



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

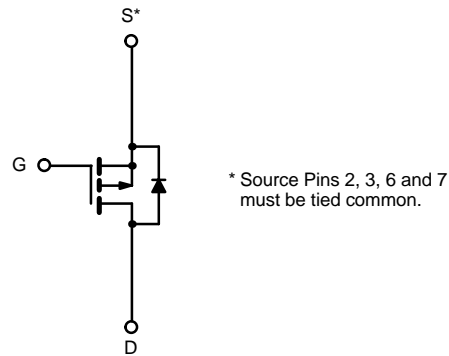
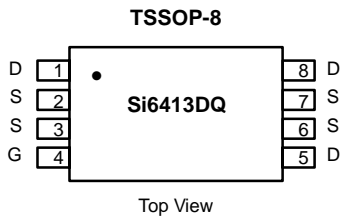
PRODUCT SUMMARY		
V <sub>DS</sub> (V)	r <sub>DS(on)</sub> (Ω)	I <sub>D</sub> (A)
-20	0.010 @ V <sub>GS</sub> = -4.5 V	-8.8
	0.013 @ V <sub>GS</sub> = -2.5 V	-7.6
	0.016 @ V <sub>GS</sub> = -1.8 V	-6.8

### FEATURES

- TrenchFET® Power MOSFET

### APPLICATIONS

- Load Switch
- PA Switch
- Charger Switch



P-Channel MOSFET

ABSOLUTE MAXIMUM RATINGS (T <sub>A</sub> = 25°C UNLESS OTHERWISE NOTED)					
Parameter		Symbol	10 secs	Steady State	Unit
Drain-Source Voltage		V <sub>DS</sub>	-20		V
Gate-Source Voltage		V <sub>GS</sub>	±8		
Continuous Drain Current (T <sub>J</sub> = 150°C) <sup>a</sup>	T <sub>A</sub> = 25°C	I <sub>D</sub>	-8.8	-7.2	A
	T <sub>A</sub> = 70°C		-7.0	-5.7	
Pulsed Drain Current (10 μs Pulse Width)		I <sub>DM</sub>	-30		
Continuous Source Current (Diode Conduction) <sup>a</sup>		I <sub>S</sub>	-1.35	-0.95	W
Maximum Power Dissipation <sup>a</sup>	T <sub>A</sub> = 25°C	P <sub>D</sub>	1.5	1.05	
	T <sub>A</sub> = 70°C		1.0	0.67	
Operating Junction and Storage Temperature Range		T <sub>J</sub> , T <sub>stg</sub>	-55 to 150		°C

THERMAL RESISTANCE RATINGS					
Parameter		Symbol	Typical	Maximum	Unit
Maximum Junction-to-Ambient <sup>a</sup>	t ≤ 10 sec	R <sub>thJA</sub>	60	83	°C/W
	Steady State		100	120	
Maximum Junction-to-Foot	Steady State	R <sub>thJF</sub>	35	45	

Notes

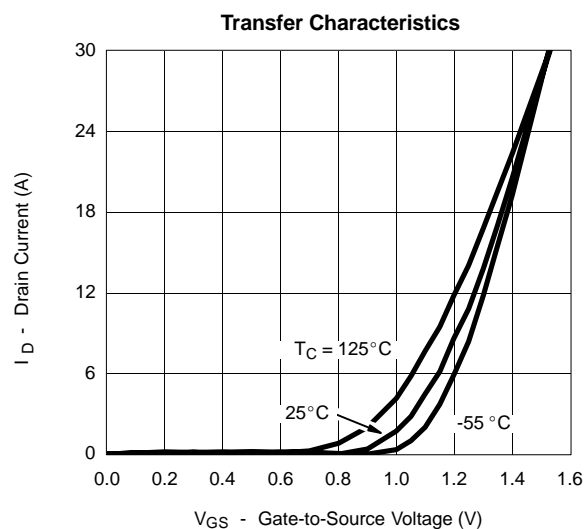
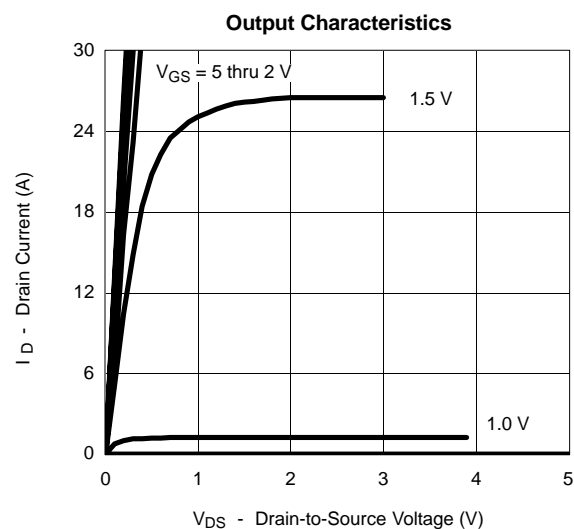
a. Surface Mounted on 1" x 1" FR4 Board.

