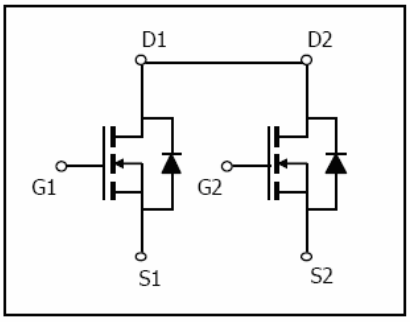
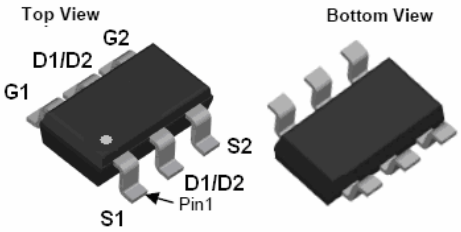
Features

- ♦ Ron(typ.)=22mΩ @VGS=4.5V
- ♦ Low On-Resistance
- ♦ 150°C Operating Temperature
- ♦ Fast Switching
- ♦ Lead-Free, RoHS Compliant



Description

VS8205AS designed by the trench processing techniques to achieve extremely low on-resistance. And fast switching speed and improved transfer effective . These features combine to make this design an extremely efficient and reliable device for variety of DC-DC applications.



SOT23-6L

Absolute Maximum Ratings

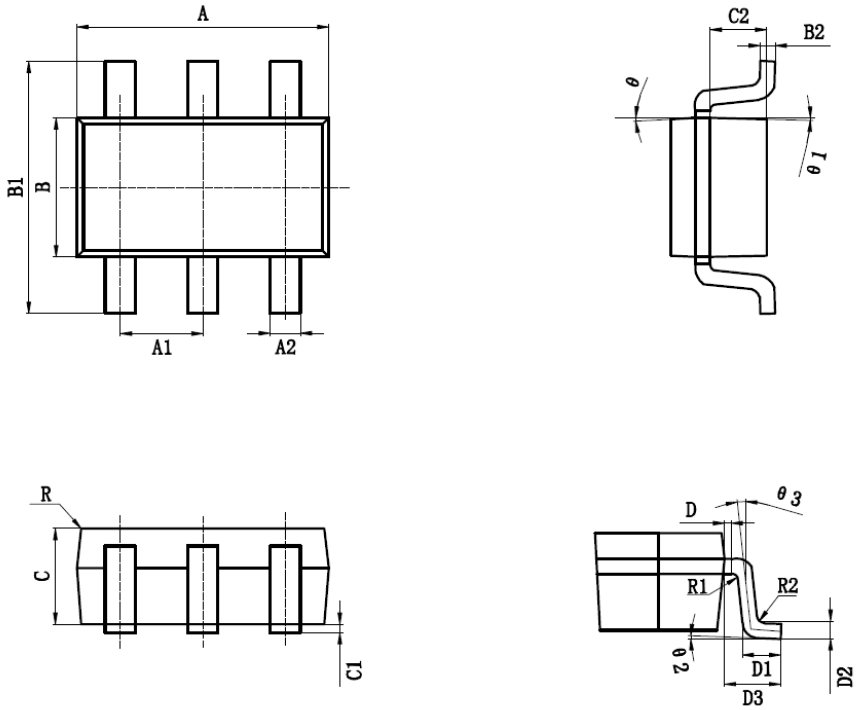
Symbol	Parameter		Rating	Unit
Common Ratings (T_C=25°C Unless Otherwise Noted)				
V_{GS}	Gate-Source Voltage		±12	V
$V_{(BR)DSS}$	Drain-Source Breakdown Voltage		20	V
T_J	Maximum Junction Temperature		150	°C
T_{STG}	Storage Temperature Range		-50 to 155	°C
I_S	Diode Continuous Forward Current	T_C=25°C	6①	A
Mounted on Large Heat Sink				
I_{DM}	Pulse Drain Current Tested	T_C=25°C	22	A
I_D	Continuous Drain Current(VGS=10V)	T_C=25°C	6①	A
		T_C=100°C	4.0	
P_D	Maximum Power Dissipation	T_C=25°C	1.45	W
$R_{\theta JA}$	Thermal Resistance Junction-Ambient		99	°C/W

