



Dual N-Channel 2.5-V (G-S) MOSFET Common Drain, ESD Protection

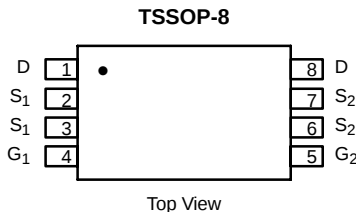
PRODUCT SUMMARY

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

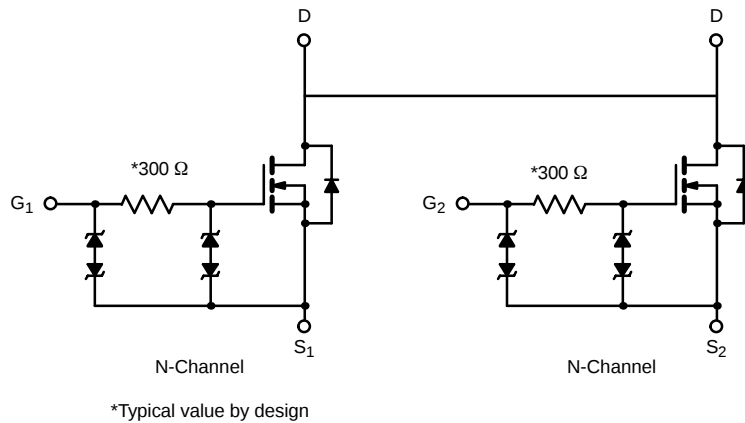
FEATURES

- TrenchFET® Power MOSFET
- ESD Protected: 3000 V

www.DataSheet4U.com



Ordering Information:
Si6968BEDQ-T1 (with Tape and Reel)



ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ 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	6.5	5.2	A
	T _A = 70°C		5.5	3.5	
Pulsed Drain Current		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	Typ	Max	Unit
Maximum Junction-to-Ambient ^a	$t \leq 10$ sec	R_{thJA}	72	83	$^\circ\text{C/W}$
	Steady-State		100	120	
Maximum Junction-to-Foot (Drain)	Steady-State	R_{thJF}	55	70	

Notes

a. Surface Mounted on FR4 Board, $t \leq 10$ sec.

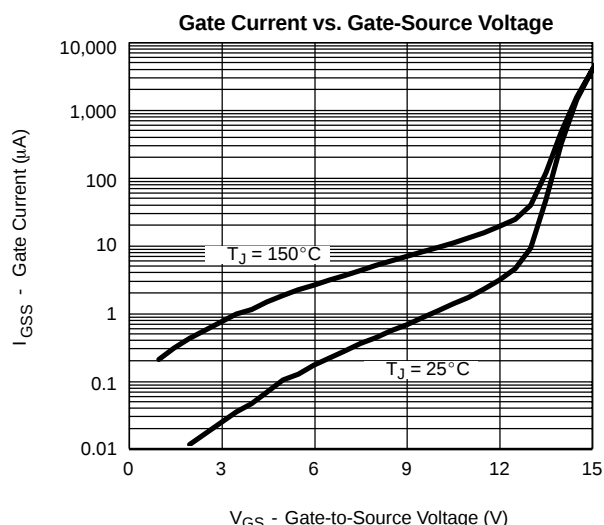
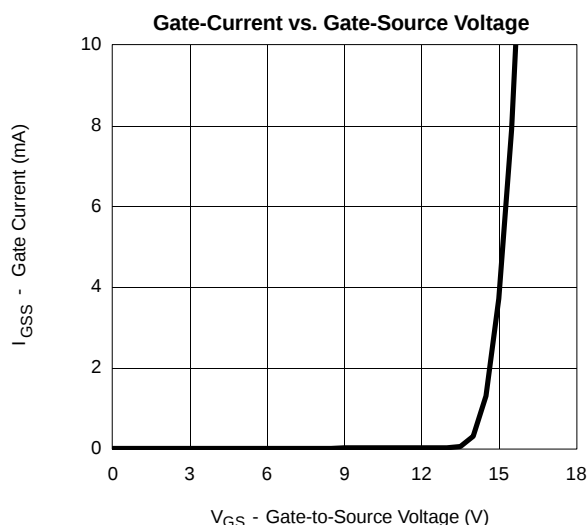
SPECIFICATIONS ($T_J = 25^\circ\text{C}$ UNLESS OTHERWISE NOTED)

