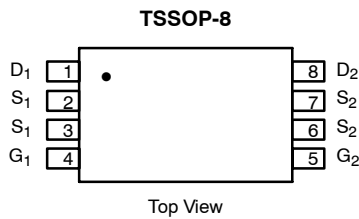


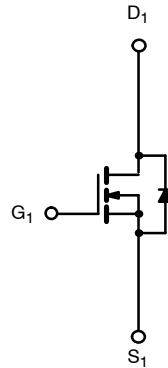
N-Channel 2.5-V (G-S) Battery Switch

TrenchFET®
Power MOSFETS
2.5-V Rated

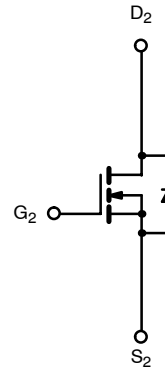
PRODUCT SUMMARY		
V_{DS} (V)	$r_{DS(on)}$ (Ω)	I_D (A)
30	0.053 @ $V_{GS} = 10$ V	3.4
	0.075 @ $V_{GS} = 4.5$ V	2.9



Ordering Information: Si6954ADQ-T1



N-Channel MOSFET



N-Channel MOSFET

ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ UNLESS OTHERWISE NOTED)					
Parameter	Symbol	10 secs	Steady State	Unit	
Drain-Source Voltage	V_{DS}	30		V	
Gate-Source Voltage	V_{GS}	± 20			
Continuous Drain Current ($T_J = 150^\circ\text{C}$) ^a	I_D	$T_A = 25^\circ\text{C}$	3.4	3.1	A
		$T_A = 70^\circ\text{C}$	2.7	2.5	
Pulsed Drain Current (10 μs Pulse Width)	I_{DM}	20			
Continuous Source Current (Diode Conduction) ^a	I_S	0.83	0.69	W	
Maximum Power Dissipation ^a	P_D	$T_A = 25^\circ\text{C}$	1.0		0.83
		$T_A = 70^\circ\text{C}$	0.96		0.53
Operating Junction and Storage Temperature Range	T_J, T_{stg}	-55 to 150		$^\circ\text{C}$	

THERMAL RESISTANCE RATINGS					
Parameter	Symbol	Typical	Maximum	Unit	
Maximum Junction-to-Ambient ^a	R_{thJA}	$t \leq 10$ sec	90	125	$^\circ\text{C/W}$
		Steady State	126	150	
Maximum Junction-to-Foot (Drain)	R_{thJF}	65	80		

Notes

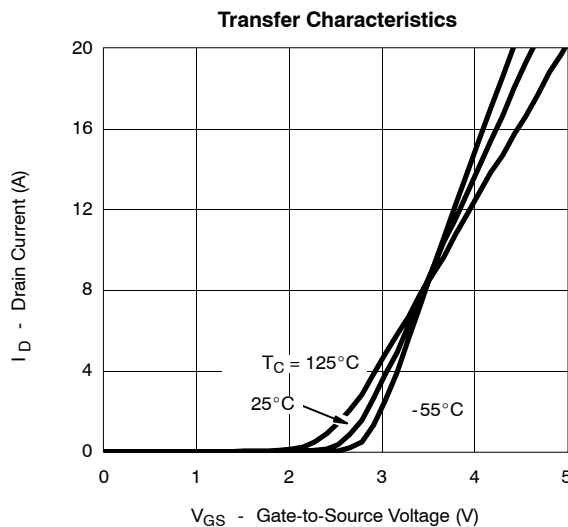
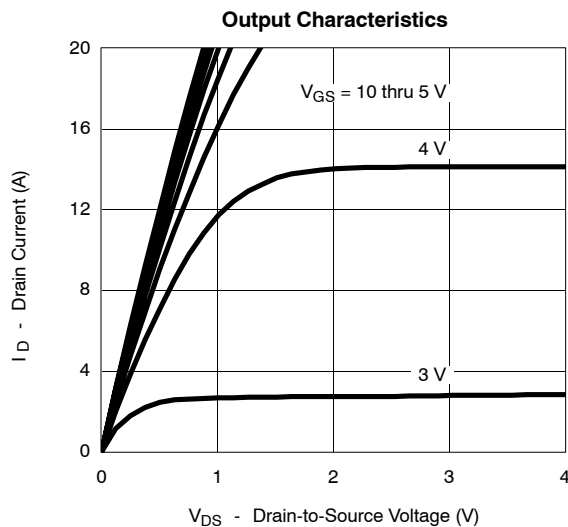
a. Surface Mounted on 1" x 1" FR4 Board.

