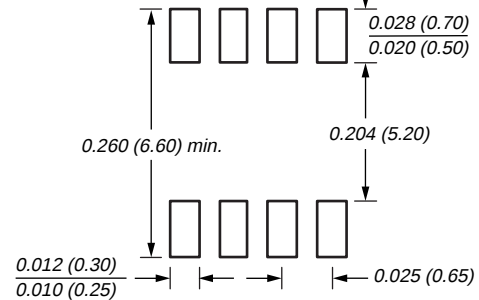
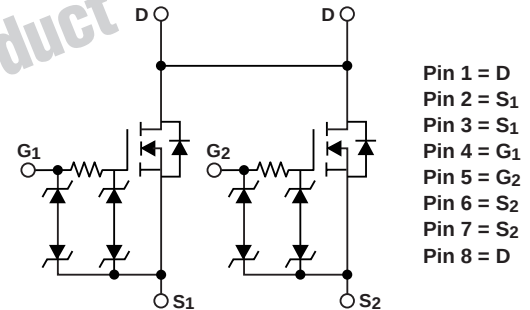
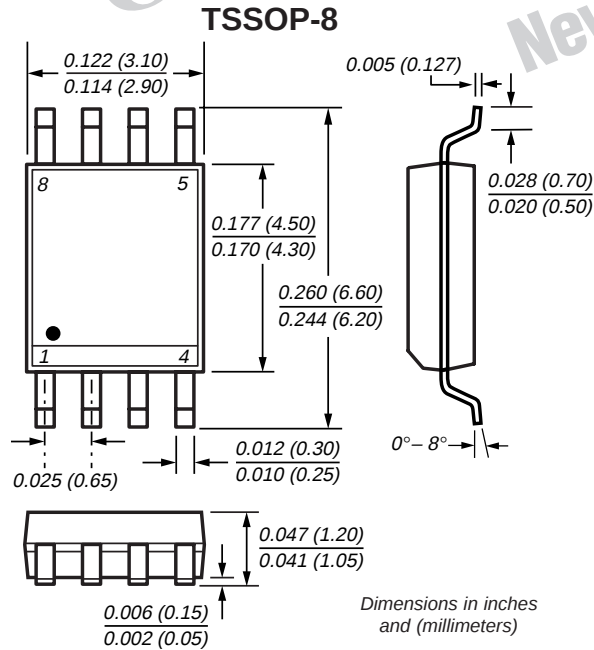


Battery Switch, ESD Protected Common-Drain Dual N-Channel MOSFET

Low $V_{GS(th)}$ V_{DS} 20V $R_{DS(ON)}$ 22m Ω I_D 6.5A



Mounting Pad Layout

Mechanical Data

Case: TSSOP-8 Package

Terminals: Leads solderable per MIL-STD-750, Method 2026

High temperature soldering guaranteed:
 250°C/10 seconds at terminals

Mounting Position: Any

Weight: 0.5g

Features

- Advanced Trench Process Technology
- High Density Cell Design for Ultra Low On-Resistance
- Specially Designed for Li-ion battery packs use
- Designed for battery-switch applications

Maximum Ratings and Thermal Characteristics (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) ⁽¹⁾	I_D	6.5	A
Pulsed Drain Current	I_{DM}	30	A
Maximum Power Dissipation ⁽¹⁾	P_D	1.5 0.96	W
Operating Junction and Storage Temperature Range	T _J , T _{stg}	-55 to 150	°C
Maximum Junction-to-Ambient ⁽¹⁾ Thermal Resistance	R θ JA	83	°C/W

Notes: (1) Surface mounted on FR4 board, t ≤ 10 sec.

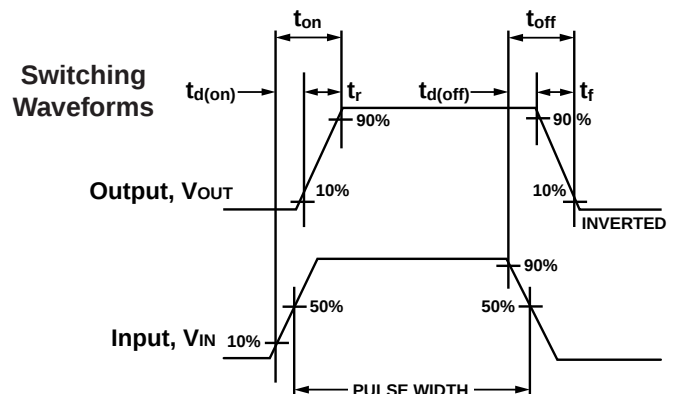
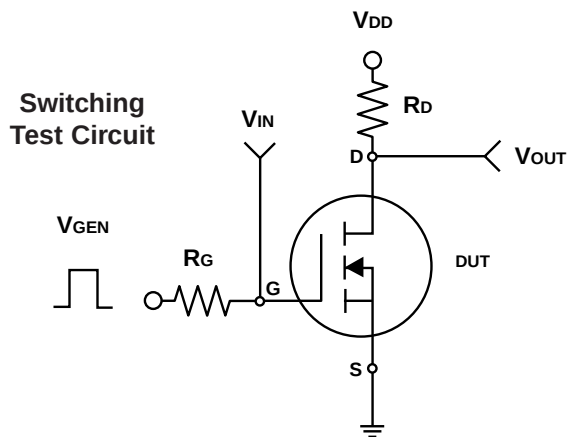
Battery Switch, ESD Protected Common-Drain Dual N-Channel MOSFET