**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> = -400 μA	-0.40		-0.8	V
Gate-Body Leakage	I <sub>GSS</sub>	V <sub>DS</sub> = 0 V, V <sub>GS</sub> = ± 8 V			± 100	nA
Zero Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> = -16 V, V <sub>GS</sub> = 0 V			-1	μA
		V <sub>DS</sub> = -16 V, V <sub>GS</sub> = 0 V, T <sub>J</sub> = 70 °C			-10	
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	-20			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> = -8.8 A		0.008	0.010	Ω
		V <sub>GS</sub> = -2.5 V, I <sub>D</sub> = -7.6 A		0.010	0.013	
		V <sub>GS</sub> = -1.8 V, I <sub>D</sub> = -6.8 A		0.013	0.016	
Forward Transconductance <sup>a</sup>	g <sub>fs</sub>	V <sub>DS</sub> = -15 V, I <sub>D</sub> = -8.8 A		45		S
Diode Forward Voltage <sup>a</sup>	V <sub>SD</sub>	I <sub>S</sub> = -1.3 A, V <sub>GS</sub> = 0 V		-0.58	-1.1	V
<b>Dynamic<sup>b</sup></b>						
Total Gate Charge	Q <sub>g</sub>	V <sub>DS</sub> = -10 V, V <sub>GS</sub> = -5 V, I <sub>D</sub> = -8.8 A		69	105	nC
Gate-Source Charge	Q <sub>gs</sub>			9.5		
Gate-Drain Charge	Q <sub>gd</sub>			15.5		
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		55	85	ns
Rise Time	t <sub>r</sub>			120	200	
Turn-Off Delay Time	t <sub>d(off)</sub>			305	470	
Fall Time	t <sub>f</sub>			160	250	
Source-Drain Reverse Recovery Time	t <sub>rr</sub>		I <sub>F</sub> = -1.3 A, di/dt = 100 A/μs		90	

