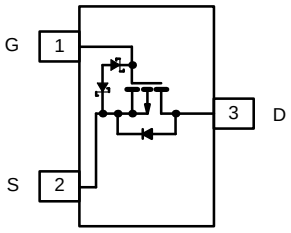
P-Channel 1.8-V (G-S) MOSFET

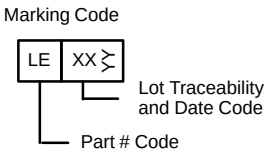
PRODUCT SUMMARY		
V_{DS} (V)	$r_{DS(on)}$ (Ω)	I_D (A)
–8	0.280 @ V_{GS} = –4.5 V	±0.92
	0.380 @ V_{GS} = –2.5 V	±0.79
	0.530 @ V_{GS} = –1.8 V	±0.67

ESD Protected
3000 V

SOT-323
SC-70 (3-LEADS)



Top View



ABSOLUTE MAXIMUM RATINGS (T_A = 25°C UNLESS OTHERWISE NOTED)					
Parameter		**Symbol**	**5 secs**	**Steady State**	**Unit**
Drain-Source Voltage		V_{DS}	–8		V
Gate-Source Voltage		V_{GS}	±8		
Continuous Drain Current (T_J = 150°C)[a]	T_A = 25°C	I_D	±0.92	±0.86	A
	T_A = 70°C		±0.74	±0.69	
Pulsed Drain Current		I_{DM}	±3		
Continuous Diode Current (Diode Conduction)[a]		I_S	–0.28	–0.24	
Maximum Power Dissipation[a]	T_A = 25°C	P_D	0.34	0.29	W
	T_A = 70°C		0.22	0.19	
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 ≤ 5 sec	R_{thJA}	315	375	°C/W
	Steady State		360	430	
Maximum Junction-to-Foot (Drain)	Steady State	R_{thJF}	285	340	

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

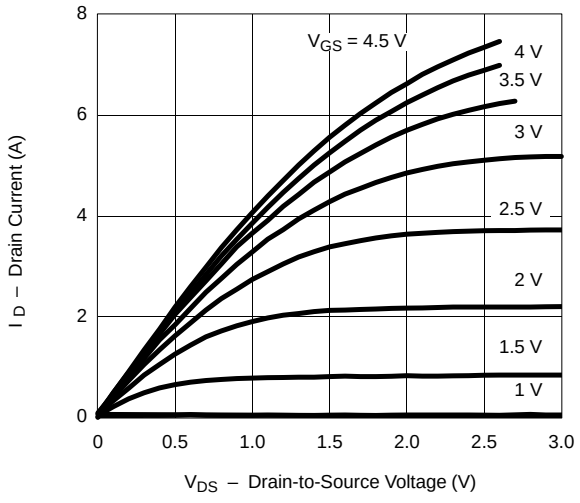
SPECIFICATIONS (T_J = 25°C UNLESS OTHERWISE NOTED)

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Static						
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS} = V_{GS}, I_D = –250 μA	–045			V
Gate-Body Leakage	I_{GSS}	V_{DS} = 0 V, V_{GS} = ±4.5 V			±1	μA
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} = –6.4 V, V_{GS} = 0 V			–1	μA
		V_{DS} = –6.4 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			A
Drain-Source On-State Resistance[a]	$r_{DS(on)}$	V_{GS} = –4.5 V, I_D = –1 A		0.230	0.280	Ω
		V_{GS} = –2.5 V, I_D = –0.5 A		0.315	0.380	
		V_{GS} = –1.8 V, I_D = –0.3 A		0.440	0.530	
Forward Transconductance[a]	g_{fs}	V_{DS} = –5 V, I_D = –1 A		3.5		S
Diode Forward Voltage[a]	V_{SD}	I_S = –1 A, V_{GS} = 0 V			–1.2	V
Dynamic[b]						
Total Gate Charge	Q_g	V_{DS} = –4 V, V_{GS} = –4.5 V, I_D = –1 A		2.6	4	nC
Gate-Source Charge	Q_{gs}			0.54		
Gate-Drain Charge	Q_{gd}			0.52		
Turn-On Delay Time	$t_{d(on)}$	V_{DD} = –4 V, R_L = 4 Ω I_D ≅ –1 A, V_{GEN} = –4.5 V, R_G = 6 Ω		206	330	ns
Rise Time	t_r			431	690	
Turn-Off Delay Time	$t_{d(off)}$			1350	2160	
Fall Time	t_f			1000	1600	
Source-Drain Reverse Recovery Time	t_{rr}	I_F = –1 A, di/dt = 100 A/μs		500	800	

