



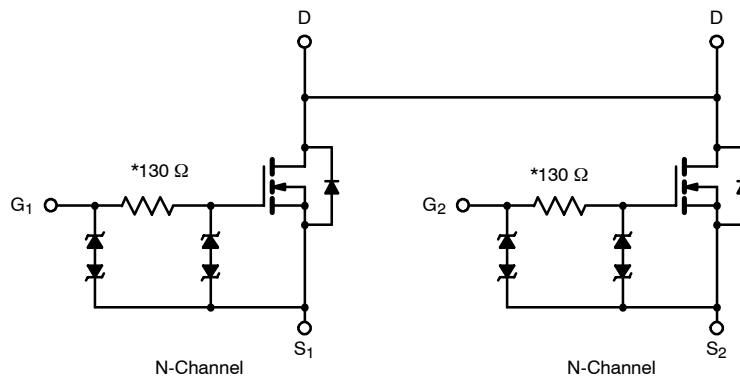
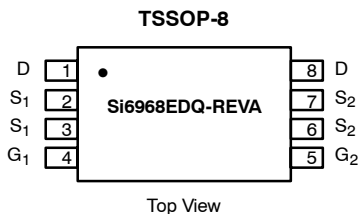
Dual N-Channel 2.5-V (G-S) MOSFET Common Drain, ESD Protection

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



*Typical value by design

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

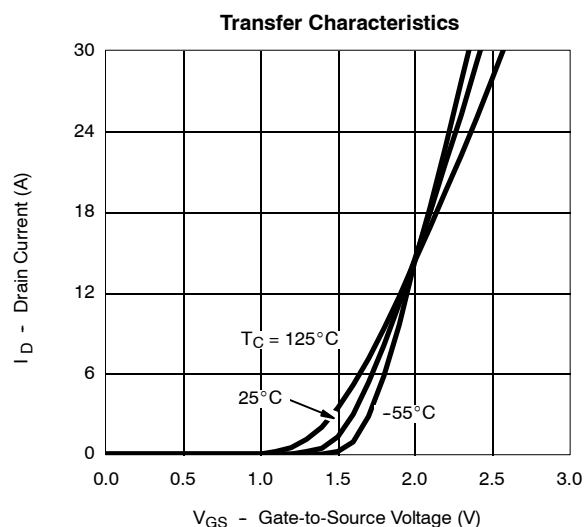
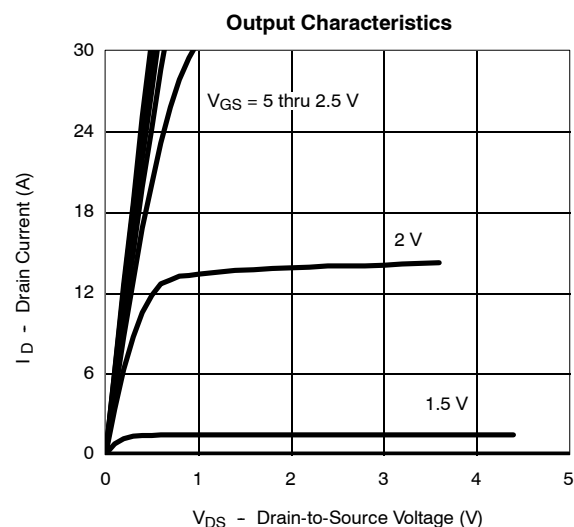
a. Surface Mounted on FR4 Board, $t \leq 10$ sec.

