■ Description

MST52LXXB series are manufactured by CMOS technology, with the highest input voltage of 24V. The series is a high voltage linear regulator with multiple fixed output voltages. MST52LXXB series has 3 packaging forms and 9 pin arrangement modes, making it more convenient for customers to make PCB board layout .

■ Product purpose

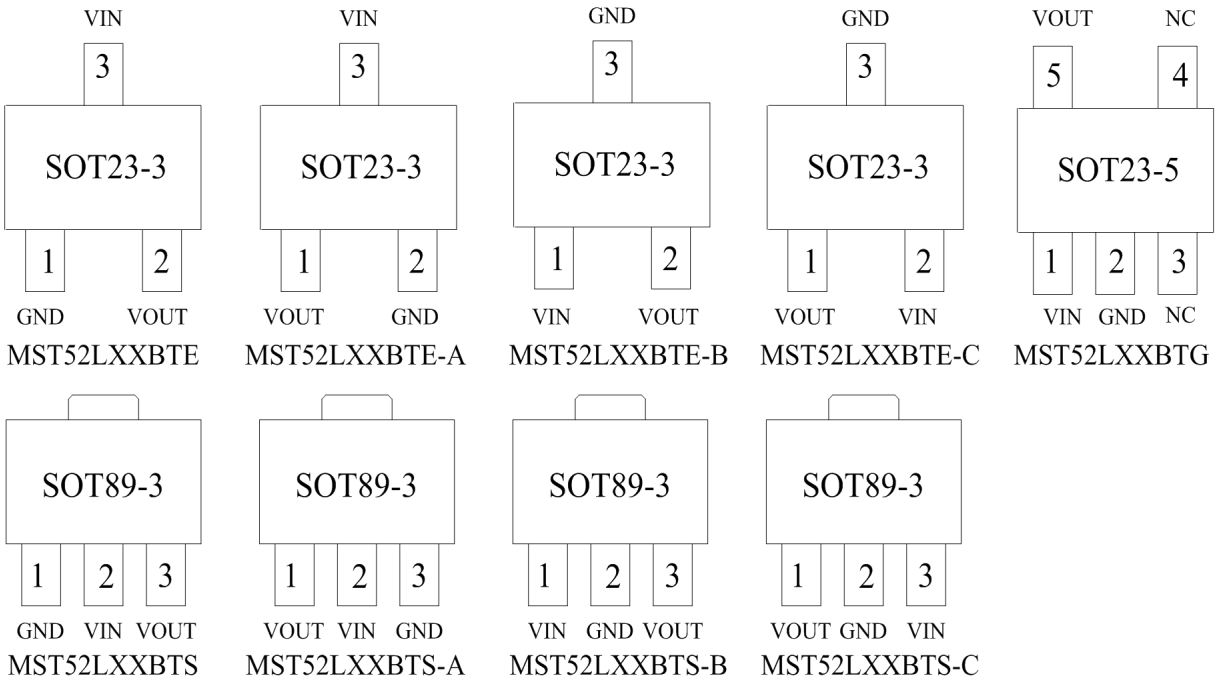
- A power supply device for batteries, etc
- Communication device
- Audio/video device
- Security monitoring equipment

■ Functional characteristics

- High input voltage：24V
- Multiple pin arrangements：9
- High precision output voltage：±2%
- Preset Output Voltage： 1.8V , 2.5V , 2.8V , 3.0V , 3.3V , 3.6V , 4.0V , 4.2V , 5.0V

MST52LXXBTE MST52LXXBTE-A MST52LXXBTE-B MST52LXXBTE-C	SOT23-3
MST52LXXBTS MST52LXXBTS-A MST52LXXBTS-B MST52LXXBTS-C	SOT89-3
MST52LXXBTG	SOT23-5

