

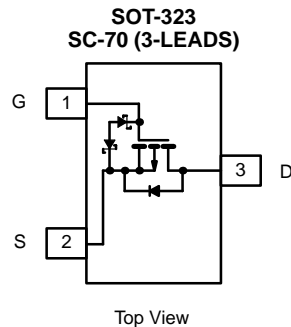


## P-Channel 2.5-V (G-S) MOSFET

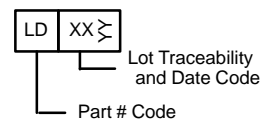
PRODUCT SUMMARY		
$V_{DS}$ (V)	$r_{DS(on)}$ ( $\Omega$ )	$I_D$ (A)
-20	0.430 @ $V_{GS} = -4.5$ V	$\pm 0.72$
	0.480 @ $V_{GS} = -3.6$ V	$\pm 0.68$
	0.700 @ $V_{GS} = -2.5$ V	$\pm 0.56$



**ESD Protected**  
3000 V



Marking Code



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	$V_{GS}$	$\pm 12$			
Continuous Drain Current ( $T_J = 150^\circ\text{C}$ ) <sup>a</sup>	$I_D$	$T_A = 25^\circ\text{C}$	$\pm 0.72$	$\pm 0.67$	A
		$T_A = 70^\circ\text{C}$	$\pm 0.58$	$\pm 0.54$	
Pulsed Drain Current	$I_{DM}$	$\pm 2.5$			
Continuous Diode Current (Diode Conduction) <sup>a</sup>	$I_S$	-0.28	-0.24		
Maximum Power Dissipation <sup>a</sup>	$P_D$	$T_A = 25^\circ\text{C}$	0.34	0.29	W
		$T_A = 70^\circ\text{C}$	0.22	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 <sup>a</sup>	$R_{thJA}$	$t \leq 5$ sec	315	375	$^\circ\text{C/W}$
		Steady State	360	430	
Maximum Junction-to-Foot (Drain)	$R_{thJF}$	285	340		

Notes

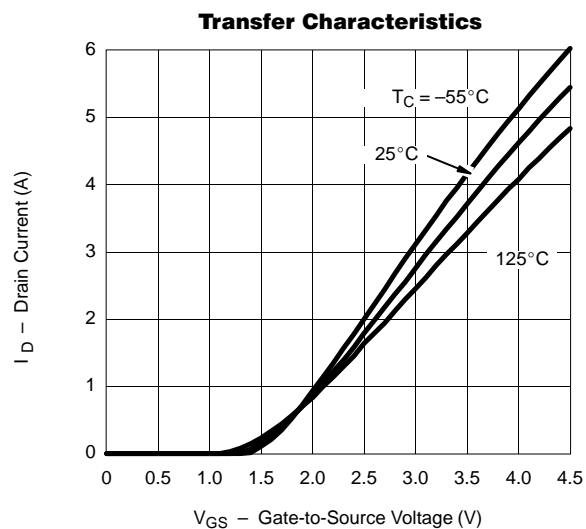
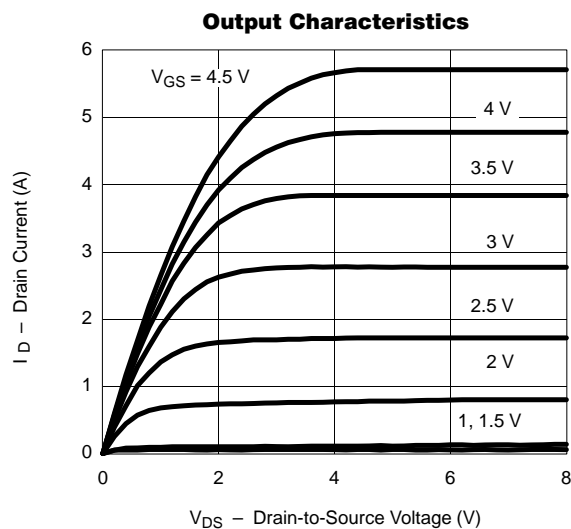
a. Surface Mounted on 1" x 1" FR4 Board.