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	1			V
Gate-Body Leakage	I _{GSS}	V _{DS} = 0 V, V _{GS} = ±20 V			100	nA
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = 30 V, V _{GS} = 0 V			1	μA
		V _{DS} = 30 V, V _{GS} = 0 V, T _J = 55 °C			10	
On-State Drain Current ^a	I _{D(on)}	V _{DS} ≥ 5 V, V _{GS} = 10 V	20			A
Drain-Source On-State Resistance ^a	r _{DS(on)}	V _{GS} = 10 V, I _D = 3.4 A		0.044	0.053	Ω
		V _{GS} = 4.5 V, I _D = 2.9 A		0.062	0.075	
Forward Transconductance ^a	g _{fs}	V _{DS} = 15 V, I _D = 3.4 A		10		S
Diode Forward Voltage ^a	V _{SD}	I _S = 0.83 A, V _{GS} = 0 V		0.8	1.2	V
Dynamic^b						
Total Gate Charge	Q _g	V _{DS} = 10 V, V _{GS} = 10 V, I _D = 3.4 A		8	16	nC
Gate-Source Charge	Q _{gs}			1.4		
Gate-Drain Charge	Q _{gd}			1.2		
Turn-On Delay Time	t _{d(on)}	V _{DD} = 10 V, R _L = 10 Ω I _D ≅ 1 A, V _{GEN} = 10 V, R _G = 6 Ω		12	20	ns
Rise Time	t _r			10	20	
Turn-Off Delay Time	t _{d(off)}			23	45	
Fall Time	t _f			8	15	
Source-Drain Reverse Recovery Time	t _{rr}	I _F = 0.83 A, di/dt = 100 A/μs		25	40	

