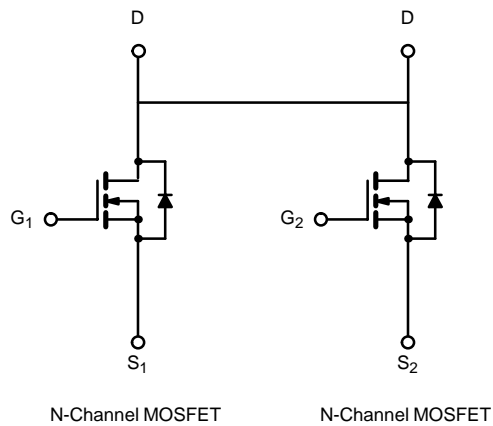
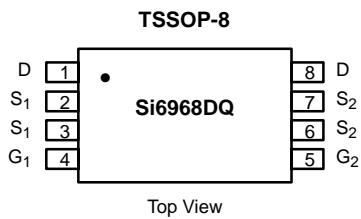




## N-Channel 2.5-V (G-S) Battery Switch

PRODUCT SUMMARY		
V <sub>DS</sub> (V)	R <sub>DS(ON)</sub> (Ω)	I <sub>D</sub> (A)
20	0.022 @ V <sub>GS</sub> = 4.5 V	± 6.5
	0.030 @ V <sub>GS</sub> = 2.5 V	± 5.5

**2.5-V Rated**



ABSOLUTE MAXIMUM RATINGS (T <sub>A</sub> = 25 °C UNLESS OTHERWISE NOTED)			
PARAMETER	SYMBOL	LIMIT	UNIT
Drain-Source Voltage	V <sub>DS</sub>	20	V
Gate-Source Voltage	V <sub>GS</sub>	± 12	
Continuous Drain Current (T <sub>J</sub> = 150 °C) <sup>A, B</sup>	I <sub>D</sub>	T <sub>A</sub> = 25 °C	± 6.4
		T <sub>A</sub> = 70 °C	± 5.1
Pulsed Drain Current	I <sub>DM</sub>	± 30	A
Continuous Source Current (Diode Conduction) <sup>A, B</sup>	I <sub>S</sub>	1.5	
Maximum Power Dissipation <sup>A, B</sup>	P <sub>D</sub>	T <sub>A</sub> = 25 °C	1.5
		T <sub>A</sub> = 70 °C	0.96
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>	83	°C/W
	Steady State	R <sub>thJA</sub>	85	

Notes  
A. Surface Mounted on FR4 Board.  
B. t ≤ 10 sec.

Updates to this data sheet may be obtained via facsimile by calling Siliconix FaxBack, 1-408-970-5600. Please request FaxBack document #70757.