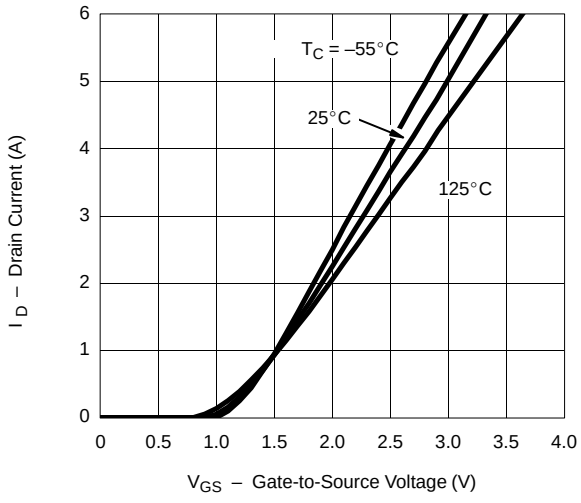
Notes
a. Pulse test; pulse width ≤ 300 μs, duty cycle ≤ 2%.
b. Guaranteed by design, not subject to production testing.

TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)

Output Characteristics

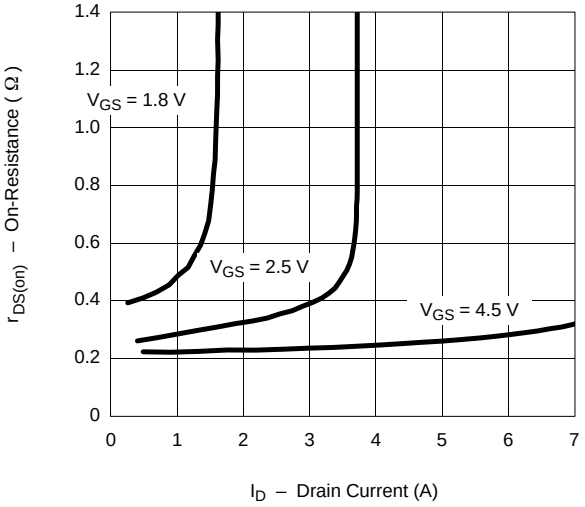


Transfer Characteristics

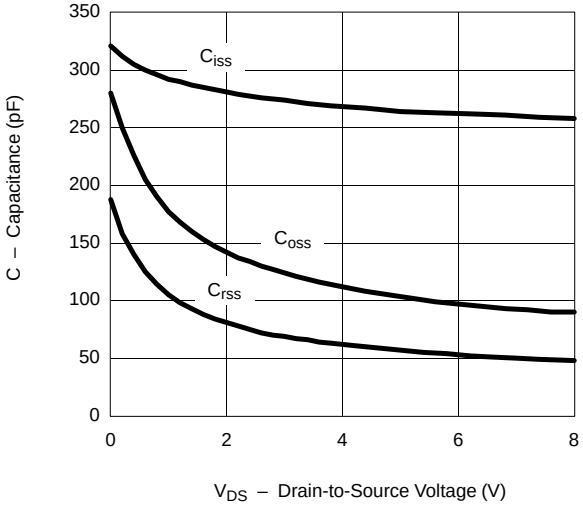


TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)

