

## 20V Dual N-Channel Enhancement Mode MOSFET

### VDS= 20V

RDS(ON), Vgs@2.5V, Ids@5.2A = 25m

RDS(ON), Vgs@4.5V, Ids@ 6 A = 21m

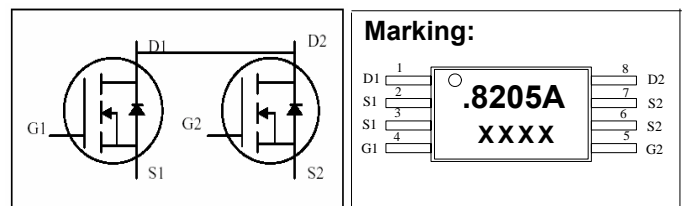
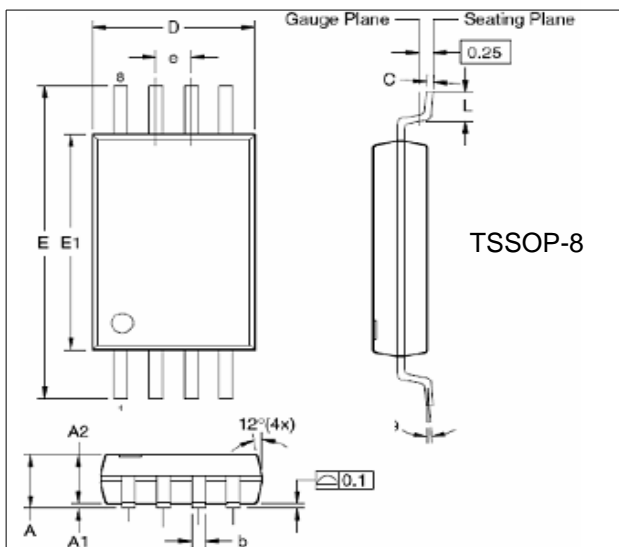
### Features

Advanced trench process technology

High Density Cell Design For Ultra Low On-Resistance

High Power and Current handing capability

Ideal for Li ion battery pack applications



REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	1.20 MAX.		E1	4.30	4.50
A1	0.05	0.15	e	0.65BSC	
A2	0.80	1.05	L	0.45	0.75
b	0.19	0.30	θ	0°	10°
C	0.90	0.20			
D	2.90	3.00			
E	6.40BSC				

### Maximum Ratings and Thermal Characteristics (TA = 25°C unless otherwise noted)

Parameter	Symbol	Limit	Unit
Drain-Source Voltage	$V_{DS}$	20	V
Gate-Source Voltage	$V_{GS}$	±12	
Continuous Drain Current	$I_D$	6	A
Pulsed Drain Current <sup>1)</sup>	$I_{DM}$	20	
Maximum Power Dissipation	TA = 25°C	1.6	W
	TA = 75°C	1	
Operating Junction and Storage Temperature Range	$T_J, T_{stg}$	-55 to 150	°C
Junction-to-Ambient Thermal Resistance (PCB mounted) <sup>2)</sup>	$R_{θJA}$	78	°C/W

#### Notes

<sup>1)</sup> Pulse width limited by maximum junction temperature.

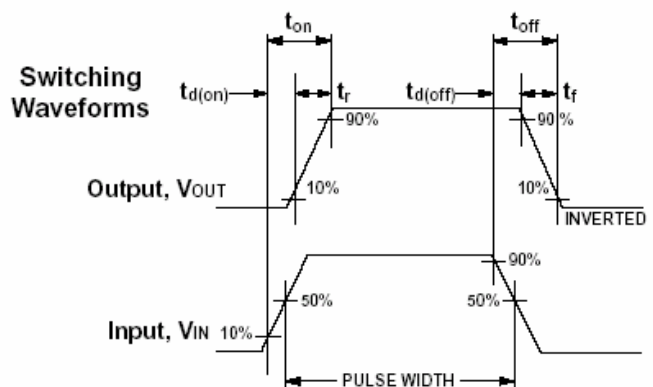
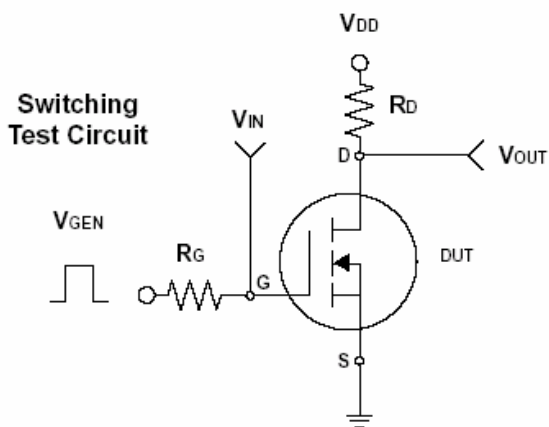
<sup>2)</sup> Surface Mounted on FR4 Board,  $t \leq 5$  sec.

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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 <sup>1)</sup>	$R_{DS(on)}$	$V_{GS} = 2.5V, I_D = 5.2A$		25	32	m $\Omega$
Drain-Source On-State Resistance <sup>1)</sup>	$R_{DS(on)}$	$V_{GS} = 4.5V, I_D = 6A$		21	25	
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	0.45		1.2	V
Zero Gate Voltage Drain Current $I_{DSS}$	$I_{DSS}$	$V_{DS} = 16V, V_{GS} = 0V$			1	$\mu A$
Gate Body Leakage	$I_{GSS}$	$V_{GS} = \pm 12V, V_{DS} = 0V$			$\pm 100$	nA
Forward Transconductance	$g_{fs}$	$V_{DS} = 5V, I_D = 6A$		22	—	S
<b>Dynamic <sup>1)</sup></b>						
Total Gate Charge	$Q_g$	$V_{DS} = 10V, I_D = 6A$ $V_{GS} = 4.5V$		5		nC
Gate-Source Charge	$Q_{gs}$			1.1		
Gate-Drain Charge	$Q_{gd}$			2.1		
Turn-On Delay Time	$t_{d(on)}$	$V_{DD} = 10V, R_G = 6\Omega$ $I_D = 1A, V_{GS} = 4.5V$		10		ns
Turn-On Rise Time	$t_r$			11		
Turn-Off Delay Time	$t_{d(off)}$			35		
Turn-Off Fall Time	$t_f$			30		
Input Capacitance	$C_{iss}$	$V_{DS} = 8V, V_{GS} = 0V$ $f = 1.0\text{ MHz}$		600		pF
Output Capacitance	$C_{oss}$			330		
Reverse Transfer Capacitance	$C_{rss}$			140		
<b>Source-Drain Diode</b>						
Max. Diode Forward Current	$I_S$				1.7	A
Diode Forward Voltage	$V_{SD}$	$I_S = 1.7A, V_{GS} = 0V$		0.72	1.2	V

<sup>1)</sup> Pulse test: pulse width  $\leq 300\mu s$ , duty cycle  $\leq 2\%$



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

