

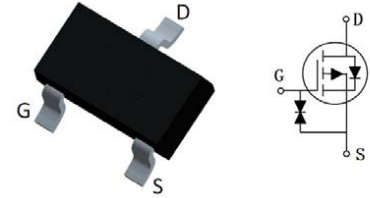
Features

- Low $R_{DS(on)}$ @ $V_{GS}=-10V$
- -5V Logic Level Control
- P Channel SOT23 Package
- ESD Protection
- Pb-Free, RoHS Compliant

$V_{(BR)DSS}$	$R_{DS(ON)}$ Typ	I_D Max
-50V	1.8Ω @ -10V	-0.18A
	2Ω @ -4.5V	

Applications

- High-side Load Switch
- Switching Circuits
- High Speed line Driver
- General Purpose Interfacing Switch



Order Information

SOT23

Product	Package	Marking	Packing
BSS84	SOT23	B84	3000PCS/Reel

Absolute Maximum Ratings

Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

Symbol	Parameter	Rating	Unit
Common Ratings (TA=25°C Unless Otherwise Noted)			
V_{GS}	Gate-Source Voltage	±12	V
$V_{(BR)DSS}$	Drain-Source Breakdown Voltage	-50	V
T_J	Maximum Junction Temperature	150	°C
T_{STG}	Storage Temperature Range	-50 to 150	°C
Mounted on Large Heat Sink			
I_{DM}	Pulse Drain Current Tested①	$T_A = 25^\circ C$	-1.2 A
I_D	Continuous Drain Current	$T_A = 25^\circ C$	-0.18 A
		$T_A = 70^\circ C$	-0.14 A
P_D	Maximum Power Dissipation	$T_A = 25^\circ C$	0.3 W
		$T_A = 70^\circ C$	0.24 W
$R_{\theta JA}$	Thermal Resistance Junction-Ambient	400	°C/W