Electrical Characteristics (T_J = 25°C unless otherwise noted)

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Static						
Drain-Source Breakdown Voltage	BV _{DSS}	V _{GS} = 0V, I _D = 250μA	20	—	—	V
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = 250μA	0.60	0.85	—	V
Gate Body Leakage	I _{GSS}	V _{GS} = ± 12V, V _{DS} = 0V	—	—	±10	μA
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = 20V, V _{GS} = 0V	—	—	1	μA
On-State Drain Current ⁽¹⁾	I _{D(on)}	V _{DS} ≥ 5V, V _{GS} = 4.5V	30	—	—	A
Drain-Source On-State Resistance ⁽¹⁾	R _{DS(on)}	V _{GS} = 4.5V, I _D = 6.5A	—	17.5	22	mΩ
		V _{GS} = 2.5V, I _D = 5.5A	—	22	30	
Forward Transconductance ⁽¹⁾	g _{fs}	V _{DS} = 10V, I _D = 6.5A	—	30	—	S
Dynamic						
Total Gate Charge	Q _g	V _{DS} = 10V, V _{GS} = 4.5V I _D = 6.5A	—	15.5	30	nC
Gate-Source Charge	Q _{gs}		—	2.0	—	
Gate-Drain Charge	Q _{gd}		—	3.5	—	
Turn-On Delay Time	t _{d(on)}	V _{DD} = 10V, R _L = 10Ω I _D = 1A, V _{GEN} = 4.5V R _G = 6Ω	—	0.45	0.60	μs
Turn-On Rise Time	t _r		—	0.65	0.85	
Turn-Off Delay Time	t _{d(off)}		—	4.5	6.0	
Fall Time	t _f		—	1.7	2.2	
Input Capacitance ⁽¹⁾	C _{iss}	V _{DS} = 10V, V _{GS} = 0V f = 1.0 MHz	—	1360	—	pF
Output Capacitance ⁽¹⁾	C _{oss}		—	220	—	
Reverse Transfer Capacitance ⁽¹⁾	C _{rss}		—	130	—	
Source-Drain Diode						
Maximum Diode Forward Current	I _S	—	—	—	1.5	A
Diode Forward Voltage	V _{SD}	I _S = 1.5A, V _{GS} = 0V	—	0.61	1.2	V

Notes: (1) Pulse test; pulse width ≤ 300 μs, duty cycle ≤ 2%

(2) For MOSFET portion only



Ratings and Characteristic Curves ($T_A = 25^\circ\text{C}$ unless otherwise noted)