Parameter	Symbol	Test Condition	Min	Typ ^a	Max	Unit
Static						
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\ \mu\text{A}$	0.6		1.6	V
Gate-Body Leakage	I_{GSS}	$V_{DS} = 0\ \text{V}, V_{GS} = \pm 4.5\ \text{V}$			± 200	nA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 16\ \text{V}, V_{GS} = 0\ \text{V}$			1	μA
		$V_{DS} = 16\ \text{V}, V_{GS} = 0\ \text{V}, T_J = 70^\circ\text{C}$			25	
On-State Drain Current ^b	$I_{D(on)}$	$V_{DS} \leq 5\ \text{V}, V_{GS} = 4.5\ \text{V}$	30			A
Drain-Source On-State Resistance ^b	$r_{DS(on)}$	$V_{GS} = 4.5\ \text{V}, I_D = 6.5\ \text{A}$		0.0165	0.022	Ω
		$V_{GS} = 2.5\ \text{V}, I_D = 5.5\ \text{A}$		0.023	0.030	
Forward Transconductance ^b	g_{fs}	$V_{DS} = 10\ \text{V}, I_D = 6.5\ \text{A}$		30		S
Diode Forward Voltage ^b	V_{SD}	$I_S = 1.5\ \text{A}, V_{GS} = 0\ \text{V}$		0.71	1.2	V
Dynamic^a						
Total Gate Charge	Q_g	$V_{DS} = 10\ \text{V}, V_{GS} = 4.5\ \text{V}, I_D = 6.5\ \text{A}$		12	18	nC
Gate-Source Charge	Q_{gs}			2.2		
Gate-Drain Charge	Q_{gd}			3.6		
Turn-On Delay Time	$t_{d(on)}$	$V_{DD} = 10\ \text{V}, R_L = 10\ \Omega$ $I_D \approx 1\ \text{A}, V_{GEN} = 4.5\ \text{V}, R_G = 6\ \Omega$		245	365	ns
Rise Time	t_r			330	495	
Turn-Off Delay Time	$t_{d(off)}$			860	1300	
Fall Time	t_f			510	765	

