深圳市富满电子有限公司
SHENZHEN FUMAN ELECTRONICS CO., LTD.

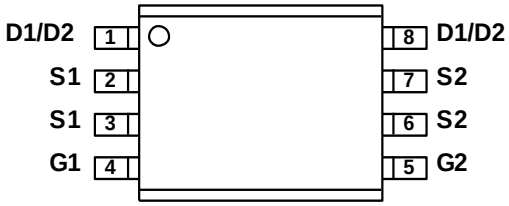
SC8205 (文件编号：S&CIC0706)

Features

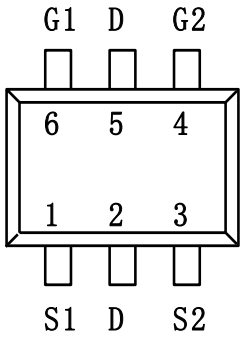
- Advanced trench process technology;
- High density cell design for ultra low On-Resistance;
- High power and current handing capability;
- Ideal for Li ion battery pack applications;
- V_{DS} = 20V
  $R_{DS(ON)}$, V_{gs}@2.5V, I_{ds}@3.3A = 30mΩ;
  $R_{DS(ON)}$, V_{gs}@4.5V, I_{ds}@8.2A = 20mΩ;
- Recommended Package: TSSOP-8/SO-8/SOT-23-6.

Package

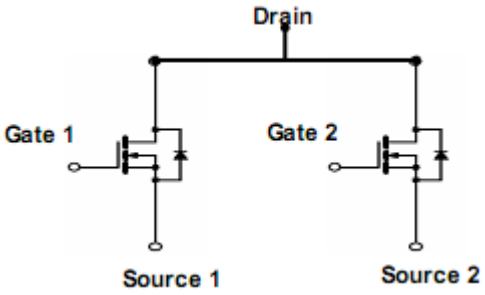
8205A/TSSOP-08



8205S/SOT-23-6



Internal Schematic Diagram



N-Channel MOSFET

Maximum Ratings and Thermal Characteristics (Ta = 25℃ 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	8.2	A
Pulsed drain current [1]		I_{DM}	30	
Maximum power dissipation	TA = 25℃	P_D	2	W
	TA = 75℃		1.3	
Operating junction and storage temperature range		T_J, T_{stg}	-55 to 150	℃
Junction-to-Ambient thermal resistance (PCB mounted) [2]		$R_{\theta JA}$	62.5	℃/W

Note: 1. Repetitive Rating: Pulse width limited by the maximum junction temperature

2. 1-in^2 2oz Cu PCB board

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Electrical Characteristics

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Static						
Drain-Source Breakdown Voltage	BV_{DSS}	V_{GS} = 0V, I_D = 250uA	20	--	--	V
Drain-Source On-Stage Resistance	R_{DS}(on)	V_{GS} = 2.5V, I_D = 3.3A	--	22.0	30.0	mΩ
Drain-Source On-Stage Resistance	R_{DS}(on)	V_{GS} = 4.5V, I_D = 8.2A	--	16.0	20.0	
Gate Threshold Voltage	V_{GS}(th)	V_{DS} = V_{GS}, I_D = 250uA	0.5	--	1.5	V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} = 20V, V_{GS} = 0V	--	--	1	uA
Gate Body Leakage	I_{GSS}	V_{GS} = ±12V, I_D=0uA	--	--	±100	nA
Forward Tran conductance	g_{fs}	V_{DS} = 15V, I_D = 8.2A	--	29	--	S
Dynamic[3)]						
Total Gate Charge	Q_g	V_{DS} = 10V, I_D = 8.2A V_{GS} = 4.5V	--	11	14.3	nC
Gate-Source Charge	Qg_s		--	2.5	3.25	
Gate-Drain Charge	Q_{gd}		--	3.2	4.16	
Turn-On Delay Time	$t_{d(on)}$	V_{DD} = 10V, R_G = 6Ω I_D = 1A, V_{GEN} = 4.5V	--	45	90	ns
Turn-On Rise Time	t_r		--	50	100	
Turn-Off Delay Time	$t_{d(off)}$		--	35	70	
Turn-Off Fall Time	t_f		--	20	40	
Input Capacitance	C_{iss}	V_{DS} = 8V, V_{GS} = 0V f=1.0MHz	--	560	--	pF
Output Capacitance	C_{oss}		--	95	--	
Reverse Transfer Capacitance	C_{rss}		--	75	--	
Source-Drain Diode						
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: 1. Pulse test: Pulse width <=300us, duty cycle<=2%

2. Guaranteed by design; not subject to production testing