■ Encapsulation with pin definition

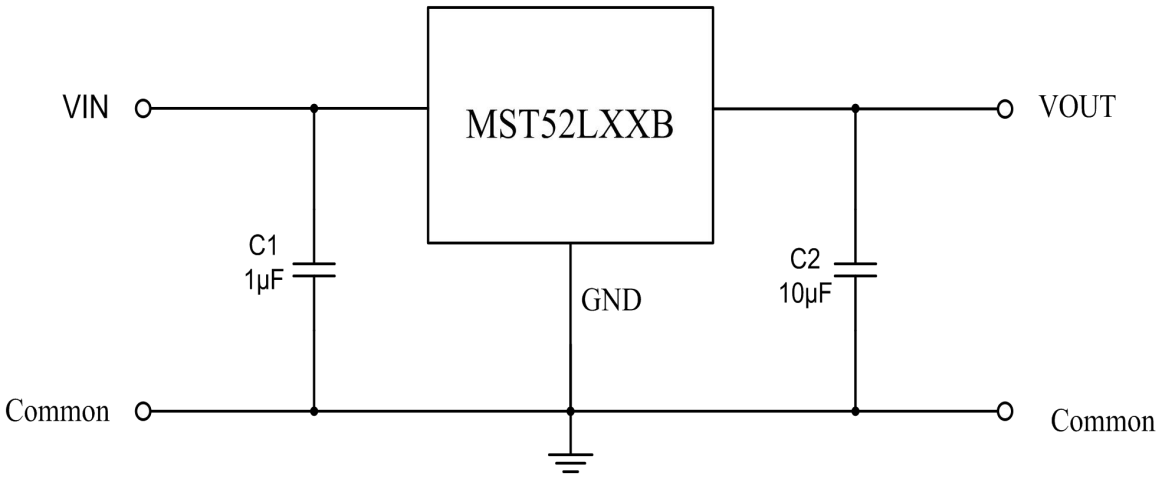


■ Pin Description

SOT23-3				SOT23-5	The name of the pin	Pin Description
MST52L XXBTE	MST52L XXBTE-A	MST52L XXBTE-B	MST52L XXBTE-C	MST52LXXBTG		
1	2	3	3	2	GND	System ground
2	1	2	1	5	VOUT	Output pin
3	3	1	2	1	VIN	Input pin
				3,4	NC	Empty pin

SOT89-3				The name of the pin	Pin Description
MST52LXX BTS	MST52LXX BTS-A	MST52LXXB TS-B	MST52LXXB TS-C		
1	3	2	2	GND	System ground
3	1	3	1	VOUT	Output pin
2	2	1	3	VIN	Input pin