Notes

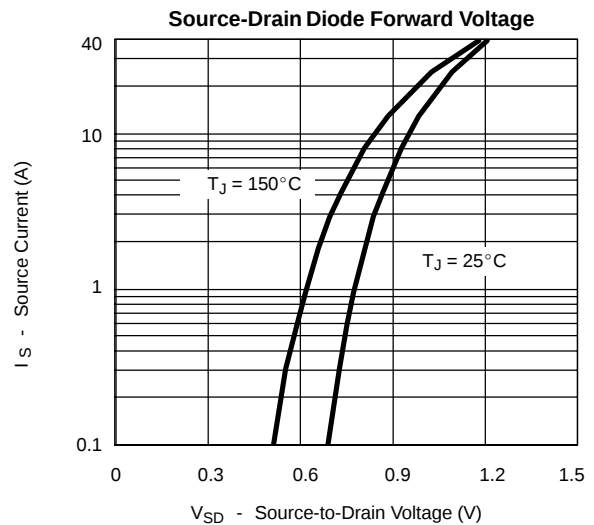
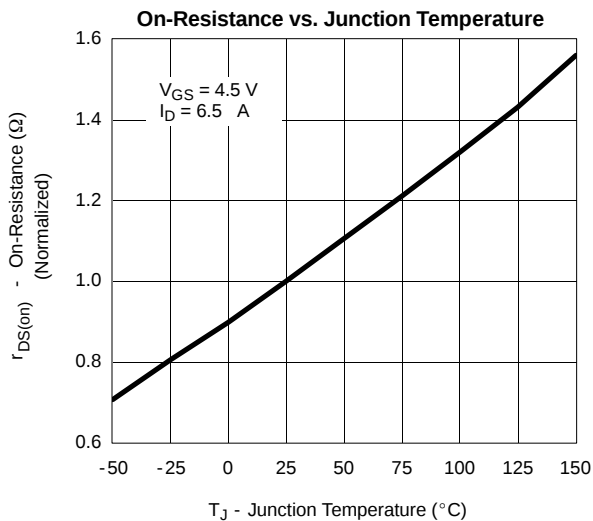
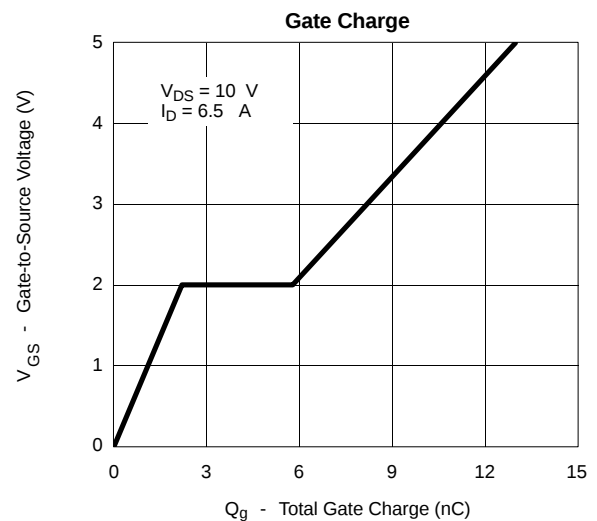
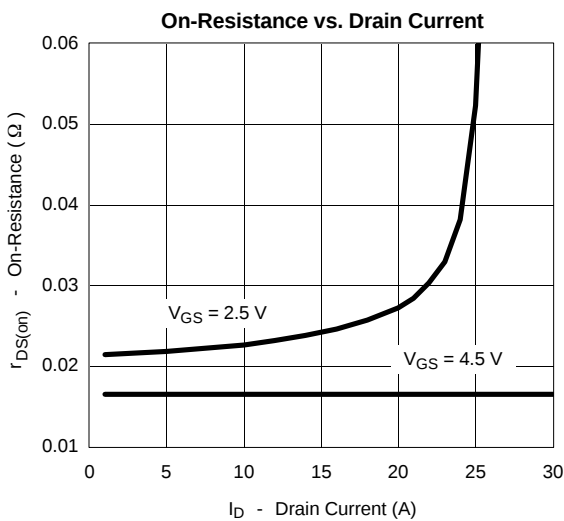
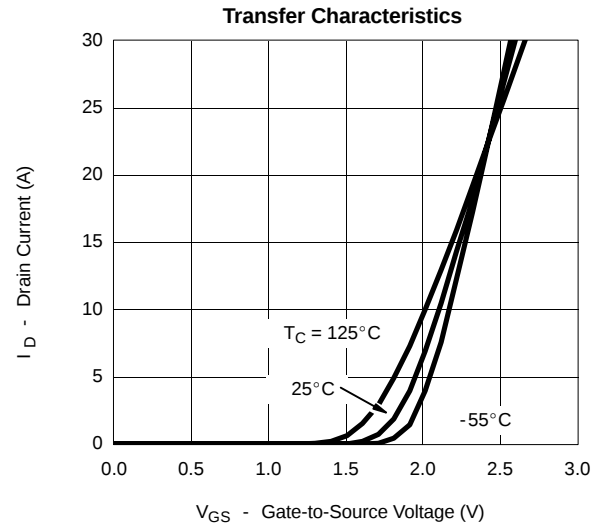
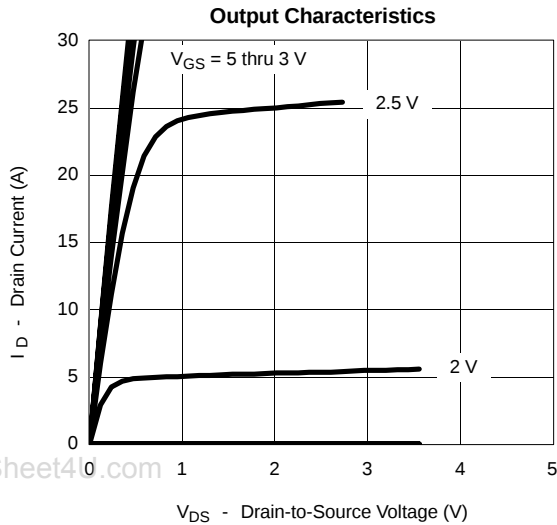
- a. For design aid only; not subject to production testing.
b. Pulse test; pulse width $\leq 300\ \mu\text{s}$, duty cycle $\leq 2\%$.

TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)

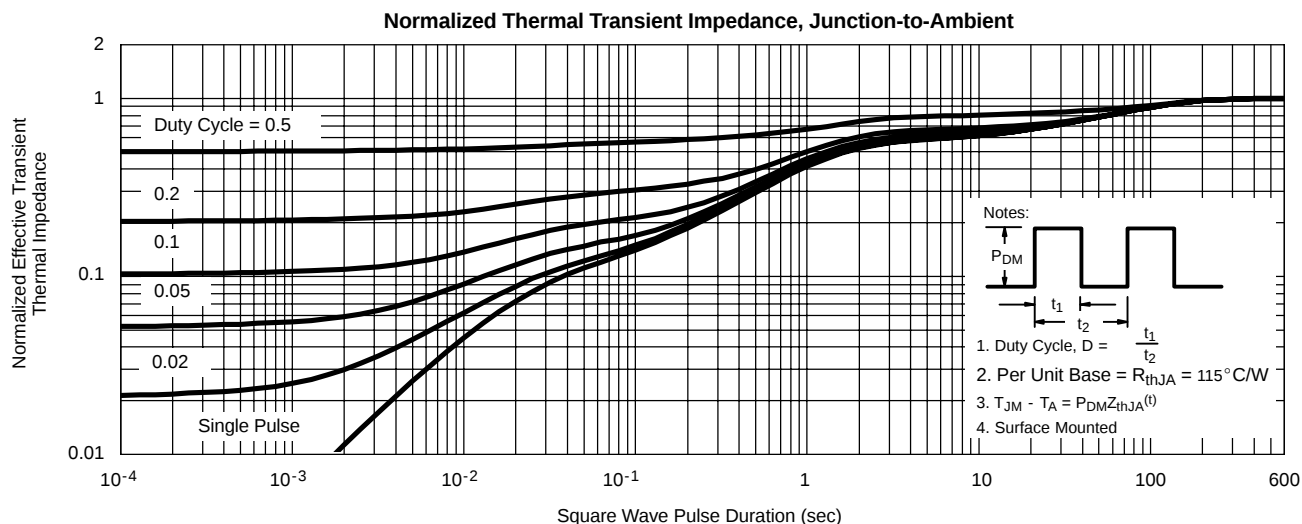
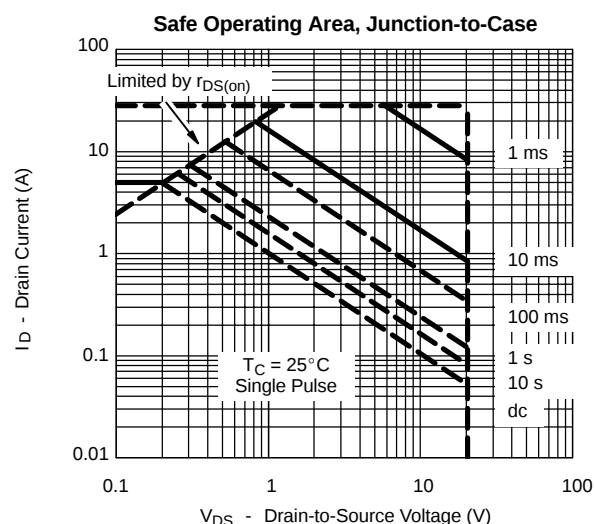
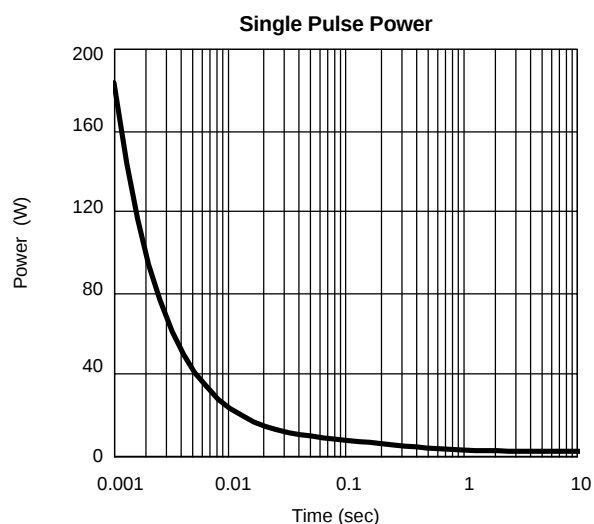
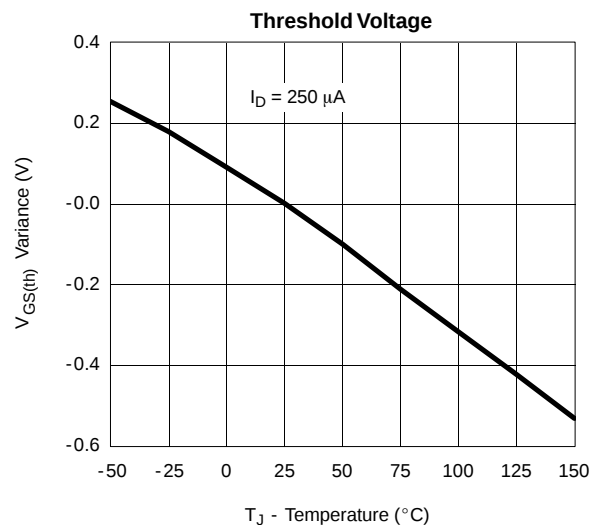
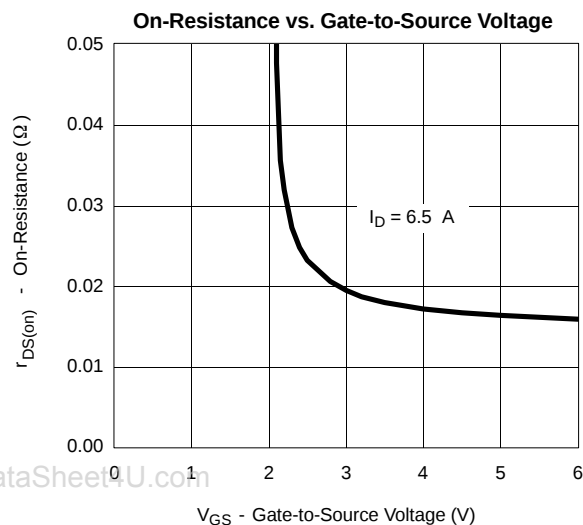




TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)



TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)





TYPICAL CHARACTERISTICS (25 °C UNLESS NOTED)

