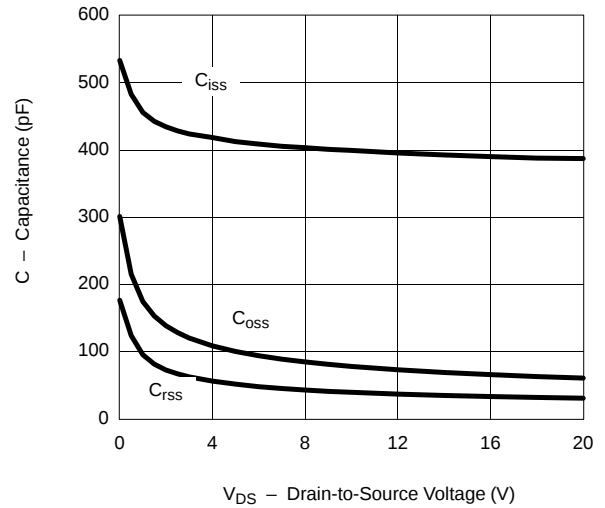
TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)

TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)

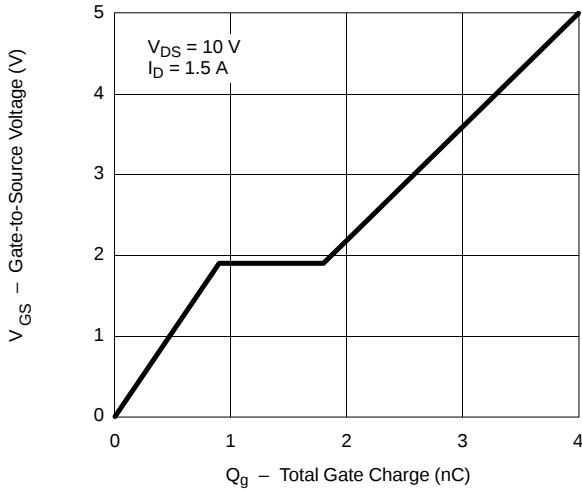
On-Resistance vs. Drain Current



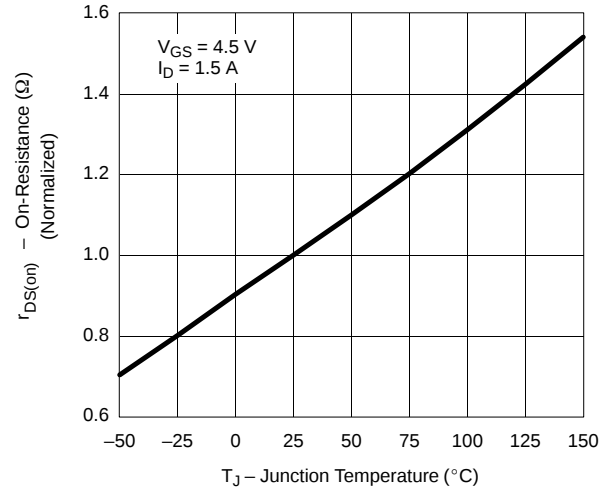
Capacitance



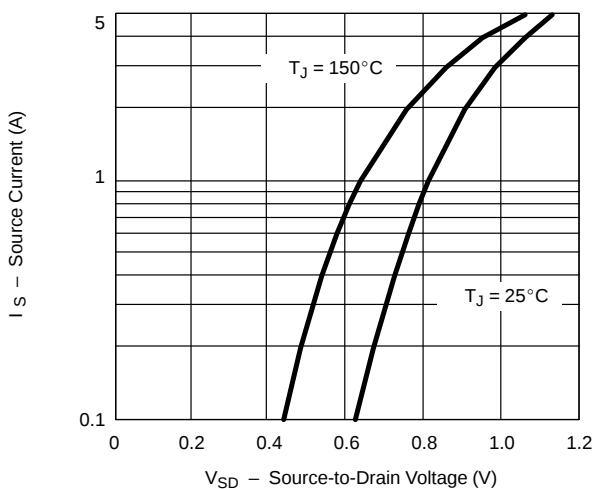
Gate Charge



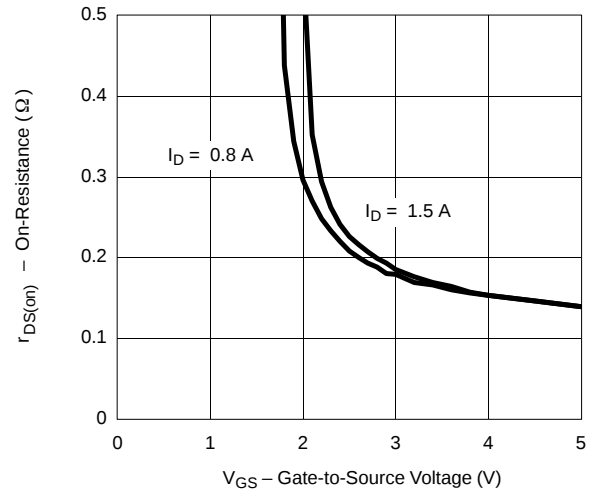
On-Resistance vs. Junction Temperature



Source-Drain Diode Forward Voltage



On-Resistance vs. Gate-to-Source Voltage



TYPICAL CHARACTERISTICS (25 °C UNLESS NOTED)