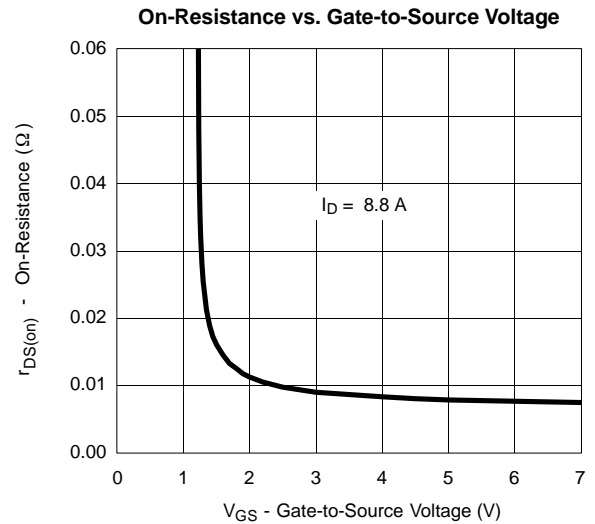
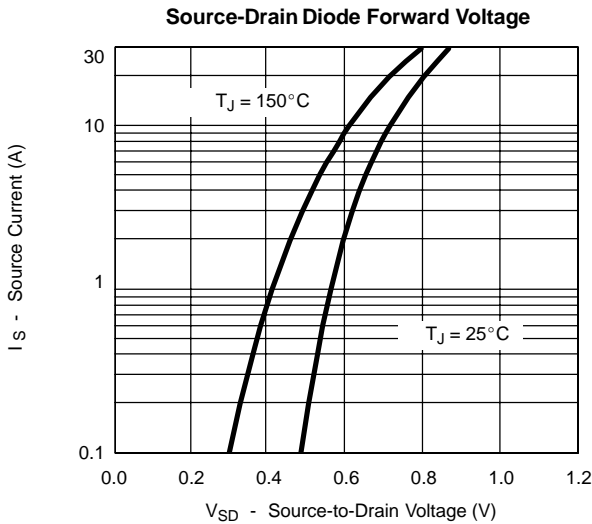
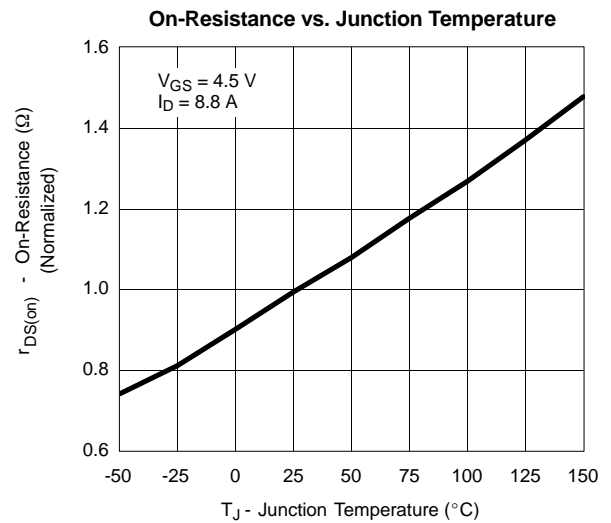
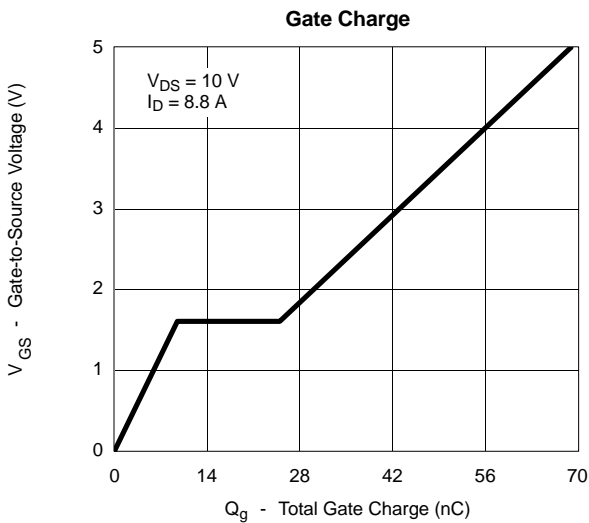
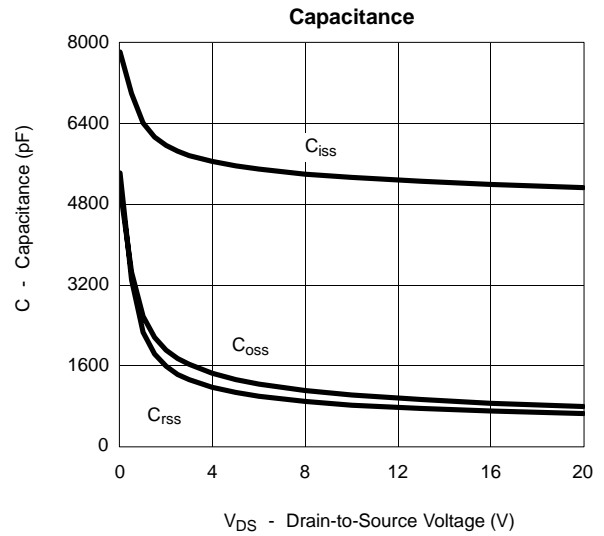
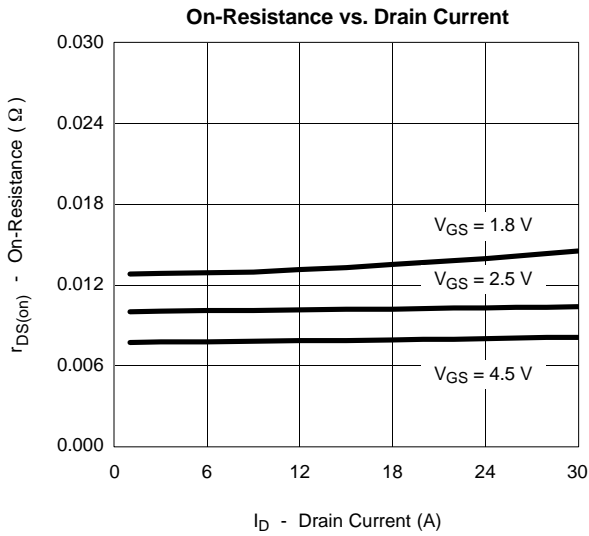
## Notes

