



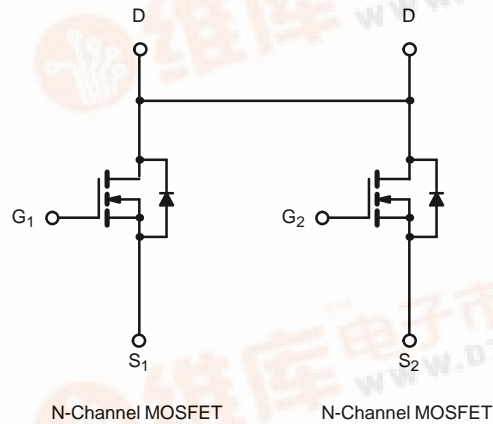
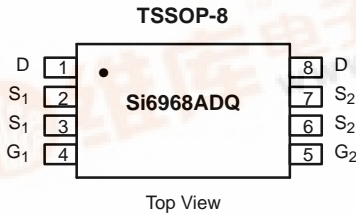
New Product

Si6968ADQ
Vishay Siliconix

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

2.5-V Rated

PRODUCT SUMMARY		
V _{DS} (V)	r _{DS(on)} (Ω)	I _D (A)
20	0.022 @ V _{GS} = 4.5 V	±6.2
	0.030 @ V _{GS} = 2.5 V	±5.3



ABSOLUTE MAXIMUM RATINGS (T _A = 25 °C UNLESS OTHERWISE NOTED)					
Parameter		Symbol	10 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	±6.2	±5.1	A
	T _A = 70 °C		±5.3	±3.4	
Pulsed Drain Current (10 μs Pulse Width)		I _{DM}	±30		
Continuous Source Current (Diode Conduction) ^a		I _S	1.5	1.0	W
Maximum Power Dissipation ^a	T _A = 25 °C	P _D	1.5	1.0	
	T _A = 70 °C		0.96	0.64	
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 ≤ 10 sec	R _{thJA}	72	83	°C/W
	Steady State		100	120	
Maximum Junction-to-Foot	Steady State	R _{thJF}	55	70	

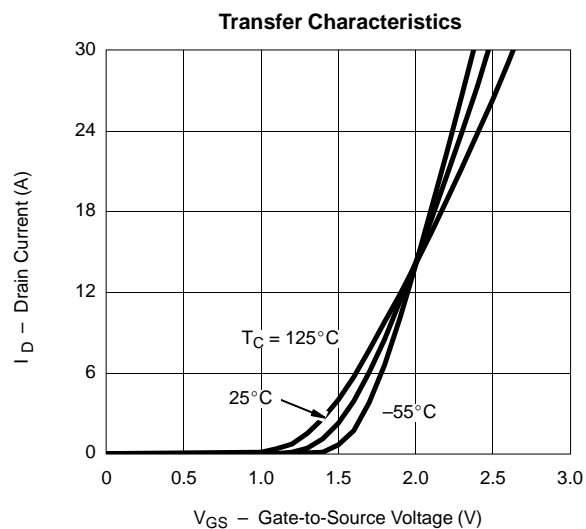
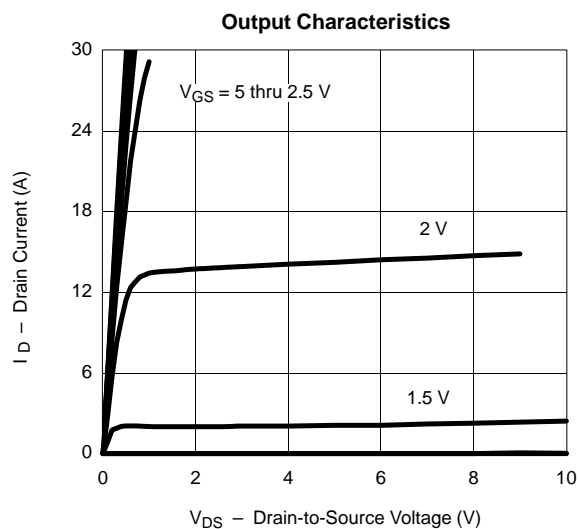
Notes:
a. Surface Mounted on 1" x 1" FR4 Board.