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

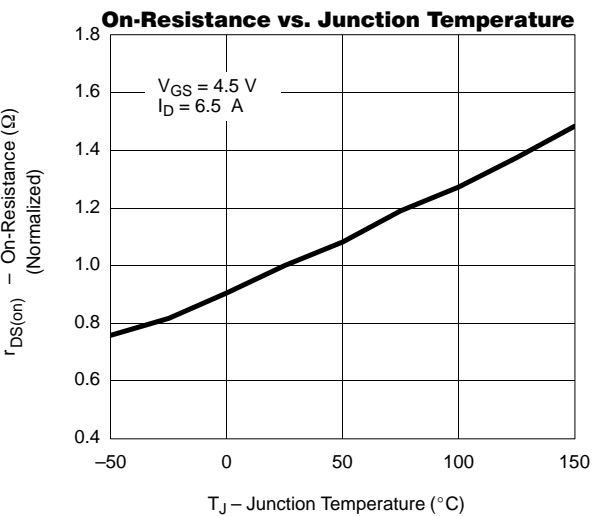
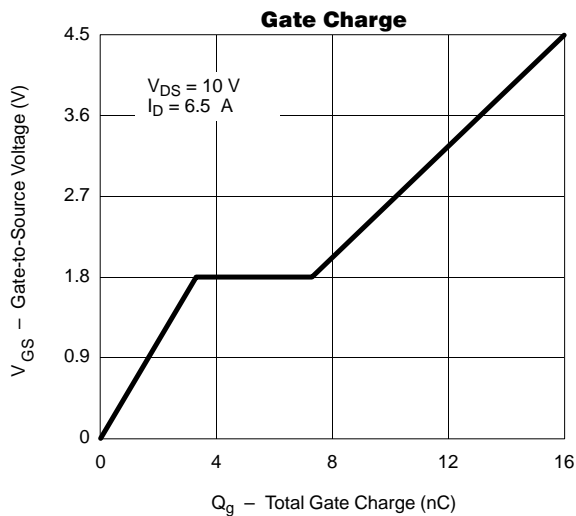
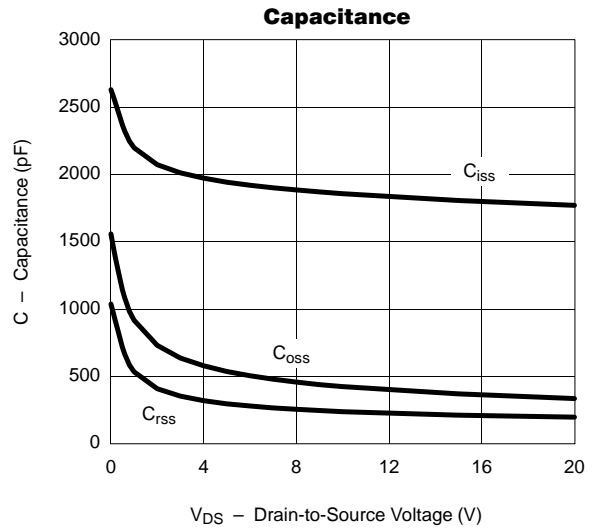
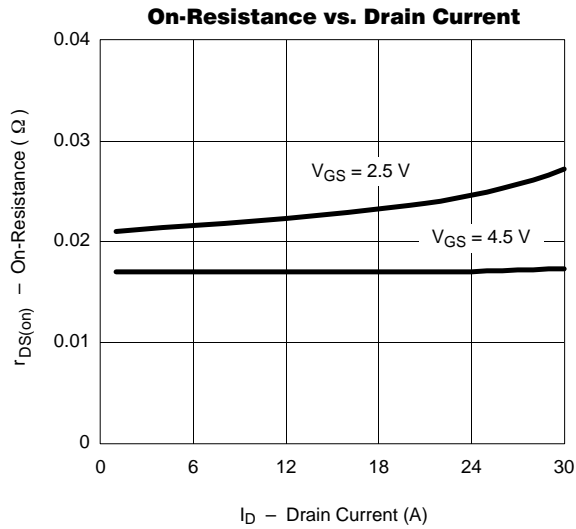
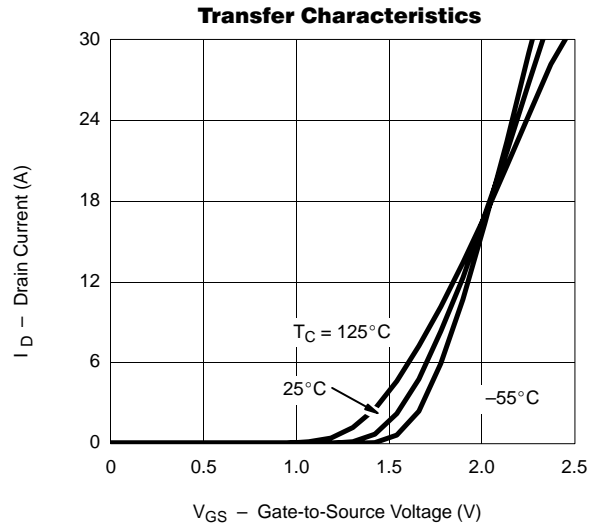
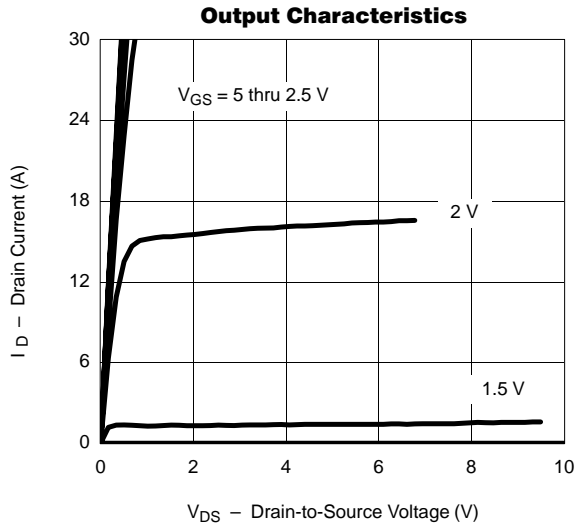
PARAMETER	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNIT
<b>STATIC</b>						
Gate Threshold Voltage	V <sub>GS(th)</sub>	V <sub>DS</sub> = V <sub>GS</sub> , I <sub>D</sub> = 250 μA	0.6			V
Gate-Body Leakage	I <sub>GSS</sub>	V <sub>DS</sub> = 0 V, V <sub>GS</sub> = ±12 V			±100	nA
Zero Gate Voltage Drain Current	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	30			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> = 6.5 A		0.017	0.022	Ω
		V <sub>GS</sub> = 2.5 V, I <sub>D</sub> = 5.5 A		0.022	0.030	
Forward Transconductance <sup>A</sup>	g <sub>fs</sub>	V <sub>DS</sub> = 10 V, I <sub>D</sub> = 6.5 A		30		S
Diode Forward Voltage <sup>A</sup>	V <sub>SD</sub>	I <sub>S</sub> = 1.5 A, V <sub>GS</sub> = 0 V		0.66	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> = 10 V, I <sub>D</sub> = 6.5 A		16	30	nC
Gate-Source Charge	Q <sub>gs</sub>			3.4		
Gate-Drain Charge	Q <sub>gd</sub>			4.0		
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		20	40	ns
Rise Time	t <sub>r</sub>			48	80	
Turn-Off Delay Time	t <sub>d(off)</sub>			90	180	
Fall Time	t <sub>f</sub>			55	110	
Source-Drain Reverse Recovery Time	t <sub>rr</sub>	I <sub>F</sub> = 1.5 A, di/dt = 100 A/μs		40	70	

## 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 OTHERWISE NOTED)**





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