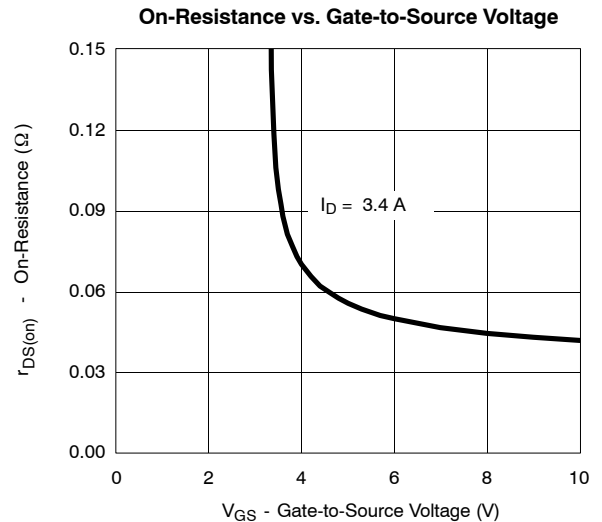
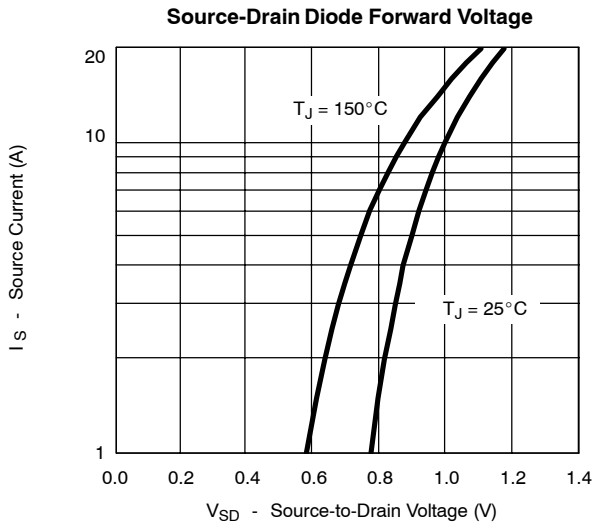
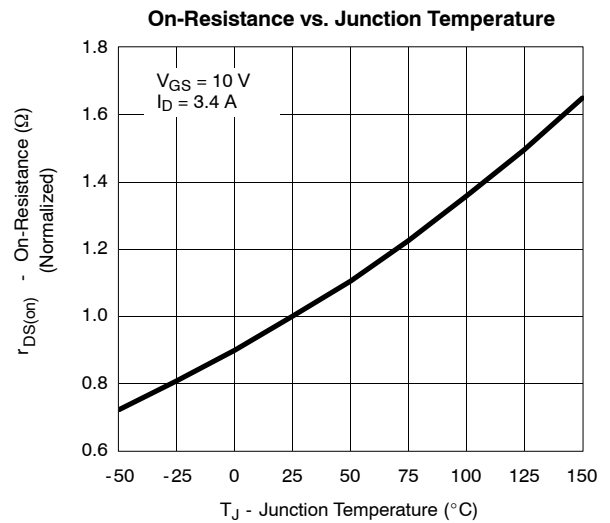
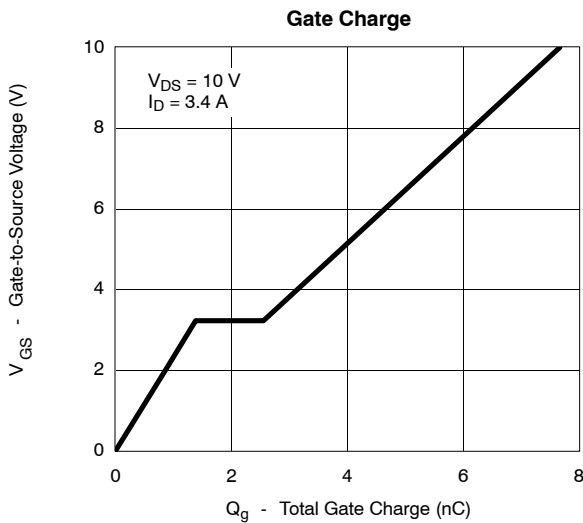
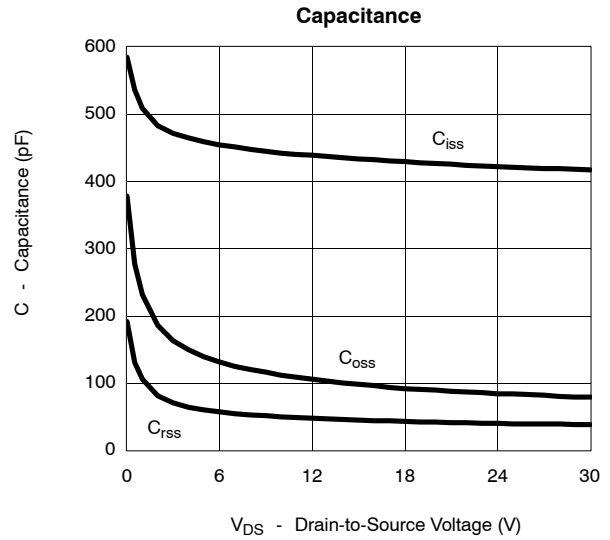
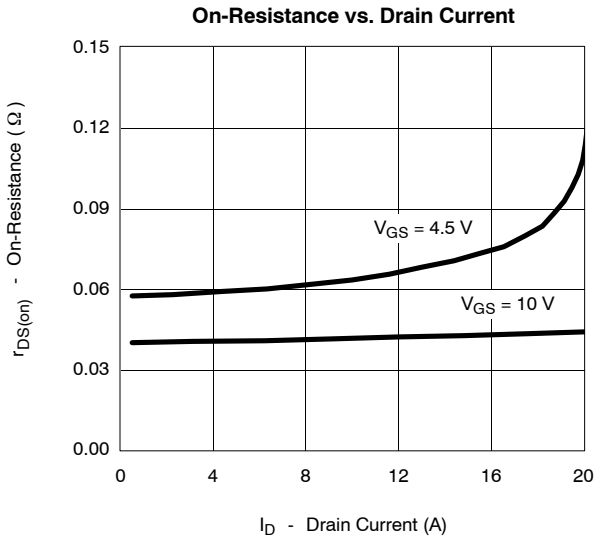
Notes