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	0.6			V
Gate-Body Leakage	I _{GSS}	V _{DS} = 0 V, V _{GS} = ± 12 V			± 100	nA
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = 16 V, V _{GS} = 0 V			1	μA
		V _{DS} = 16 V, V _{GS} = 0 V, T _J = 85 °C			15	
On-State Drain Current ^a	I _{D(on)}	V _{DS} ≥ 5 V, V _{GS} = 4.5 V	30			A
Drain-Source On-State Resistance ^a	r _{DS(on)}	V _{GS} = 4.5 V, I _D = 6.2 A	0.014	0.018	0.022	Ω
		V _{GS} = 2.5 V, I _D = 5.3 A	0.018	0.024	0.030	
Forward Transconductance ^a	g _{fs}	V _{DS} = 10 V, I _D = 6.2 A		25		S
Diode Forward Voltage ^a	V _{SD}	I _S = 6.2 A, V _{GS} = 0 V		0.89	1.2	V
Dynamic^b						
Total Gate Charge	Q _g	V _{DS} = 10 V, V _{GS} = 4.5 V, I _D = 6.2 A		13.5	20	nC
Gate-Source Charge	Q _{gs}			2		
Gate-Drain Charge	Q _{gd}			3.7		
Turn-On Delay Time	t _{d(on)}	V _{DD} = 10 V, R _L = 10 Ω I _D ≅ 1 A, V _{GEN} = 4.5 V, R _G = 6 Ω		18	30	ns
Rise Time	t _r			25	50	
Turn-Off Delay Time	t _{d(off)}			50	100	
Fall Time	t _f			25	50	
Source-Drain Reverse Recovery Time	t _{rr}		I _F = 6.2 A, di/dt = 100 A/μs		40	

Notes

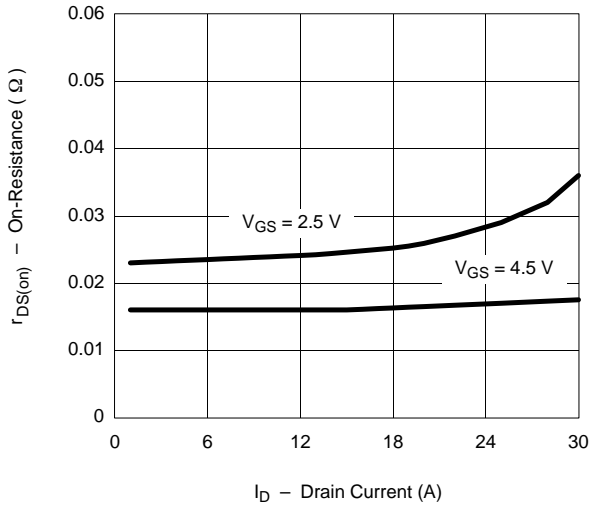
- Pulse test; pulse width ≤ 300 μs, duty cycle ≤ 2%.
- Guaranteed by design, not subject to production testing.

TYPICAL CHARACTERISTICS (25 °C UNLESS NOTED)


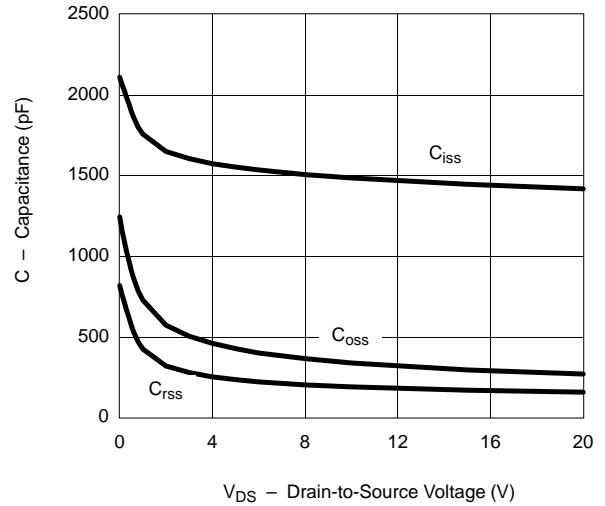


TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)