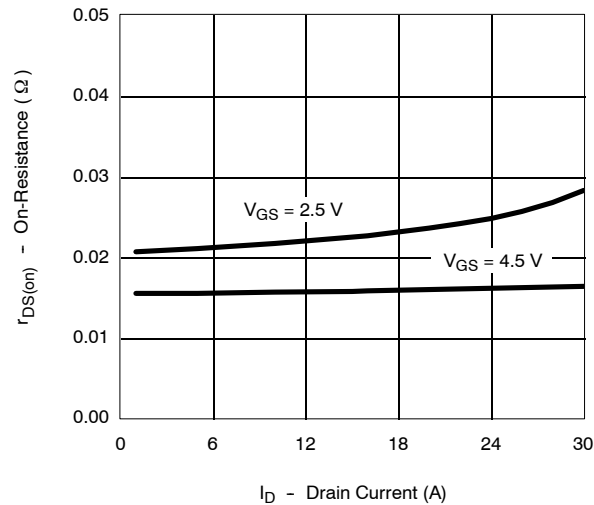
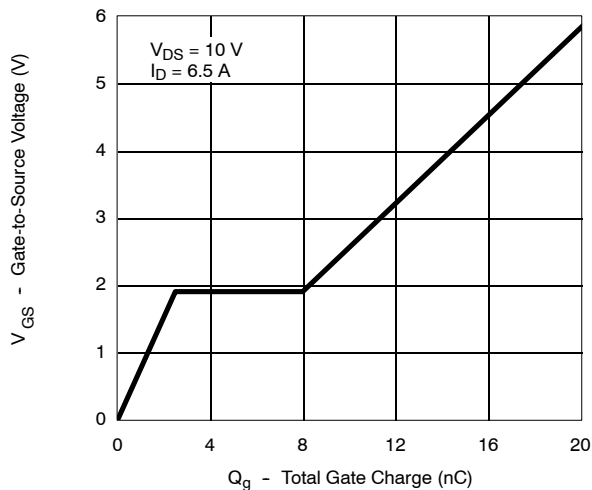
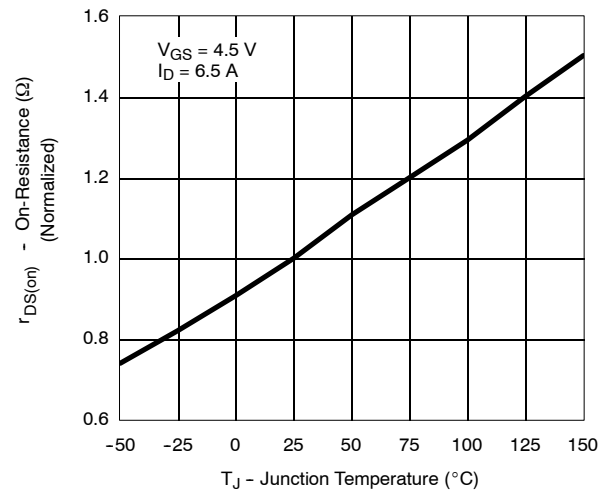
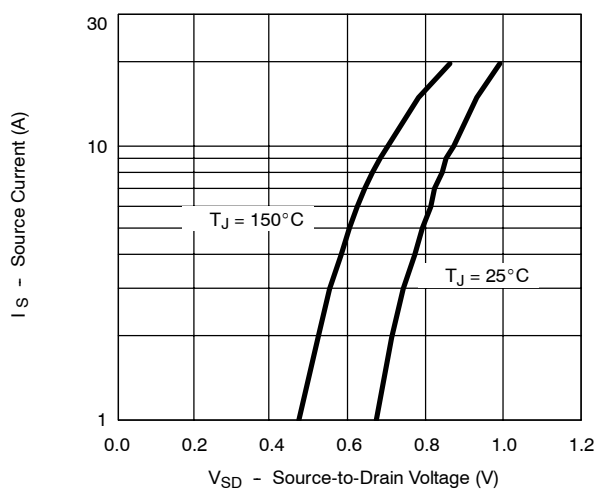
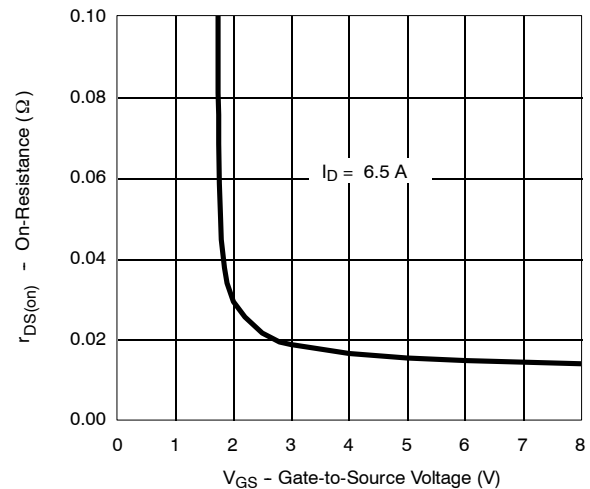
SPECIFICATIONS ($T_J = 25^\circ\text{C}$ UNLESS OTHERWISE NOTED)

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			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	$r_{DS(on)}$	$V_{GS} = 4.5\ \text{V}$, $I_D = 6.5\ \text{A}$		0.018	0.022	Ω
		$V_{GS} = 2.5\ \text{V}$, $I_D = 5.5\ \text{A}$		0.024	0.030	
Forward Transconductance ^b	g_{fs}	$V_{DS} = 10\ \text{V}$, $I_D = 6.5\ \text{A}$		25		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	$V_{DS} = 10\ \text{V}$, $V_{GS} = 4.5\ \text{V}$, $I_D = 6.5\ \text{A}$		16	25	nC
Gate-Source Charge	Q_{gs}			2.5		
Gate-Drain Charge	Q_{gd}			5.5		
Turn-On Delay Time	$t_{d(on)}$	$V_{DD} = 10\ \text{V}$, $R_L = 10\ \Omega$ $I_D \cong 1\ \text{A}$, $V_{GEN} = 4.5\ \text{V}$, $R_G = 6\ \Omega$		140	210	ns
Rise Time	t_r			230	350	
Turn-Off Delay Time	$t_{d(off)}$			600	900	
Fall Time	t_f			450	700	

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)****On-Resistance vs. Drain Current****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)