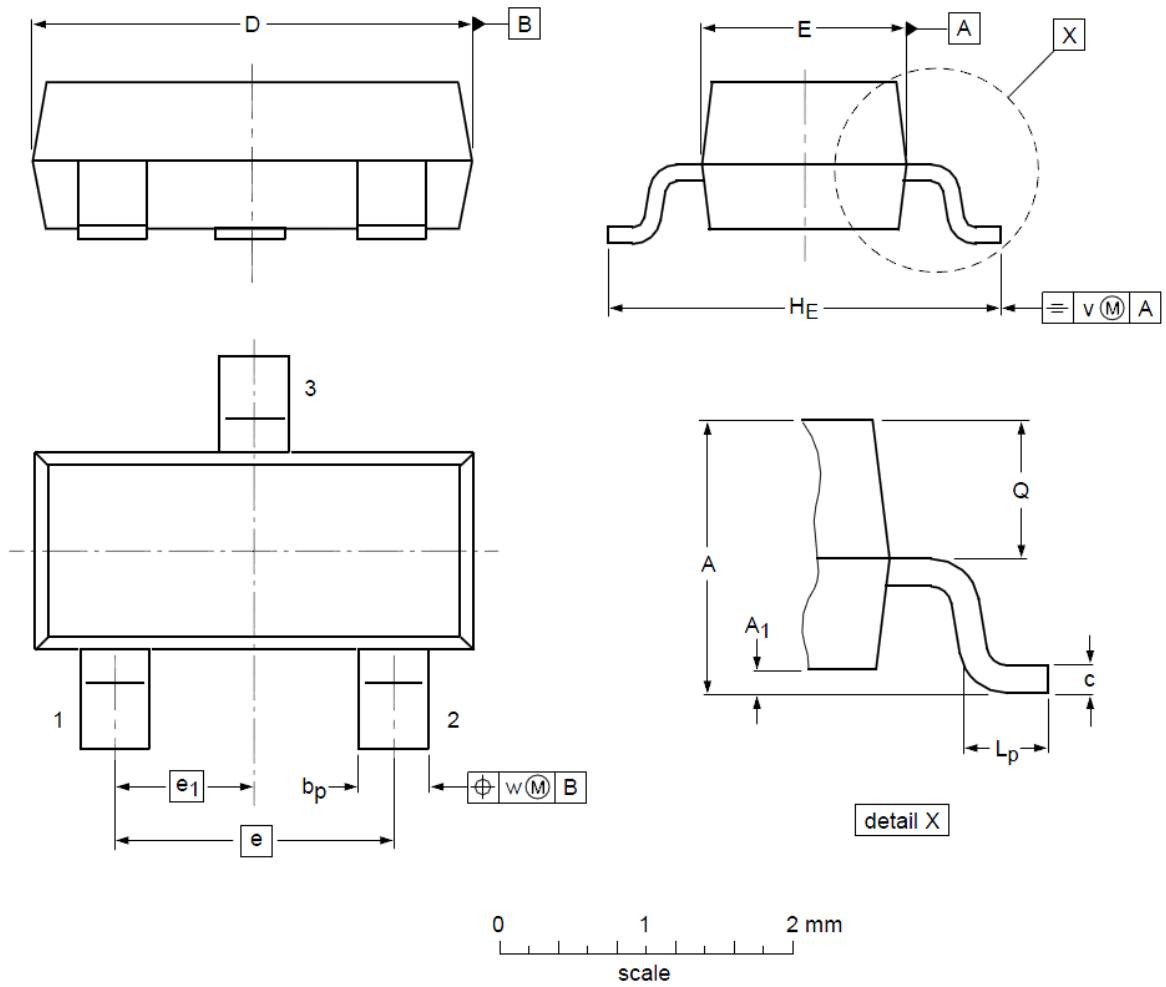
Symbol	Parameter	Condition	Min	Typ	Max	Unit
Static Electrical Characteristics @ T_J = 25°C (unless otherwise stated)						
V _{(BR)DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V I _D =-250μA	-50	--	--	V
I _{DSS}	Zero Gate Voltage Drain Current(T _A =25°C)	V _{DS} =-50V, V _{GS} =0V	--	--	-1	μA
	Zero Gate Voltage Drain Current(T _A =125°C)	V _{DS} =-40V, V _{GS} =0V	--	--	-100	uA
I _{GSS}	Gate-Body Leakage Current	V _{GS} =±12V, V _{DS} =0V	--	--	±10	uA
V _{GS(TH)}	Gate Threshold Voltage	V _{DS} =V _{GS} , I _D =-250μA	-0.8	-1.3	-2.0	V
R _{DS(ON)}	Drain-Source On-State Resistance②	V _{GS} =-10V, I _D =-0.15A	--	1.8	5	Ω
R _{DS(ON)}	Drain-Source On-State Resistance②	V _{GS} =-4.5V, I _D =-0.15A	--	2	8	Ω
Dynamic Electrical Characteristics @ T_J = 25°C (unless otherwise stated)						
C _{iss}	Input Capacitance	V _{DS} =-30V, V _{GS} =0V, f=1MHz	--	29.4	--	pF
C _{oss}	Output Capacitance		--	3	--	pF
C _{rss}	Reverse Transfer Capacitance		--	1.2	--	pF
Q _g	Total Gate Charge	V _{DS} =-30V I _D =-0.18A, V _{GS} =-4.5V	--	1.1	--	nC
Q _{gs}	Gate Source Charge		--	0.1	--	nC
Q _{gd}	Gate Drain Charge		--	0.3	--	nC
Switching Characteristics						
t _{d(on)}	Turn on Delay Time	V _{DD} =-30V, I _D =-0.1A, R _G =3.3Ω, V _{GS} =-10V	--	1.6	--	ns
t _r	Turn on Rise Time		--	5.2	--	ns
t _{d(off)}	Turn Off Delay Time		-	12	--	ns
t _f	Turn Off Fall Time		--	6.1	--	ns
Source Drain Diode Characteristics						
I _{SD}	Source drain current(Body Diode)	T _A =25°C	--	--	-0.18	A
V _{SD}	Forward on voltage②	T _J =25°C, I _{SD} =-0.18A, V _{GS} =0V	--	--	-1.2	V

Notes:

① Pulse width limited by maximum allowable junction temperature

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

SOT23 Mechanical Data



DIMENSIONS (unit : mm)

Symbol	Min	Typ	Max	Symbol	Min	Typ	Max
A	0.90	1.01	1.15	A ₁	0.01	0.05	0.10
b _p	0.30	0.42	0.50	c	0.08	0.13	0.15
D	2.80	2.92	3.00	E	1.20	1.33	1.40
e	--	1.90	--	e ₁	--	0.95	--
H _E	2.25	2.40	2.55	L _p	0.30	0.42	0.50
Q	0.45	0.49	0.55	v	--	0.20	--
w	--	0.10	--				

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