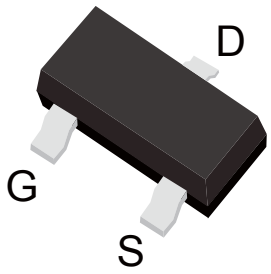
4A, 20V, N-Channel MOSFET

Features

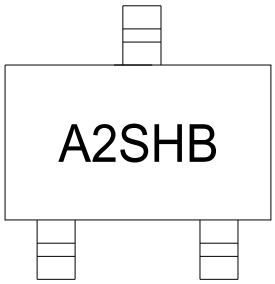
$R_{DS(ON)}$<30mΩ @ V_{GS}=4.5V
$R_{DS(ON)}$<45mΩ @ V_{GS}=2.5V
Industry-standard pinout SOT-23 Package
Compatible with Existing Surface MountTechniques
RoHS Compliant,Halogen-Free

Application

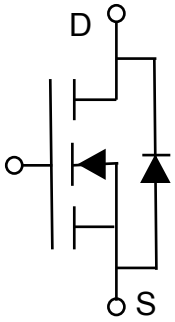
Load Switch
PWM Application
Power management
100% UIS TESTED !
100% ΔVds TESTED !



SOT-23 top view



Marking and pin Assignment



Schematic Diagram

Package Marking and Ordering Information

Device model	Marking	Packing	Device Package	Reel （PCS）	BOX （PCS）	Per Carton （PCS)）
H2302A	A2SHB	Tape and Reel	SOT-23	3000	30000	450000

ABSOLUTE MAX IMUM RATINGS （T_C=25℃, unless otherwise specified）

Parameter	Symbol	Conditions	Value	Unit
Drain-Source Voltage	V_{DSS}		20	V
Gate-Source Voltage	V_{GSS}		±12	
Continuous Drain Current	I_D	T_C=25℃	4	A
		T_C=70℃	3.2	
Pulsed Drain Current Note1	I_{DM}	T_C=25℃	16	
Single Pulsed Avalanche Energy Note2	E_{AS}		2.25	mJ
Power Dissipation	P_D	T_C=25℃ T_C=70℃	0.75 0.50	W
Junction-to-Ambient	$R_{\theta JA}$	Notes4	170 100	℃/W
Operating and Storage Temperature	T_J, T_{stg}		-55 to +150	℃

Electrical Characteristics（T_J=25℃ unless otherwise specified）

Off Characteristic

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS}=0V, I_D=250μA	20	--	--	V
Zero gate voltage drian current	I_{DSS}	V_{DS}=20V, V_{GS}=0V	--	--	1.0	μA
Gate-source leakage current	I_{GSS}	V_{DS}=0V, V_{GS}=±12V	--	--	±100	nA

On Characteristics

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static Drain-Source on-Resistance Note3	$R_{DS(on)}$	V_{GS}=4.5V, I_D=2.5A	--	23	30	mΩ
		V_{GS}=2.5V, I_D=1.5A	--	32	45	
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS}, I_D=250μA	0.5	0.7	1	V

Dynamic Characteristics

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Iutput capacitance	C_{iss}	V_{GS}=0V V_{DS}=10V f=1MHz	--	300	--	pF
Output capacitance	C_{oss}		--	51	--	
Reverse transfer capacitance	C_{rss}		--	30	--	
Gate to source charge	Q_{gs}	V_{DS}=10V I_D=2A V_{GS}=4.5V	--	1.9	--	nC
Gate to drain charge	Q_{gd}		--	0.45	--	
Gate charge total	Q_g		--	0.75	--	

Switching Characteristics

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Turn-on Delay Time	$t_{d(on)}$	V_{DS}=10V V_{GS}=4.5V I_D=2A R_{GEN}=3Ω	--	9.8	--	nS
Risse time	t_r		--	4.9	--	
Turn-off delay time	$t_{d(off)}$		--	20.5	--	
Fall time	t_f		--	7	--	

Drain-Source Diode Characteristics and Maximum Ratings

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Maximum Continuous Drain to Source Diode Forward Current	I_S	T_C=25℃	--	--	4	A
Maximum Pulsed Drain to Source Diode Forward Current	I_{SM}	T_C=25℃	--	--	16	
Drain to Source Diode Forward Voltage	V_{SD}	V_{GS}=0V，I_S=4A	--	--	1.2	V

Notes：

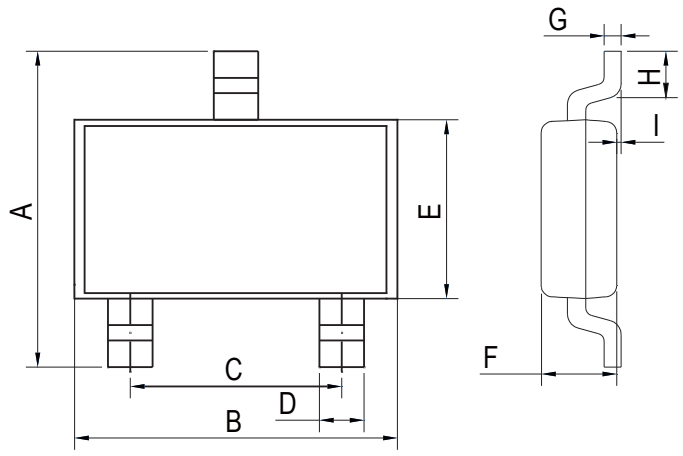
1、Repetitive Rating: Pulse Width Limited by Maximum Junction Temperature

2、PulseTest: Pulse Width≤00μs, Duty Cycle≤2%

3、Repetitive rating; pulse width limited by max. junction temperature.

4、Surface mounted on 1 in square Cu board.

SOT-23 Package Mechanical Data



REF.	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	2.30	2.50	0.091	0.098
B	2.80	3.00	0.110	0.118
C	1.90 REF		0.075 REF	
D	0.35	0.45	0.014	0.018
E	1.20	1.40	0.047	0.055
F	0.90	1.10	0.035	0.043
G	0.10	0.15	0.004	0.006
H	0.20		0.008	
I	0	0.10	0	0.004

Manufacturers version information
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