

**20V Dual N-Channel Enhancement Mode MOSFET**

**VDS= 20V ID= 7.0A**

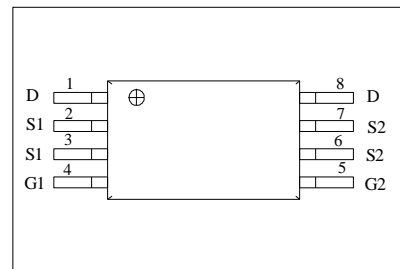
**ESD Protected : 2000V**

**RDS(ON), Vgs@2.5V, Ids@5.5A = 32mΩ**

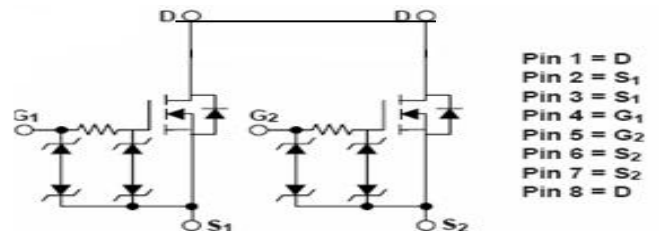
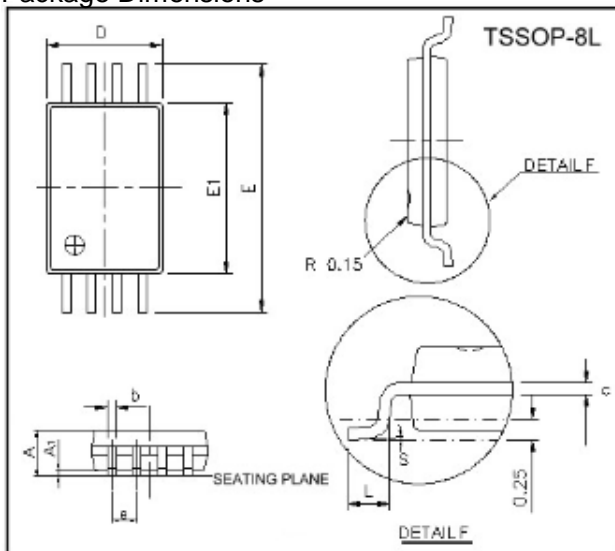
**RDS(ON), Vgs@4.5V, Ids@7.0A = 24mΩ**

**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
- Battery Swicth, ESD protected



**Package Dimensions**



REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	5.80	6.20	M	0.10	0.25
B	4.80	5.00	H	0.35	0.49
C	3.80	4.00	L	1.35	1.75
D	0°	8°	J	0.375 REF.	
E	0.40	0.90	K	45°	
F	0.19	0.25	G	1.27 TYP.	

**Maximum Ratings and Thermal Characteristics (TA = 25oC unless otherwise noted)**

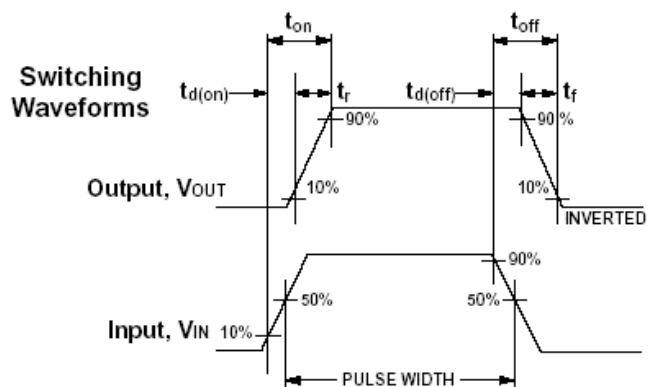
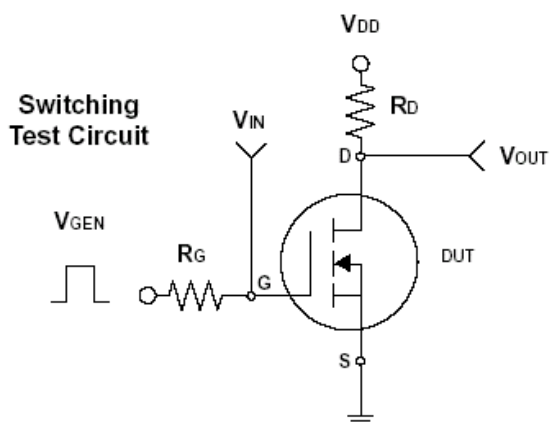
Parameter	Symbol	Limit	Unit	
Drain-Source Voltage	V <sub>DS</sub>	20	V	
Gate-Source Voltage	V <sub>GS</sub>	± 12		
Continuous Drain Current	I <sub>D</sub>	7	A	
Pulsed Drain Current	I <sub>DM</sub>	24		
Maximum Power Dissipation	P <sub>D</sub>	TA = 25°C	2	W
		TA = 75°C	0.64	
Operating Junction and Storage Temperature Range	T <sub>J</sub> , T <sub>stg</sub>	-55 to 150	°C	
Junction-to-Ambient Thermal Resistance (PCB mounted)	R <sub>θJA</sub>	62.5	°C/W	

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ELECTRICAL CHARACTERISTICS

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
<b>Static</b>						
Drain-Source Breakdown Voltage	$BV_{DSS}$	$V_{GS} = 0V, I_D = 250\mu A$	20			V
Drain-Source On-State Resistance	$R_{DS(on)}$	$V_{GS} = 2.5V, I_D = 5.5A$		26.0	32.0	mΩ
Drain-Source On-State Resistance	$R_{DS(on)}$	$V_{GS} = 4.5V, I_D = 7A$		20.0	24.0	
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	0.6		1	V
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS} = 16V, V_{GS} = 0V$			1	μA
Gate Body Leakage	$I_{GSS}$	$V_{GS} = \pm 12V, V_{DS} = 0V$			±10	μA
Forward Transconductance	$g_{fs}$	$V_{DS} = 10V, I_D = 6A$		16	—	S
<b>Dynamic</b>						
Total Gate Charge	$Q_g$	$V_{DS} = 10V, I_D = 6A$ $V_{GS} = 4.5V$		15	20	nC
Gate-Source Charge	$Q_{gs}$			3.4		
Gate-Drain Charge	$Q_{gd}$			1.2		
Turn-On Delay Time	$t_{d(on)}$	$V_{DD} = 10V,$ $I_D = 1A, V_{GEN} = 4.5V$ $R_G = 6\Omega$		140	200	ns
Turn-On Rise Time	$t_r$			210	250	
Turn-Off Delay Time	$t_{d(off)}$			390	450	
Turn-Off Fall Time	$t_f$			220	260	
Input Capacitance	$C_{iss}$	$V_{DS} = 8V, V_{GS} = 0V$ $f = 1.0\text{ MHz}$		950		pF
Output Capacitance	$C_{oss}$			450		
Reverse Transfer Capacitance	$C_{rss}$			135		
<b>Source-Drain Diode</b>						
Max. Diode Forward Current	$I_S$				1.7	A
Diode Forward Voltage	$V_{SD}$	$I_S = 1.7A, V_{GS} = 0V$			1.2	V

Note: Pulse test: pulse width ≤ 300μs, duty cycle ≤ 2%



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Typical Characteristics (T<sub>J</sub> = 25°C Noted)