**SPECIFICATIONS (T<sub>J</sub> = 25 °C UNLESS OTHERWISE NOTED)**

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
<b>Static</b>						
Gate Threshold Voltage	V <sub>GS(th)</sub>	V <sub>DS</sub> = V <sub>GS</sub> , I <sub>D</sub> = -250 μA	-0.6			V
Gate-Body Leakage	I <sub>GSS</sub>	V <sub>DS</sub> = 0 V, V <sub>GS</sub> = ±4.5 V			±1	μA
Zero Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> = -20 V, V <sub>GS</sub> = 0 V			-1	μA
		V <sub>DS</sub> = -20 V, V <sub>GS</sub> = 0 V, T <sub>J</sub> = 70 °C			-5	
On-State Drain Current <sup>a</sup>	I <sub>D(on)</sub>	V <sub>DS</sub> = -5 V, V <sub>GS</sub> = -4.5 V	-2.5			A
Drain-Source On-State Resistance <sup>a</sup>	r <sub>DS(on)</sub>	V <sub>GS</sub> = -4.5 V, I <sub>D</sub> = -1 A		0.360	0.430	Ω
		V <sub>GS</sub> = -3.6 V, I <sub>D</sub> = -0.7 A		0.400	0.480	
		V <sub>GS</sub> = -2.5 V, I <sub>D</sub> = -0.3 A		0.560	0.700	
Forward Transconductance <sup>a</sup>	g <sub>fs</sub>	V <sub>DS</sub> = -10 V, I <sub>D</sub> = -1 A		1.7		S
Diode Forward Voltage <sup>a</sup>	V <sub>SD</sub>	I <sub>S</sub> = -1 A, V <sub>GS</sub> = 0 V			-1.2	V
<b>Dynamic<sup>b</sup></b>						
Total Gate Charge	Q <sub>g</sub>	V <sub>DS</sub> = -10 V, V <sub>GS</sub> = -4.5 V, I <sub>D</sub> = -1 A		1.9	2.5	nC
Gate-Source Charge	Q <sub>gs</sub>			0.45		
Gate-Drain Charge	Q <sub>gd</sub>			0.44		
Turn-On Delay Time	t <sub>d(on)</sub>	V <sub>DD</sub> = -10 V, R <sub>L</sub> = 10 Ω I <sub>D</sub> ≅ -1 A, V <sub>GEN</sub> = -4.5 V, R <sub>G</sub> = 6 Ω		180	300	ns
Rise Time	t <sub>r</sub>			410	655	
Turn-Off Delay Time	t <sub>d(off)</sub>			560	900	
Fall Time	t <sub>f</sub>			530	850	
Source-Drain Reverse Recovery Time	t <sub>rr</sub>		I <sub>F</sub> = -1 A, di/dt = 100 A/μs		435	

## Notes

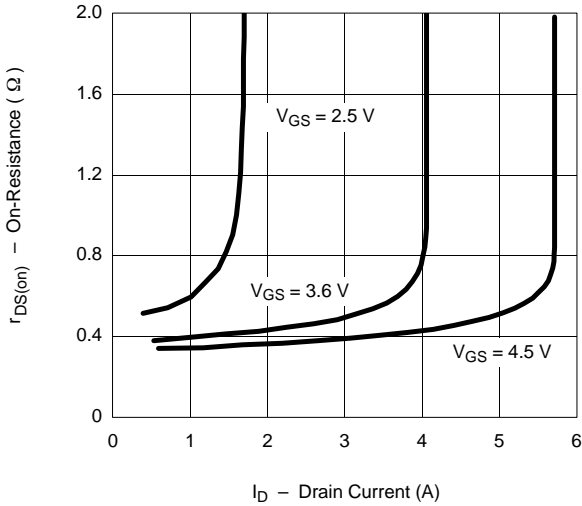
- a. Pulse test; pulse width ≤ 300 μs, duty cycle ≤ 2%.  
 b. Guaranteed by design, not subject to production testing.

