



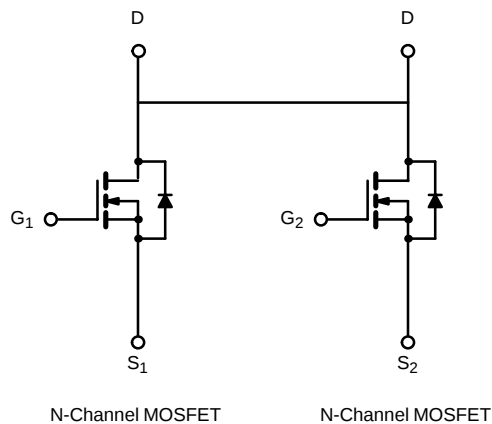
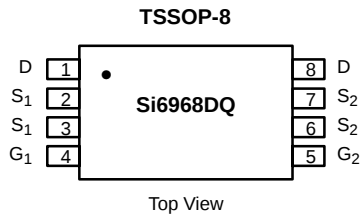
N-Channel 2.5-V (G-S) Battery Switch

PRODUCT SUMMARY

V _{DS} (V)	R _{DS(ON)} (Ω)	I _D (A)
20	0.022 @ V _{GS} = 4.5 V	± 6.5
	0.030 @ V _{GS} = 2.5 V	± 5.5

2.5-V Rated

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ABSOLUTE MAXIMUM RATINGS (T_A = 25 °C UNLESS OTHERWISE NOTED)

PARAMETER	SYMBOL	LIMIT	UNIT
Drain-Source Voltage	V _{DS}	20	V
Gate-Source Voltage	V _{GS}	± 12	
Continuous Drain Current (T _J = 150 °C) ^{A, B}	I _D	± 6.4	A
		± 5.1	
Pulsed Drain Current	I _{DM}	± 30	
Continuous Source Current (Diode Conduction) ^{A, B}	I _S	1.5	
Maximum Power Dissipation ^{A, B}	P _D	1.5	W
		0.96	
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	R _{thJA}		83	°C/W
	R _{thJA}	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 ($T_J = 25^\circ\text{C}$ UNLESS OTHERWISE NOTED)