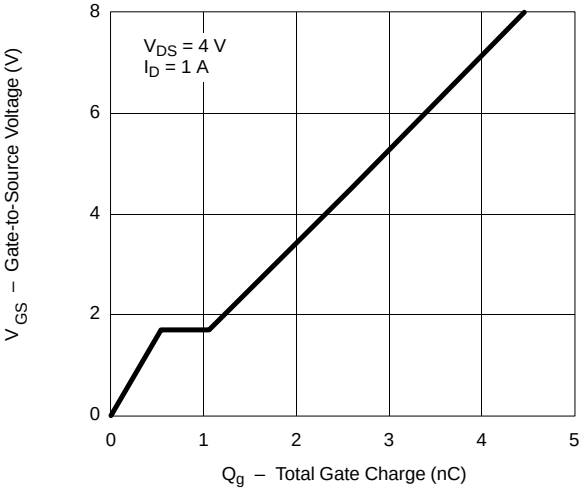
On-Resistance vs. Drain Current



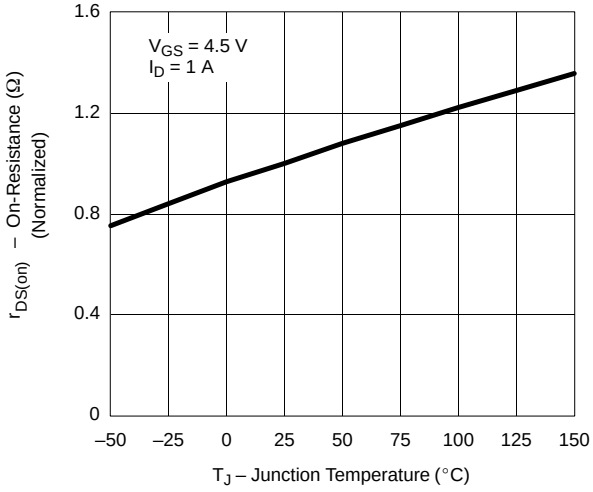
Capacitance



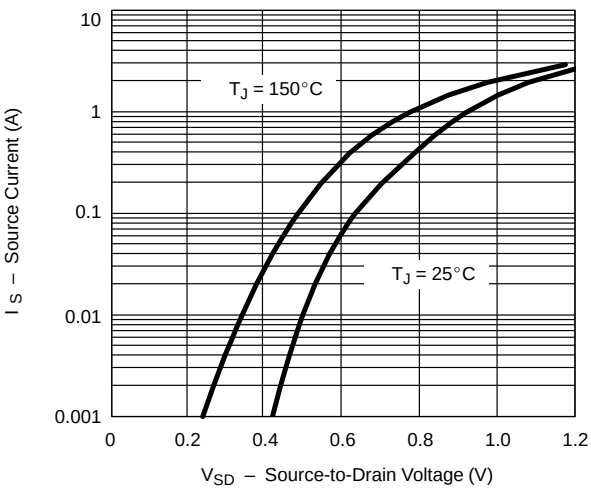
Gate Charge



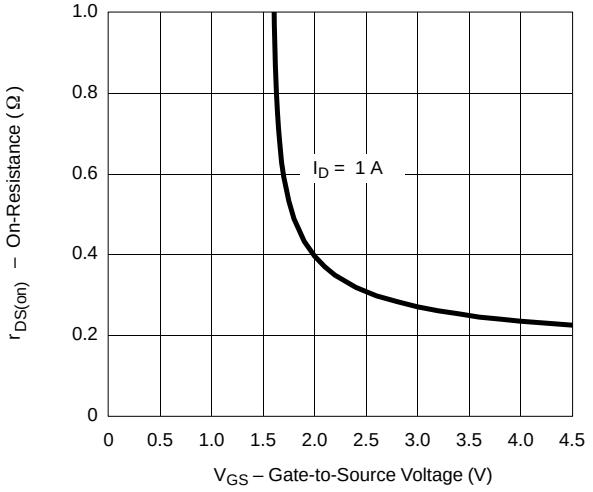
On-Resistance vs. Junction Temperature



Source-Drain Diode Forward Voltage

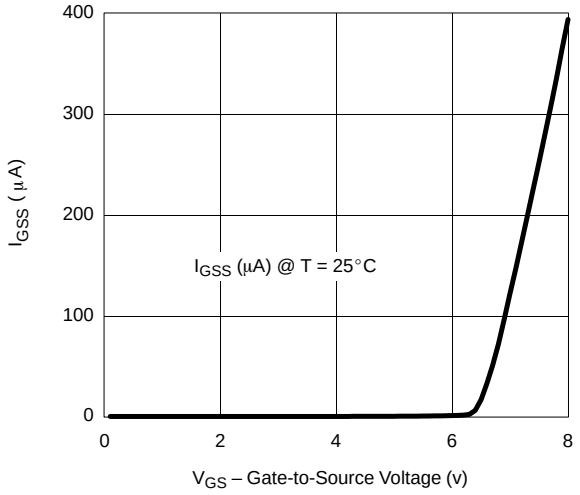


On-Resistance vs. Gate-to-Source Voltage

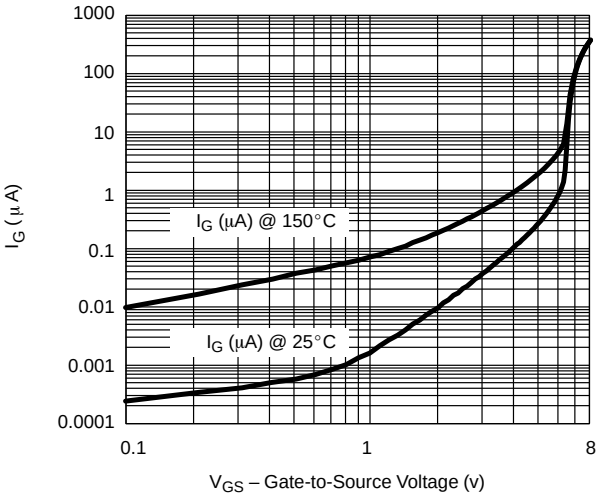


TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)