**TYPICAL CHARACTERISTICS (25 °C UNLESS NOTED)**


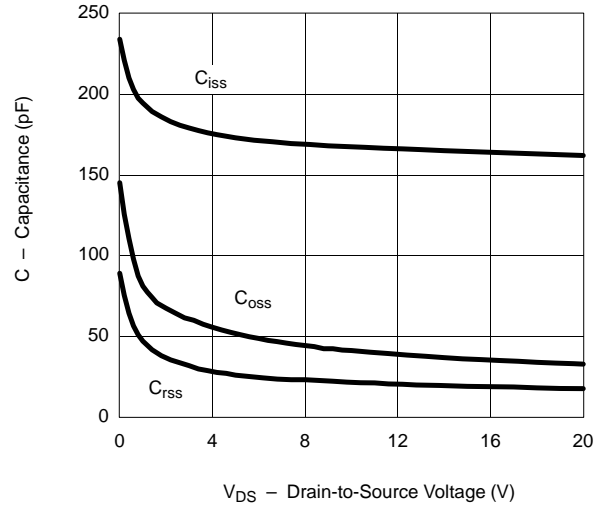


**TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)**

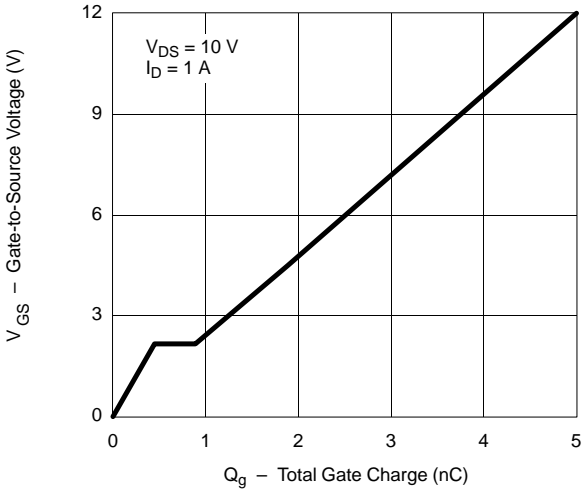
**On-Resistance vs. Drain Current**



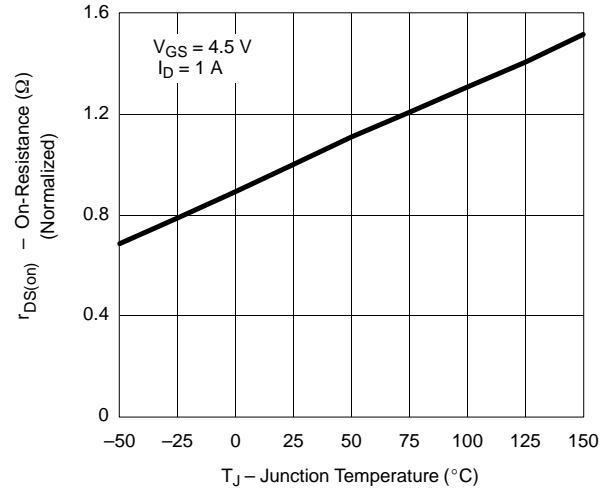