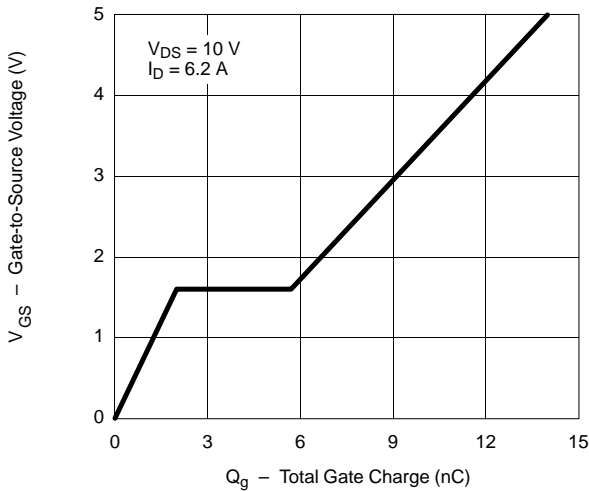
On-Resistance vs. Drain Current



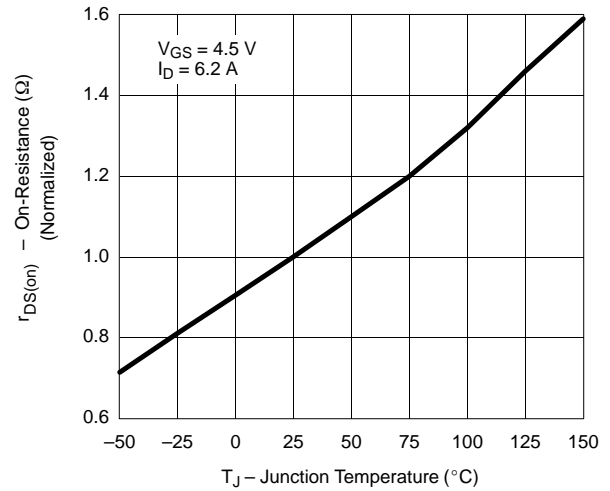
Capacitance



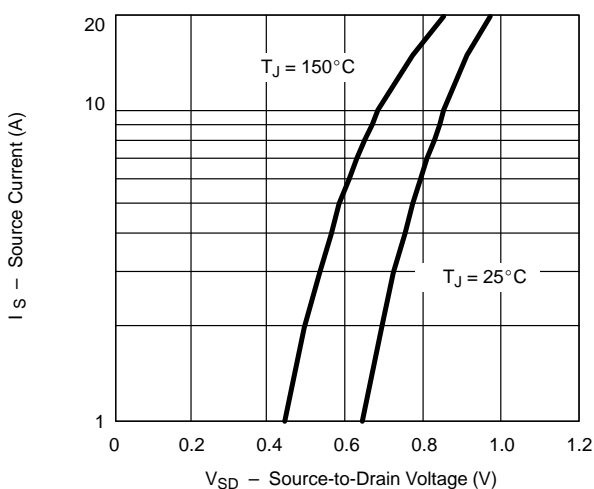
Gate Charge



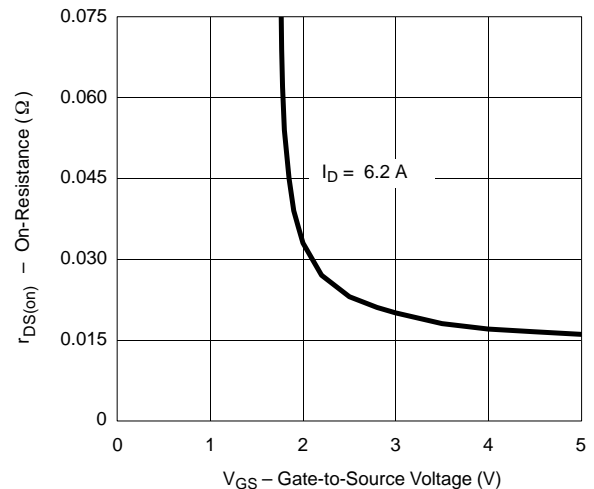
On-Resistance vs. Junction Temperature



Source-Drain Diode Forward Voltage



On-Resistance vs. Gate-to-Source Voltage





TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)