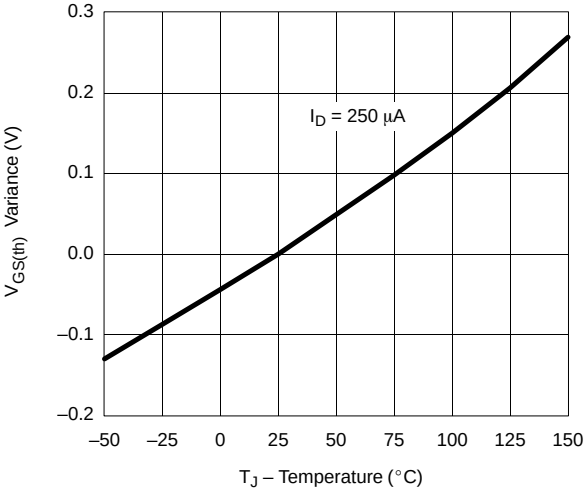
Gate-Current vs. Gate-Source Voltage



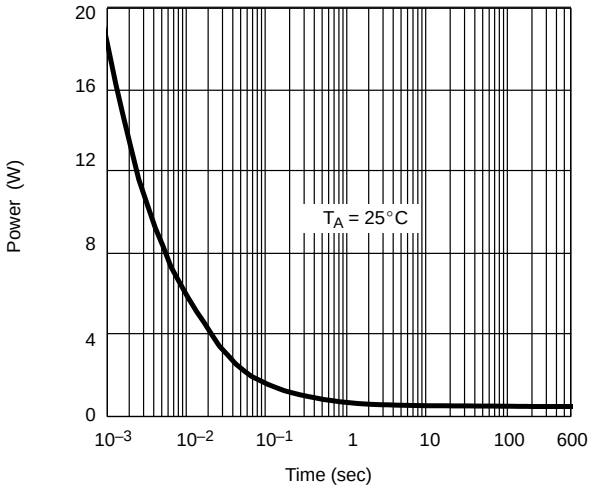
Gate-Source Voltage vs. Gate-Current



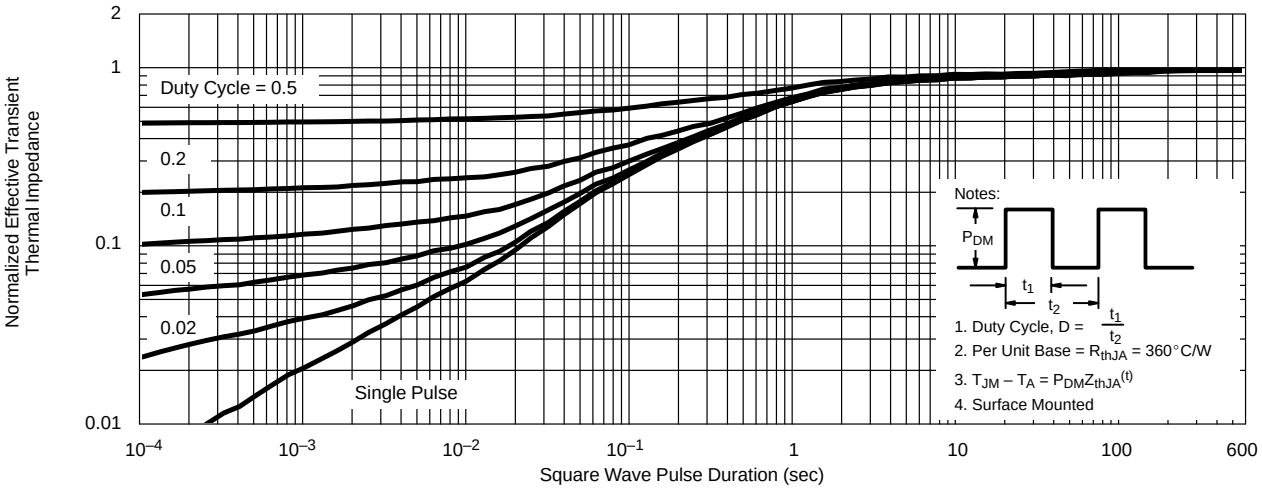
Threshold Voltage



Single Pulse Power