**Capacitance**



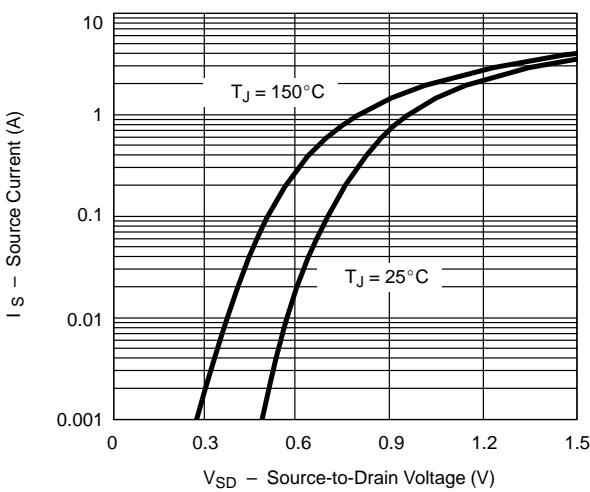
**Gate Charge**



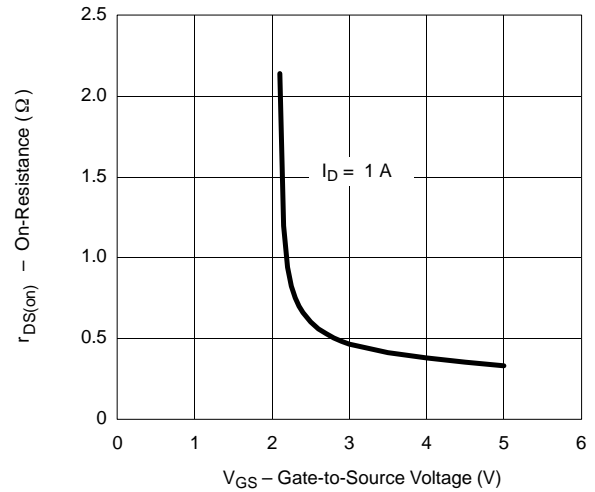
**On-Resistance vs. Junction Temperature**



**Source-Drain Diode Forward Voltage**



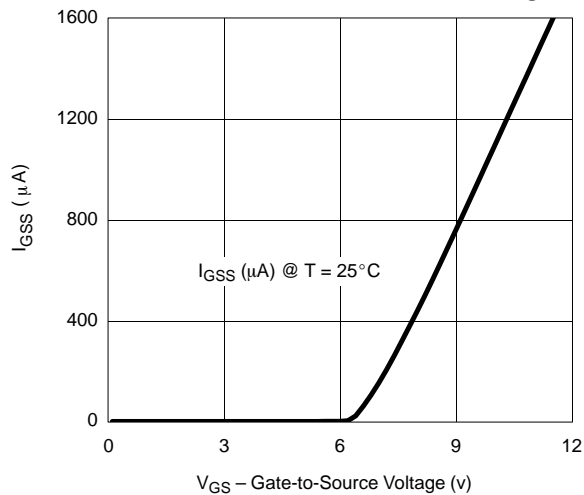
**On-Resistance vs. Gate-to-Source Voltage**