Battery Switch, ESD Protected Common-Drain Dual N-Channel MOSFET

Fig. 1 – Output Characteristics

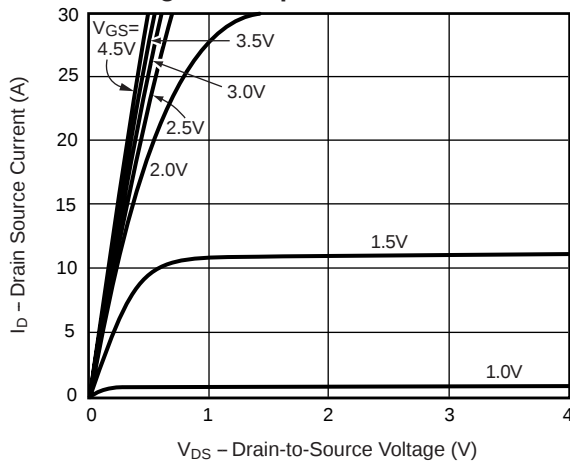
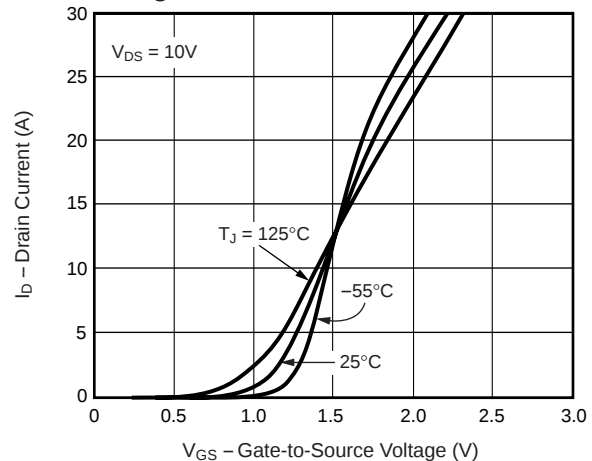
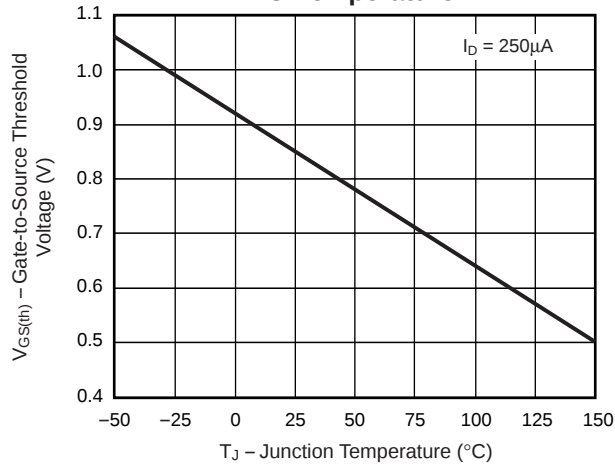


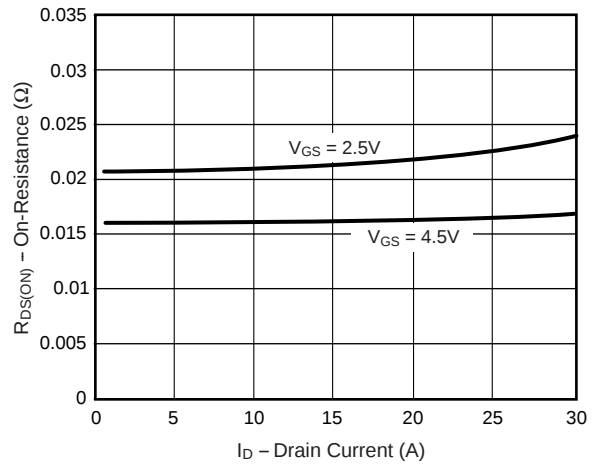
Fig. 2 – Transfer Characteristics



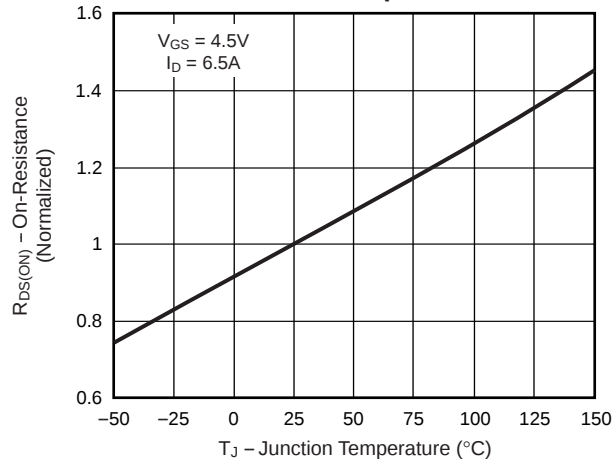
**Fig. 3 – Threshold Voltage
vs. Temperature**



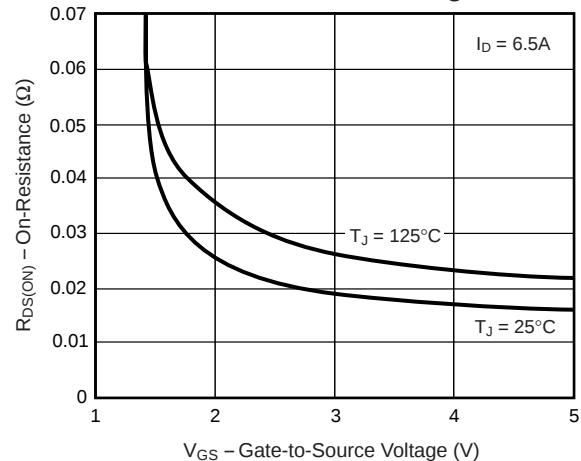
**Fig. 4 – On-Resistance vs.
Drain Current**