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

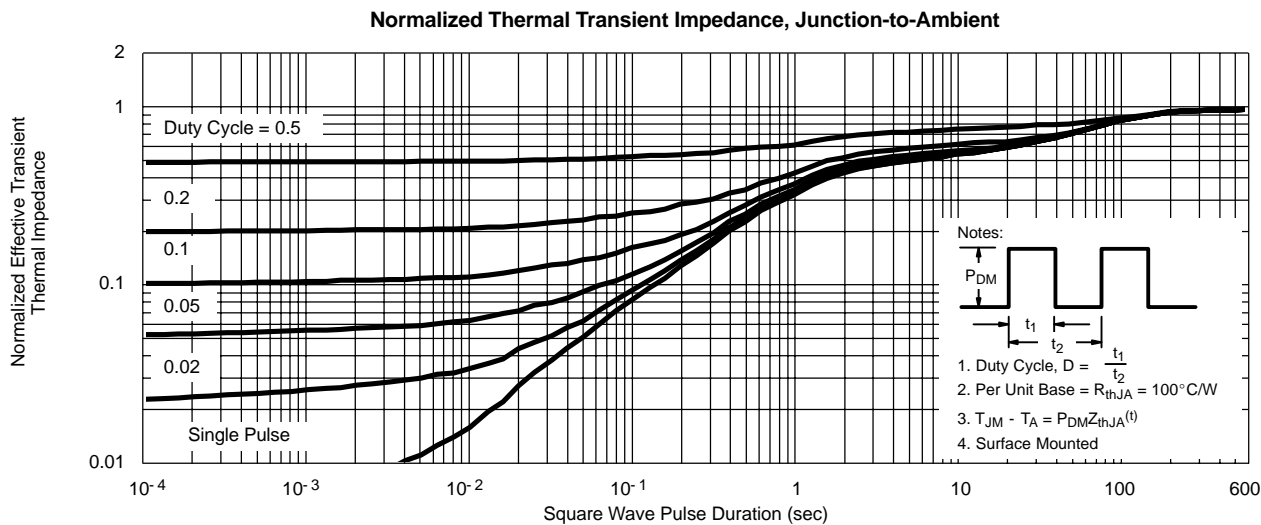
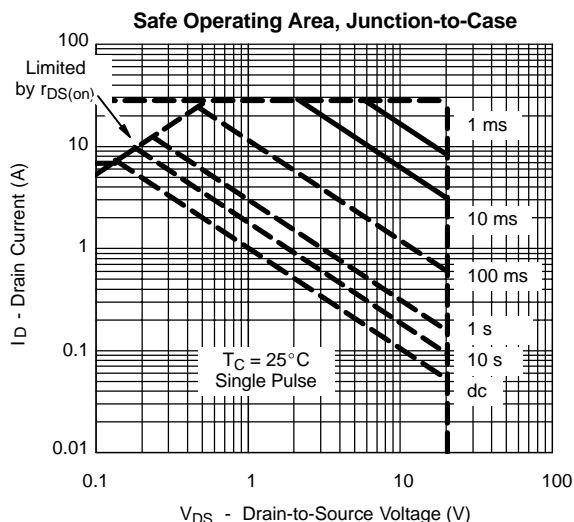
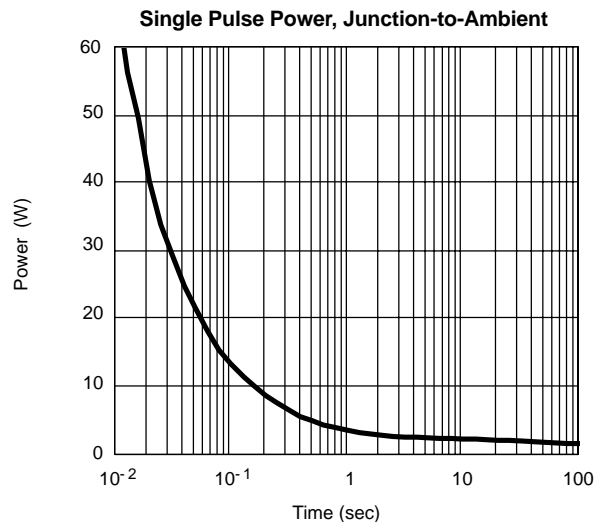
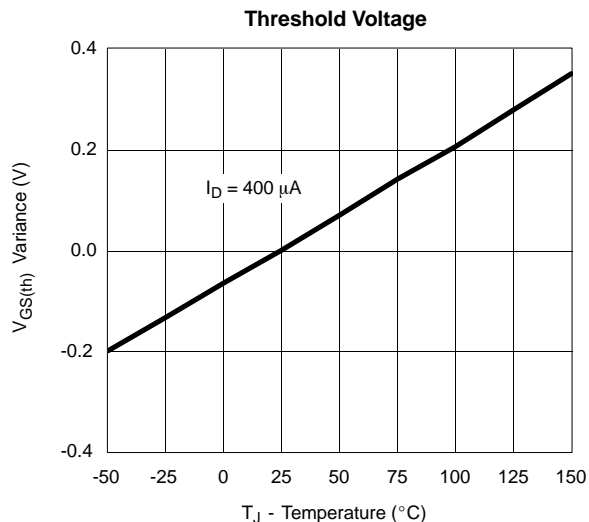
**TYPICAL CHARACTERISTICS (25 °C UNLESS NOTED)**



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