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

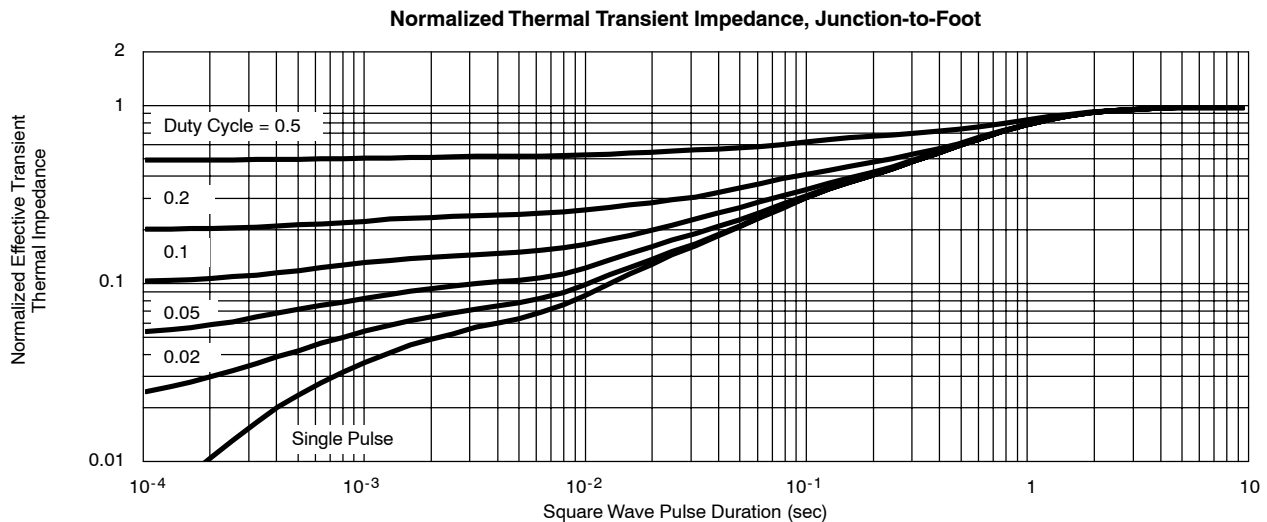
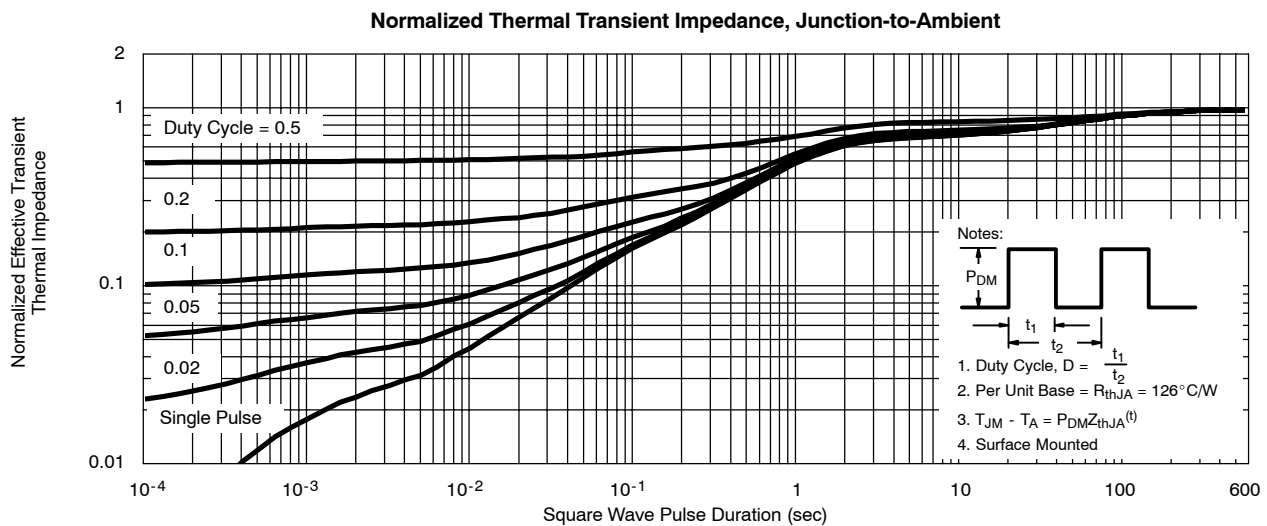
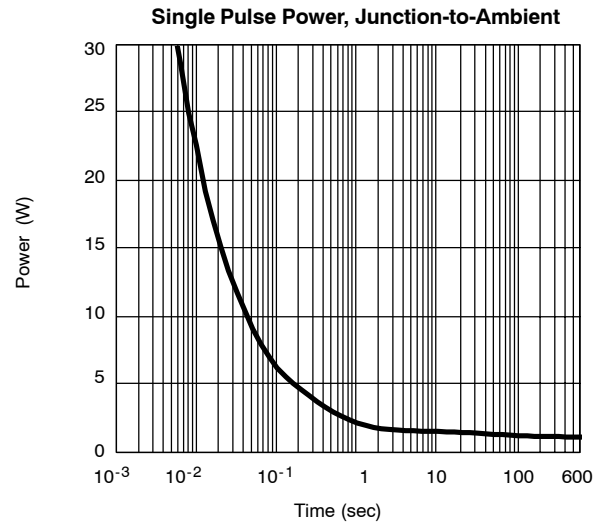
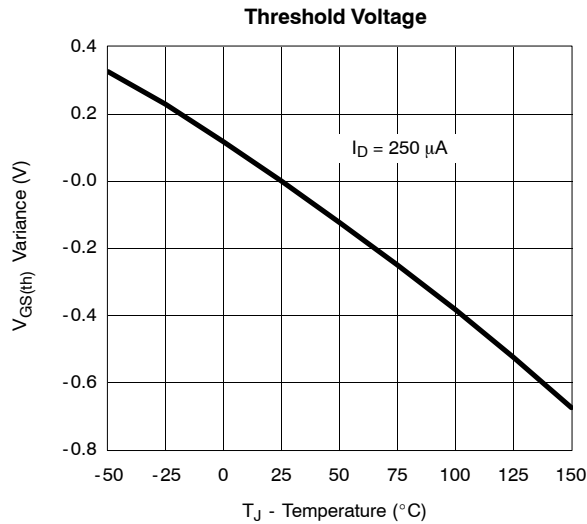
TYPICAL CHARACTERISTICS (25 °C UNLESS NOTED)



TYPICAL CHARACTERISTICS (25 °C UNLESS NOTED)



TYPICAL CHARACTERISTICS (25 °C UNLESS NOTED)





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