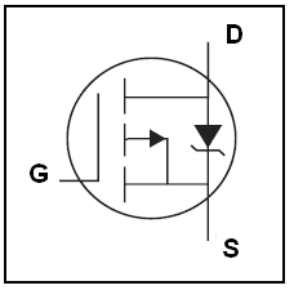
Features

- Ron(typ.)=55mΩ
- Low On-Resistance
- 150°C Operating Temperature
- Fast Switching
- Lead-Free, RoHS Compliant
- Green Product



$V_{DSS} \geq -30V$

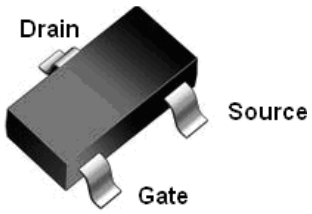
$R_{DS(on)}$=55mΩ @VGS= -10V

$R_{DS(on)}$= 65mΩ @VGS=-4.5V

I_D = - 4.2A @ Vgs=-10V

Description

VS3401AT-G 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

VS3401AT-G

Absolute Maximum Ratings

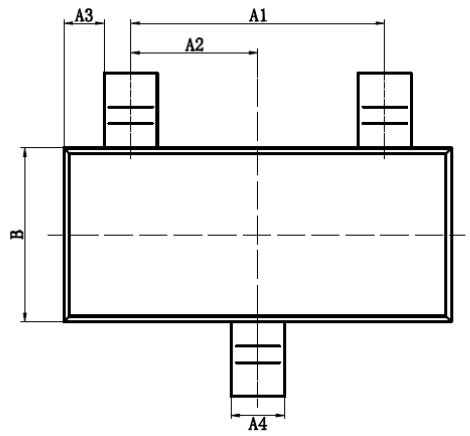
Stresses beyond those listed under "Absolute Maximum Ratings" may cause permanent damage to the device. These are stress ratings only;and functional operation of the device at these or any other condition beyond those indicated in the specifications is not implied. Exposure to absolute-maximum-rated conditions for extended periods may affect device reliability. The thermal resistance and power dissipation ratings are measured under board mounted and still air conditions. Ambient temperature (TA) is 25°C, unless otherwise specified.

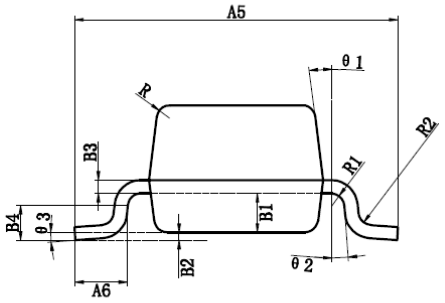
Symbol	Parameter		Rating	Unit
Common Ratings (T_C=25°C Unless Otherwise Noted)				
V_{GS}	Gate-Source Voltage		±12	V
$V_{(BR)DSS}$	Drain-Source Breakdown Voltage		-30	V
T_J	Maximum Junction Temperature		150	°C
T_{STG}	Storage Temperature Range		-50 to 155	°C
I_S	Diode Continuous Forward Current	T_C=25°C	-4.2①	A
Mounted on Large Heat Sink				
I_{DM}	Pulse Drain Current Tested	T_C=25°C	-16.8	A
I_D	Continuous Drain Current(V_{GS}=10V)	T_C=25°C	-4.2①	A
		T_C=100°C	-3.2	
P_D	Maximum Power Dissipation	T_C=25°C	1.3	W
$R_{\theta JA}$	Thermal Resistance Junction-Ambient		120	°C/W

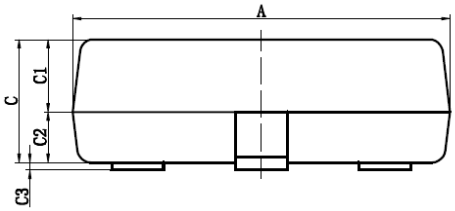
Symbol	Parameter	Condition	Min	Typ	Max	Unit
Static Electrical Characteristics @ T_J = 25°C (unless otherwise stated)						
$V_{(BR)DSS}$	Drain-Source Breakdown Voltage	V_{GS}=0V I_D=-250μA	-30	--	--	V
I_{DSS}	Zero Gate Voltage Drain Current (Tc=25℃)	V_{DS}=-30V,V_{GS}=0V	--	--	-1	μA
	Zero Gate Voltage Drain Current (Tc=125℃)	V_{DS}=-30V,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	-0.5	-0.7	-1.5	V
$R_{DS(ON)}$	Drain-Source On-State Resistance	V_{GS}=-10V, I_D=-4.2A	--	55	75	mΩ
$R_{DS(ON)}$	Drain-Source On-State Resistance	V_{GS}=-4.5V, I_D=-4.0A	--	65	90	mΩ
$R_{DS(ON)}$	Drain-Source On-State Resistance	V_{GS}=-2.5V, I_D=-1.0A	--	85	120	mΩ
Dynamic Electrical Characteristics @ T_J = 25°C (unless otherwise stated)						
C_{iss}	Input Capacitance	V_{DS}=-15V,V_{GS}=0V, f=1MHz	--	710	--	pF
C_{oss}	Output Capacitance		--	90	--	pF
C_{rss}	Reverse Transfer Capacitance		--	40	--	pF
Q_g	Total Gate Charge	V_{DS}=-15V,I_D=-4.0A, V_{GS}=-4.5V	--	8.5	--	nC
Q_{gs}	Gate-Source Charge		--	0.9	--	nC
Q_{gd}	Gate-Drain Charge		--	1.7	--	nC
Switching Characteristics						
$t_{d(on)}$	Turn-on Delay Time	V_{DD}=-15V, I_D=-4A, R_G=6Ω, V_{GS}=-4.5V, RL=5Ω,	--	8.5	--	nS
t_r	Turn-on Rise Time		--	5.5	--	nS
$t_{d(off)}$	Turn-Off Delay Time		--	26	--	nS
t_f	Turn-Off Fall Time		--	12.5	--	nS
Source- Drain Diode Characteristics						
I_{SD}	Source-drain current(Body Diode)	T_c=25℃	--	--	-4.2①	A
V_{SD}	Forward on voltage	T_j=25℃,I_{SD}=-4A, V_{GS}=0V	--	-0.85	-1.3	V

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

SOT23 mechanical data

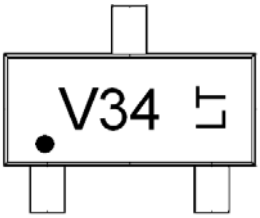






尺寸 / 标注	最小(mm)	最大(mm)	尺寸 / 标注	最小(mm)	最大(mm)
A	2.80	3.00	B4	0.254TYP	
A1	1.80	2.00	C	0.90	0.975
A2	0.95TYP		C1	0.535	0.585
A3	0.20	0.40	C2	0.365	0.415
A4	0.30	0.50	C3	0.01	0.11
A5	2.34	2.50	R	0.1TYP	
A6	0.30	0.50	R1	0.1TYP	
B	1.25	1.35	R2	0.1TYP	
B1	0.265	0.315	θ 1	6° ～ 8° TYP4	
B2	0.01	0.11	θ 2	5° REF	
B3	0.10TYP		θ 3	1° ～ 7°	

Marking



Part Name Code:V34
Lot Code:LT (From 00 to ZZ)
GP Mark: ●

Order Information

Product	Marking	Package	Packaging	Min Unit Quantity
VS3401AT-G	VS34	SOT23	3000/Reel	6000

Customer Service

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