**Fig. 5 – On-Resistance vs.
Junction Temperature**



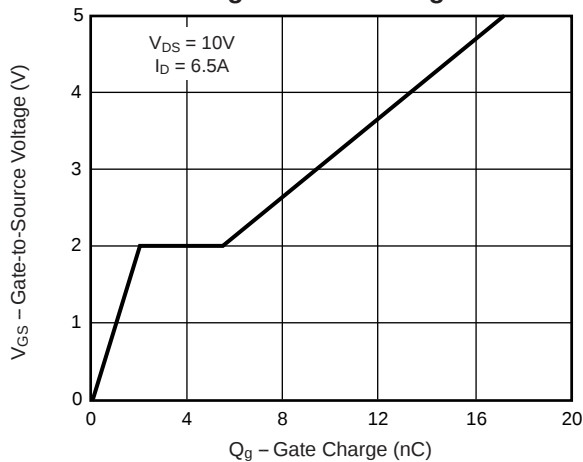
**Fig. 6 – On-Resistance vs.
Gate-to-Source Voltage**



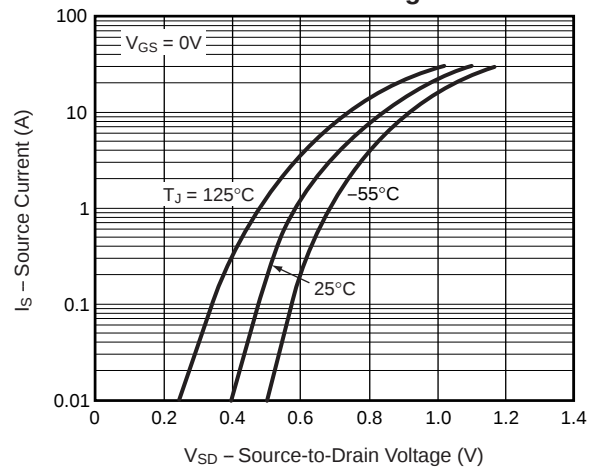
**Ratings and
Characteristic Curves** ($T_A = 25^\circ\text{C}$ unless otherwise noted)

**Battery Switch, ESD Protected
Common-Drain Dual N-Channel MOSFET**

Fig. 7 – Gate Charge



**Fig. 8 – Source-Drain Diode
Forward Voltage**



**Fig. 9 – Transient Thermal
Impedance**

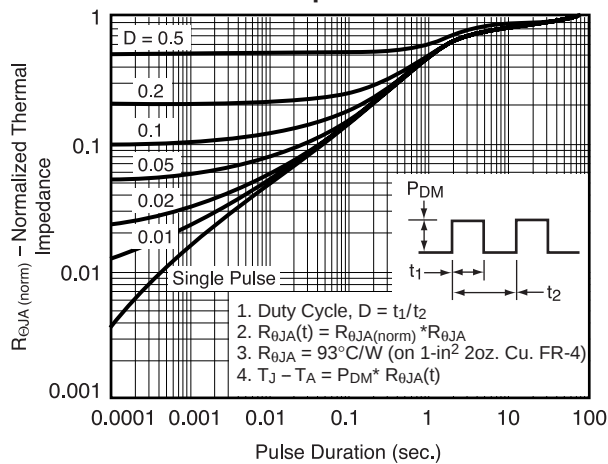


Fig. 10 – Power vs. Pulse Duration

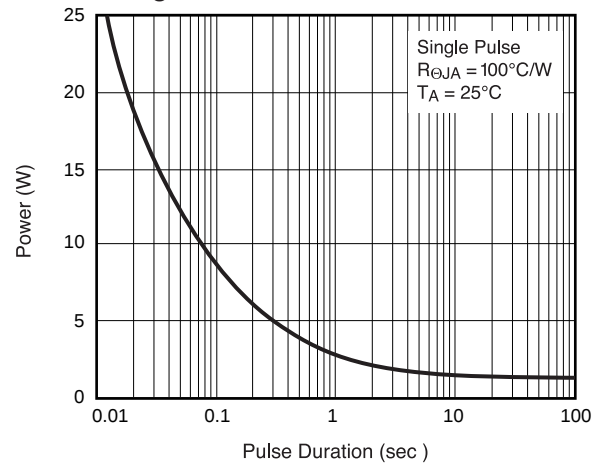


Fig. 11 – Maximum Safe Operating Area