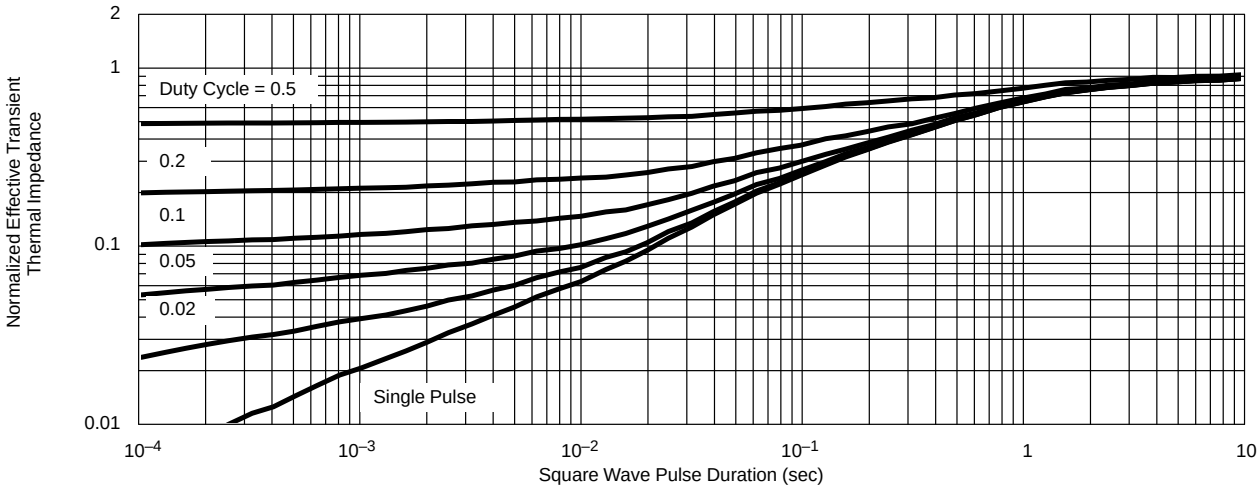


Normalized Thermal Transient Impedance, Junction-to-Ambient



TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)

Normalized Thermal Transient Impedance, Junction-to-Foot



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