■ Application circuit



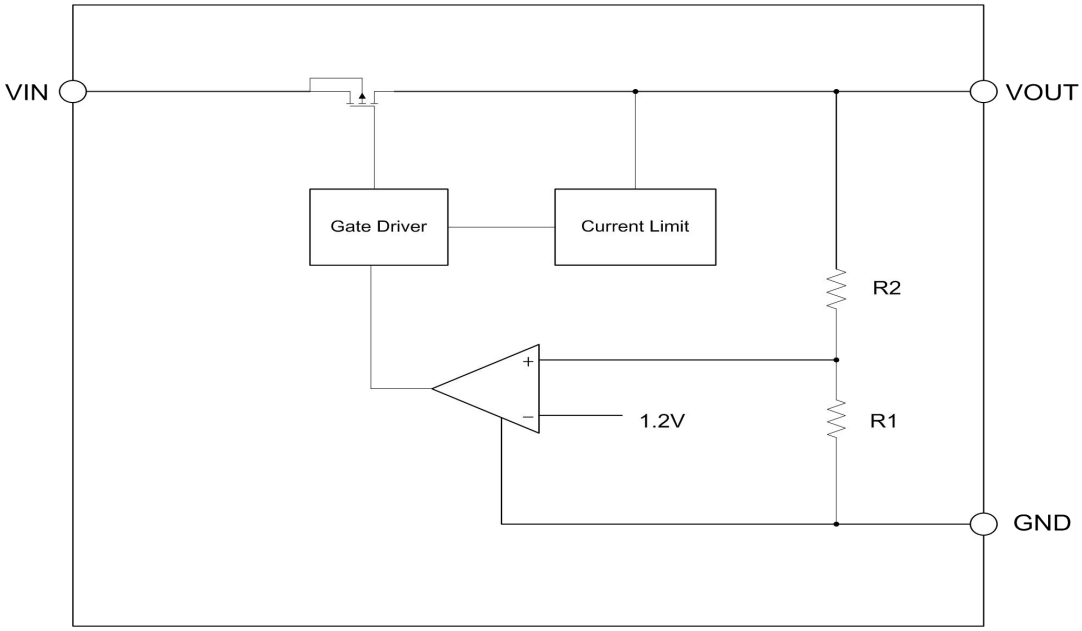
■ Absolute Maximum Ratings

Project	Symbol	Description	Limit Value	Unit
Voltage	VIN ~ GND	Input voltage	30	V
	VOUT ~ GND	Output voltage	12	V
Electricity	I	Electricity	Within limits	mA
Temperature	Tw	Working Temperature	-20~70	℃
	Tc	Storage temperature	-50~125	℃
	Th	Welding temperature	260	℃
ESD	HBM	Human Body Model	4	kV
	MM	Mechanical Mode	100	V

■ Electrical Characteristics (MST52LXXB Series T_A=25°C)

Symbol	Parameter	Test Condition	Min	Typ	Max	Unit
V_{IN}	Input voltage	no-load loss	3	—	24	V
I_{GND}	Quiescent current	VIN=12V, no-load loss	—	—	3	μA
VOUT	Output Voltage	V_{IN}=12V, I_{OUT}=10mA	V_{OUTNOM} * 0.98	V_{OUTNOM}	V_{OUTNOM} * 1.02	V
I_{OUT_MAX}	Output current	Maximum Output Current	—	150	—	mA
Dropout Voltage	Dropout voltage (MST52L50B)	150mA	—	700	900	mV
		100mA	—	500	600	
	Dropout voltage (MST52L33B)	150mA	—	800	990	mV
		100mA	—	500	700	
	Dropout voltage (MST52L30B)	150mA	—	800	990	mV
		100mA	—	500	700	
ΔV_{OUT}	Load Regulation	At VIN= 10V, the output current goes from 1mA to 150mA	—	45	80	mV
ΔV_{OUT} x100/ ΔV_{IN} x V_{OUT}	Line Regulation	When the output is 10mA, the input voltage is VOUT+2V to 24V	—	0.15	—	%/V
I_{SHORT}	short-circuit current	Output short circuit current to ground	—	100	—	mA

■ Functional Diagram

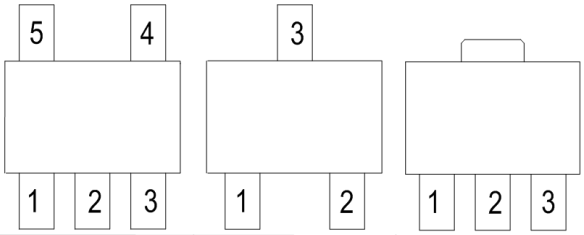


■ Marking information

Part Number

MST52LXXBTE-A

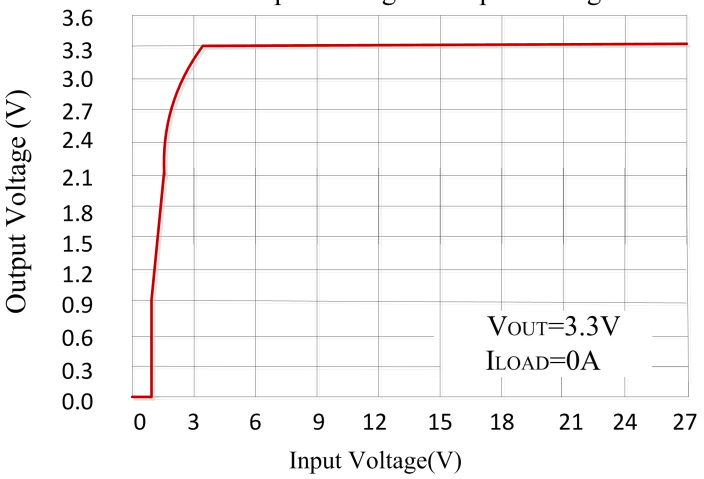
- Pin definition
- Package definition
- Voltage accuracy
- Product Name
- Company Name