Symbol	Parameter	Condition	Min	Typ	Max	Unit
Static Electrical Characteristics @ T_J = 25°C (unless otherwise stated)						
$V_{(BR)DSS}$	Drain-Source Breakdown Voltage	V_{GS}=0V I_D=250μA	20	--	--	V
I_{DSS}	Zero Gate Voltage Drain Current (Tc=25℃)	V_{DS}=20V,V_{GS}=0V	--	--	1	μA
	Zero Gate Voltage Drain Current (Tc=125℃)	V_{DS}=20V,V_{GS}=0V	--	--	100	μA
I_{GSS}	Gate-Body Leakage Current	V_{GS}=±12V,V_{DS}=0V	--	--	±100	nA
$V_{GS(TH)}$	Gate Threshold Voltage	V_{DS}=V_{GS},I_D=250μA	0.4	0.7	1.2	V
$R_{DS(ON)}$	Drain-Source On-State Resistance	V_{GS}=4.5V, I_D=4.5A	--	20	25	mΩ
$R_{DS(ON)}$	Drain-Source On-State Resistance	V_{GS}2.5V, I_D=3.5A	--	30	40	mΩ
Dynamic Electrical Characteristics @ T_J = 25°C (unless otherwise stated)						
C_{iss}	Input Capacitance	V_{DS}=10V,V_{GS}=0V, f=1MHz	--	610	--	pF
C_{oss}	Output Capacitance		--	320	--	pF
C_{rss}	Reverse Transfer Capacitance		--	145	--	pF
Q_g	Total Gate Charge	V_{DS}=10V,I_D=1A, V_{GS}=4.5V	--	11	--	nC
Q_{gs}	Gate-Source Charge		--	2.2	--	nC
Q_{gd}	Gate-Drain Charge		--	1.5	--	nC
Switching Characteristics						
$t_{d(on)}$	Turn-on Delay Time	V_{DD}=10V, I_D=1A, R_G=6Ω, V_{GS}=4.5V, RL=5Ω,	--	10	--	nS
t_r	Turn-on Rise Time		--	11	--	nS
$t_{d(off)}$	Turn-Off Delay Time		--	35	--	nS
t_f	Turn-Off Fall Time		--	31	--	nS
Source- Drain Diode Characteristics						
I_{SD}	Source-drain current(Body Diode)	Tc=25℃	--	--	5.6①	A
I_{SDM}	Pulsed Source-drain current (Body Diode)		--	--	16①	A
V_{SD}	Forward on voltage	Tj=25℃,I_{SD}=2.8A, V_{GS}=0V	--	0.85	1.3	V

Notes: ① Pulse test ; Pulse width≤300μs, duty cycle≤2%.

SOT23-6L Mechanical Data

Size / REF.	Min.(mm)	Max.(mm)	Size / REF.	Min.(mm)	Max.(mm)
A	2.82	3.02	D1	0.40	0.50
A1	0.90	1.00	D2	0.254TYP	
A2	0.35	0.45	D3	0.60	0.70
B	1.52	1.72	θ	9° TYP4	
B1	2.80	3.00	θ1	10° TYP4	
B2	0.119	0.135	θ2	0° ~ 8°	
C	1.05	1.15	θ3	6° TYP	
C1	0.03	0.13	R	<0.2TYP4	
C2	0.60	0.70	R1	0.08TYP	
D	0.03	0.13	R2	0.08TYP	



Order Information

Product	Marking	Package	Packaging	Min Unit Quantity
VS8205AS	8205A	SOT23-6L	3000/Reel	6000

Customer Service

Sales and Service:

Sales@vgsemi.com

Shen Zhen Vangaurd Semiconductor CO., LTD

TEL: (86-755) -26902410

FAX: (86-755) -26907027

WEB: www.vgsemi.com