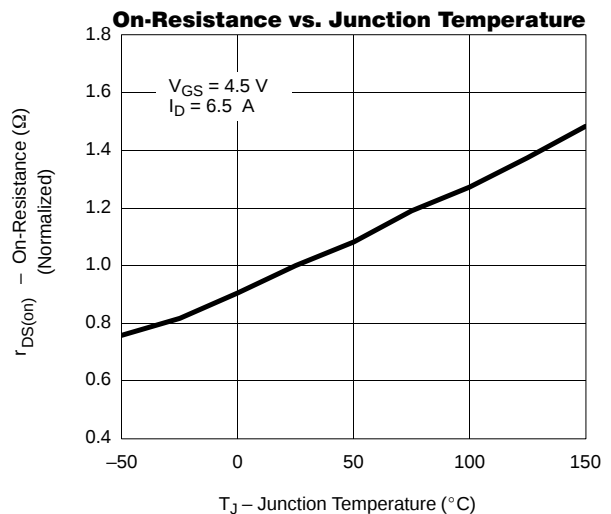
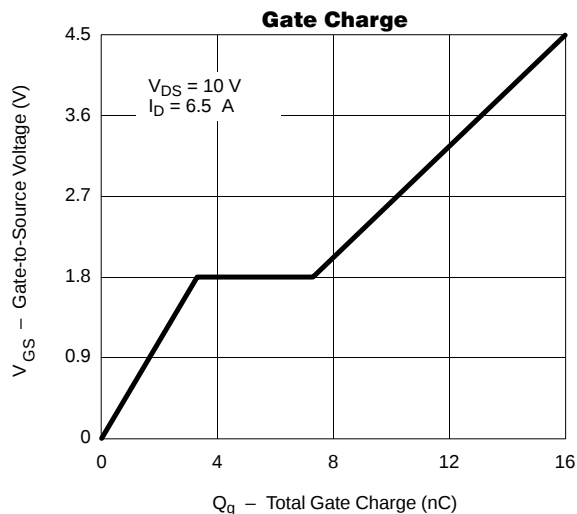
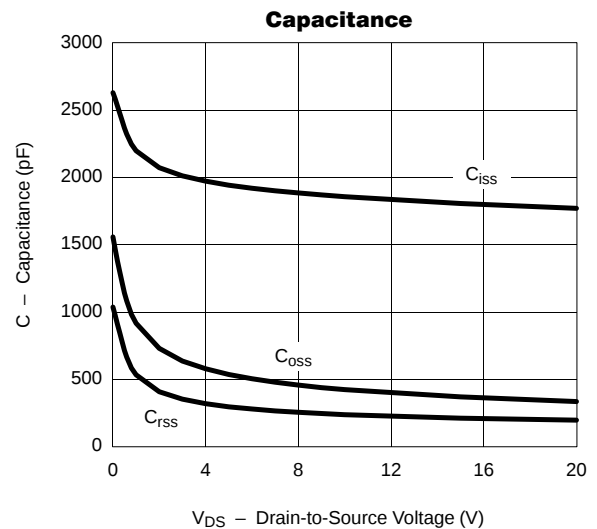
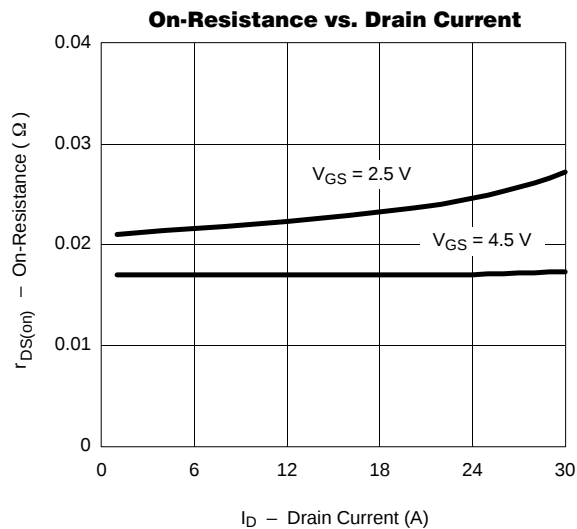
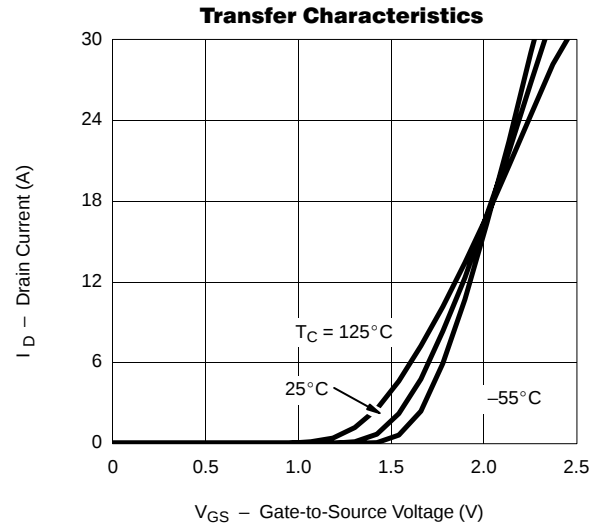
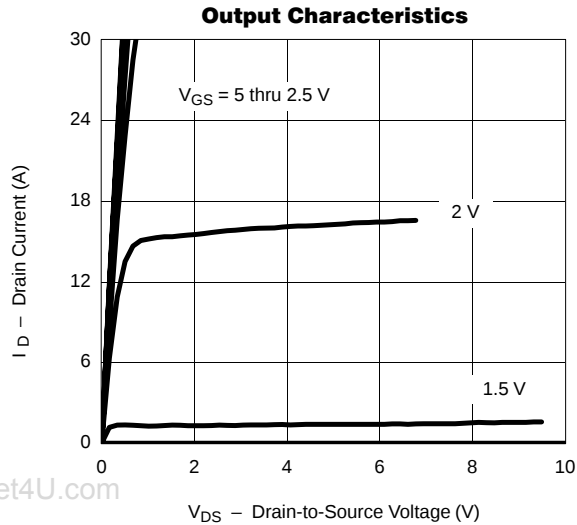
PARAMETER	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNIT
STATIC						
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\ \mu\text{A}$	0.6			V
Gate-Body Leakage	I_{GSS}	$V_{DS} = 0\ \text{V}, V_{GS} = \pm 12\ \text{V}$			± 100	nA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 20\ \text{V}, V_{GS} = 0\ \text{V}$			1	μA
		$V_{DS} = 20\ \text{V}, V_{GS} = 0\ \text{V}, T_J = 70^\circ\text{C}$			5	
On-State Drain Current ^A	$I_{D(on)}$	$V_{DS} \geq 5\ \text{V}, V_{GS} = 4.5\ \text{V}$	30			A
Drain-Source On-State Resistance ^A	$r_{DS(on)}$	$V_{GS} = 4.5\ \text{V}, I_D = 6.5\ \text{A}$		0.017	0.022	Ω
		$V_{GS} = 2.5\ \text{V}, I_D = 5.5\ \text{A}$		0.022	0.030	
Forward Transconductance ^A	g_{fs}	$V_{DS} = 10\ \text{V}, I_D = 6.5\ \text{A}$		30		S
Diode Forward Voltage ^A	V_{SD}	$I_S = 1.5\ \text{A}, V_{GS} = 0\ \text{V}$		0.66	1.2	V
DYNAMIC^B						
Total Gate Charge	Q_g	$V_{DS} = 10\ \text{V}, V_{GS} = 10\ \text{V}, I_D = 6.5\ \text{A}$		16	30	nC
Gate-Source Charge	Q_{gs}			3.4		
Gate-Drain Charge	Q_{gd}			4.0		
Turn-On Delay Time	$t_{d(on)}$	$V_{DD} = 10\ \text{V}, R_L = 10\ \Omega$ $I_D \approx 1\ \text{A}, V_{GEN} = 4.5\ \text{V}, R_G = 6\ \Omega$		20	40	ns
Rise Time	t_r			48	80	
Turn-Off Delay Time	$t_{d(off)}$			90	180	
Fall Time	t_f			55	110	
Source-Drain Reverse Recovery Time	t_{rr}	$I_F = 1.5\ \text{A}, di/dt = 100\ \text{A}/\mu\text{s}$		40	70	

Notes

- A. Pulse test; pulse width $\leq 300\ \mu\text{s}$, duty cycle $\leq 2\%$.
 B. Guaranteed by design, not subject to production testing.



TYPICAL CHARACTERISTICS (25°C UNLESS OTHERWISE NOTED)



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