

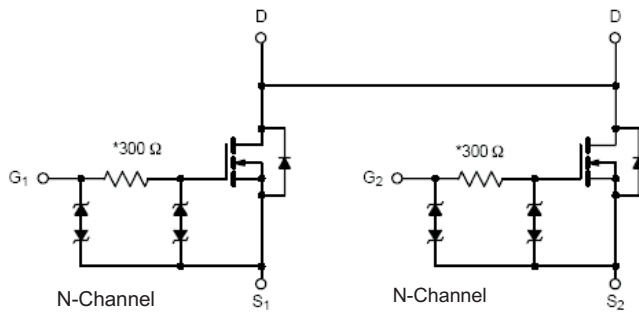
Dual N-Channel 2.5-V (G-S) MOSFET

Common Drain, ESD Protection

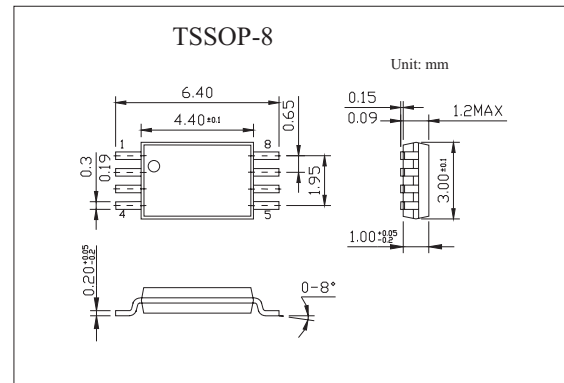
KI6968BEDQ(SI6968BEDQ)

■ Features

- $V_{DS}=20V, r_{DS(on)}=0.022\ \Omega$ @ $V_{GS}=4.5V, I_D=6.5A$
- $V_{BS}=20V, r_{DS(on)}=0.030\ \Omega$ @ $V_{GS}=2.5V, I_D=5.5A$



* Typical value by design



■ Absolute Maximum Ratings $T_a = 25^\circ\text{C}$

Parameter		Symbol	10 secs	Steady State	Unit
Drain-Source Voltage		V_{DS}	20		V
Gate-Source Voltage		V_{GS}	± 12		
Continuous Drain Current*	$T_A = 25^\circ\text{C}$	I_D	6.5	5.2	A
	$T_A = 70^\circ\text{C}$		5.5	3.5	
Pulsed Drain Current		I_{DM}	30		
Continuous Source Current *		I_S	1.5	1.0	W
Maximum Power Dissipation	$T_A = 25^\circ\text{C}$	P_D	1.5	1.0	
	$T_A = 70^\circ\text{C}$		0.96	0.64	
Operating Junction and Storage Temperature Range		T_J, T_{stg}	-55 to 150		$^\circ\text{C}$
Parameter		Symbol	Typ	Max	Unit
Maximum Junction-to-Ambient*	$t \leq 10\ \text{sec}$	R_{thJA}	72	83	$^\circ\text{C/W}$
	Steady-State		100	120	
Maximum Junction-to-Foot (Drain)	Steady-State	R_{thJF}	55	70	

* Surface Mounted on FR4 Board, $t \leq 10\ \text{sec}$.

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■ Electrical Characteristics Ta = 25°C

Parameter	Symbol	Testconditions	Min	Typ	Max	Unit
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = 250 μA	0.6		1.6	V
Gate-Body Leakage	I _{GSS}	V _{DS} = 0 V, V _{GS} = ± 4.5 V			±200	nA
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = 16 V, V _{GS} = 0 V			1	μ A
		V _{DS} = 16 V, V _{GS} = 0 V, T _J = 70°C			25	μ A
On-State Drain Current*	I _{D(on)}	V _{DS} ≤ 5 V, V _{GS} = 4.5 V	30			A
Drain-Source On-State Resistance	r _{DS(on)}	V _{GS} = 4.5 V, I _D = 6.5 A		0.0165	0.022	Ω
		V _{GS} = 2.5 V, I _D = 5.5 A		0.023	0.030	Ω
Forward Transconductance*	g _{fs}	V _{DS} = 10 V, I _D = 6.5 A		30		S
Total Gate Charge	Q _g	V _{DS} = 10V, V _{GS} = 4.5V, I _D = 6.5A		12	18	nC
Gate-Source Charge	Q _{gs}			2.2		nC
Gate-Drain Charge	Q _{gd}			3.6		nC
Turn-On Delay Time	t _{d(on)}	V _{DD} = 10 V, R _L = 10 Ω I _D = 1 A, V _{GEN} = 4.5V, R _G = 6 Ω		245	365	ns
Rise Time	t _r			330	495	ns
Turn-Off Delay Time	t _{d(off)}			860	1300	ns
Fall Time	t _f			510	765	ns
Schottky Diode Forward Voltage*	V _{SD}	I _S = 1.5 A, V _{GS} = 0 V		0.71	1.2	V

* Pulse test; pulse width ≤ 300 μ s, duty cycle ≤ 2%.