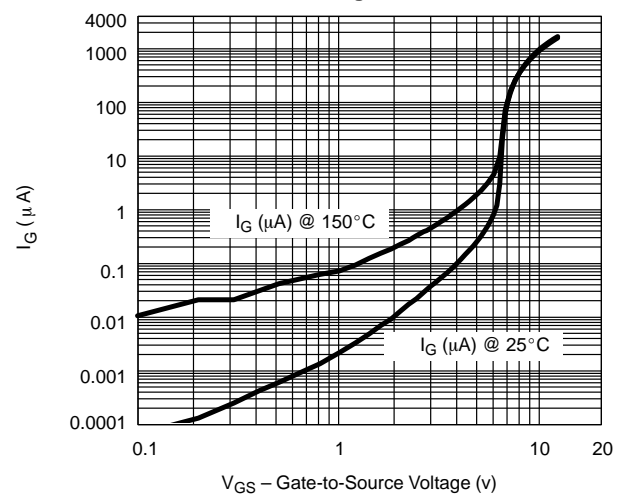


### TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)

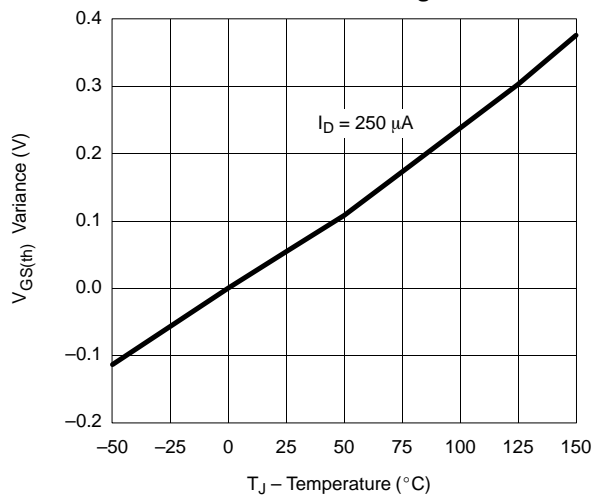
**Gate-Current vs. Gate-Source Voltage**



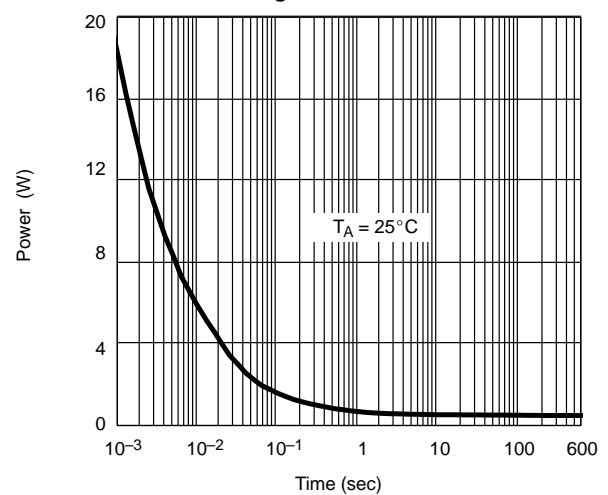
**Gate-Source Voltage vs. Gate-Current**



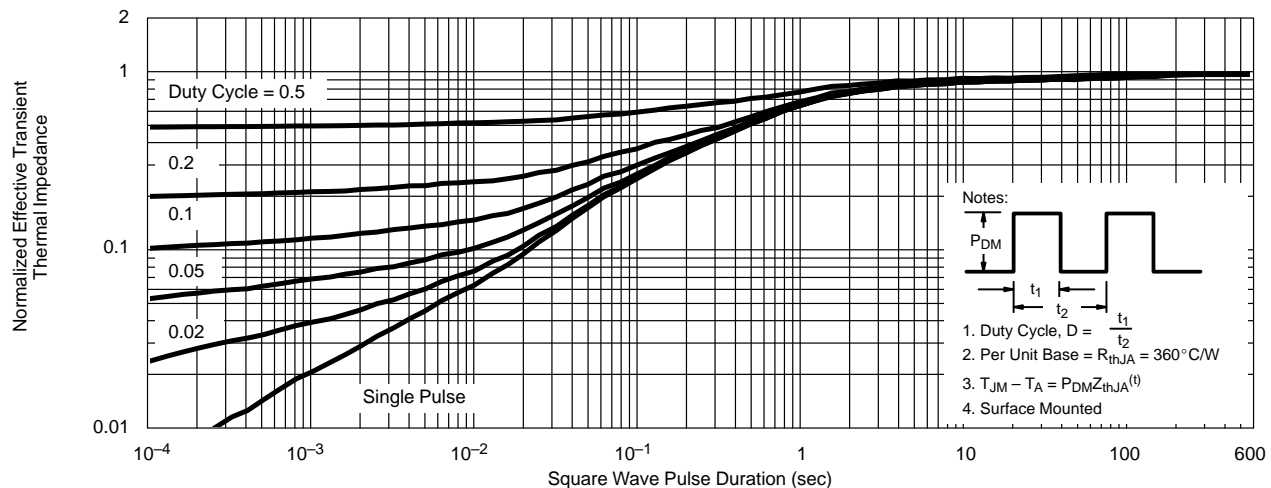
**Threshold Voltage**



**Single Pulse Power**



**Normalized Thermal Transient Impedance, Junction-to-Ambient**





**TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)**

