

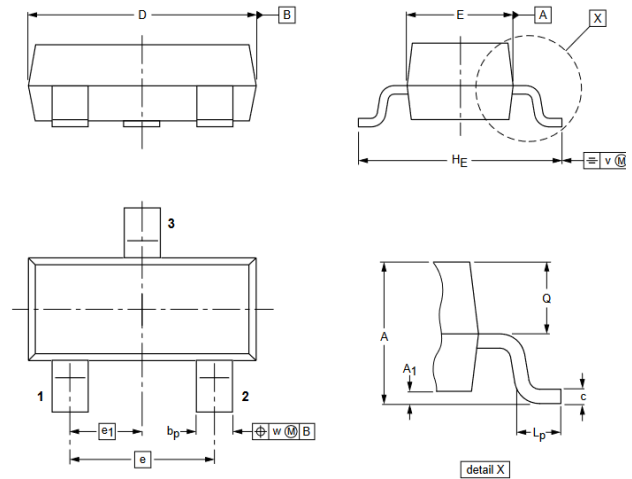
N-Channel MOSFET

Primary characteristics			
Symbol	Parameter	Value	Unit
I_D	Continuous drain current (@ $T_a=25^\circ\text{C}$)	130	mA
V_{DS}	Drain source voltage	50	V
P_D	Power Dissipation	225	mW

Features

- **SOT-23** case for easy automatic insertion
- Pb-free and **RoHS** compliant
- Energy efficient
- High speed switching
- ESD protected 2kV HBM

Case dimensions



1 – Gate; 2 – Source; 3 - Drain

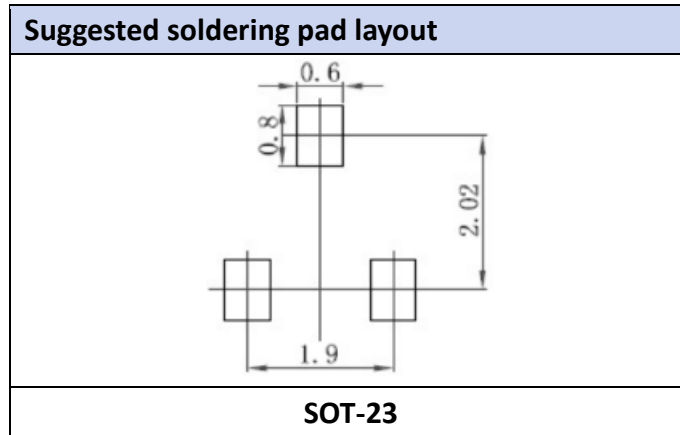
SOT-23 (TO-236AB)

Unit	A	A _{1max}	b _p	c	D	E	e	e ₁	H _E	L _p	Q	v	w
mm	1.0 ±0.1	0.1	0.43 ±0.05	0.12 ±0.03	2.9 ±0.1	1.3 ±0.1	1.9	0.95	2.3 ±0.2	0.3 ±0.15	0.5 ±0.05	0.2	0.1

Absolute maximum ratings ($T_A = 25^\circ\text{C}$ unless otherwise noted)

Characteristic	Symbol	Value	Unit
Drain-source voltage	V_{DS}	50	V
Gate-source voltage	V_{GS}	±20	V
Continuous drain current	I_D	130	mA
Pulsed drain current	I_{DM}	520	mA
Power Dissipation	P_D	225	mW
Operating junction temperature range	T_J, T_{STG}	-55 ~ 150	°C
Maximum junction-ambient	$R_{\theta JA}$	556	°C/W

Electrical characteristics (T _A = 25°C)						
Characteristic	Test condition	Symbol	Value			Unit
			Min.	Typ.	Max.	
Drain-source breakdown voltage	I _D =250μA, V _{GS} =0V	V _{DSS}	50	-	-	V
Zero gate voltage drain current	V _{DS} =50V, V _{GS} =0V	I _{DSS}	-	-	1.0	μA
	V _{DS} =25V, V _{GS} =0V		-	-	0.1	
Gate-body leakage current	V _{DS} =0V, V _{GS} =±20V	I _{GSS}	-	1.0	5.0	
Gate threshold voltage	V _{DS} =V _{GS} , I _D =250μA	V _{GS(th)}	0.9	1.3	2.0	V
Static drain-source on-state resistance	V _{GS} =10V, I _D =100mA	R _{DS(ON)}	-	1.7	8.0	Ω
	V _{GS} =5.0V, I _D =100mA		-	1.9	10	
Body diode forward voltage	V _{GS} =0V, I _S =130mA	V _{SD}	-	-	1.2	V
Dynamic electrical characteristics						
Characteristic	Test condition	Symbol	Min.	Value Typ.	Max.	Unit
Forward transconductance	V _{DS} =25V, I _D =100mA	g _{FS}	50	-	-	mS
Input capacitance	V _{DS} =5V V _{GS} =0V f=1.0MHz	C _{iss}	-	30	-	pF
Output capacitance		C _{oss}	-	10	-	
Reverse transfer capacitance		C _{rss}	-	5.0	-	
Switching characteristics						
Characteristic	Test condition	Symbol	Min.	Value Typ.	Max.	Unit
Turn on delay time	V _{DD} =15V R _L =50Ω I _D =2.5A	t _{d(ON)}	-	2.5	-	ns
Turn on rise time		t _r	-	1.0	-	
Turn off delay time		t _{d(OFF)}	-	16	-	
Turn off fall time		t _f	-	8.0	-	
Source drain diode characteristics						
Characteristic	Test condition	Symbol	Min.	Value Typ.	Max.	Unit
Diode forward current		I _S	-	-	130	mA
Diode pulsed forward current	I _S =340mA, V _{GS} =0V	I _{SM}	-	-	520	mA



Ordering information			
Part Number	Package	Shipping Quantity	Dimensions
BSS84	SOT-23	3 000 pcs / 7" reel 24 000 pcs / box 120 000pcs / carton	---

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