Package Outline			
Minimum Package	SOT23-5 3000pcs/Reel	SOT23-3 3000pcs/Reel	SOT89-3 1000pcs/Reel
Marking	M52L33BA 1918R A:Pin definition B:B(±2%) A(±1%) C(±3%) 52LXX:52L18(1.8V) 52L33(3.3V) 52L30(3.0V) 52L50(5.0V)等 R:Internal Code.Variable. 1918:19-2019;18-the 18th week of this year M:M(SOT89-3) blank(SOT23)		

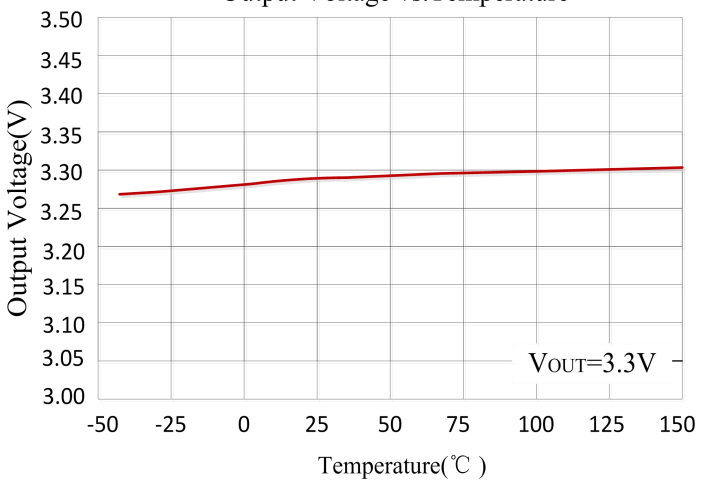
■ Typical Performance Characteristics

Test Condition: T_A=25°C,Vin=12V,Iout=1mA,C_{OUT}=10uF, unless otherwise note

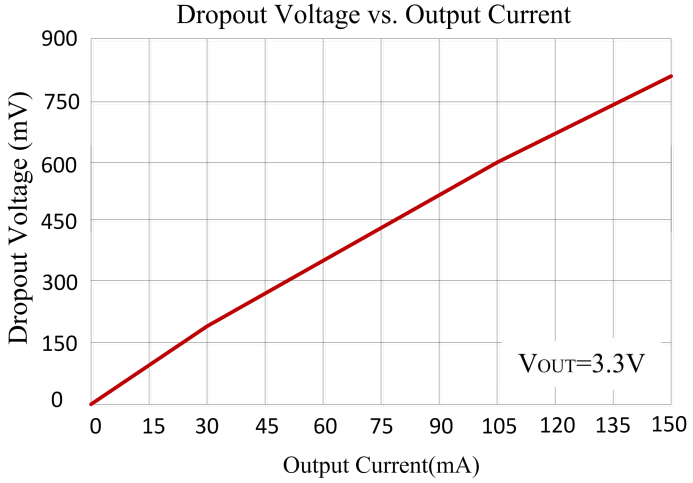
Output Voltage vs. Input Voltage



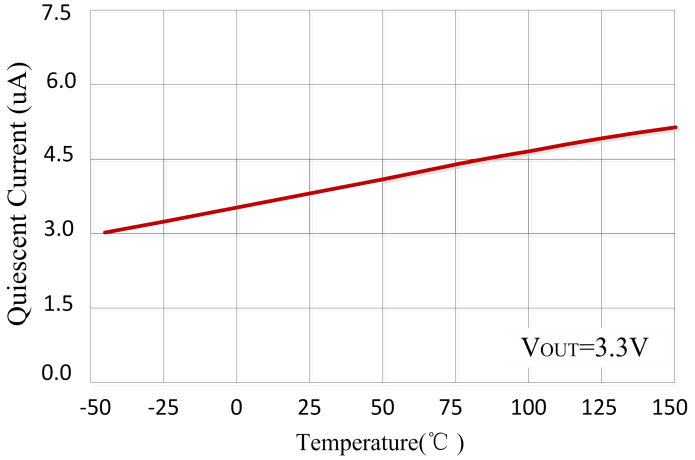
Output Voltage vs.Temperature



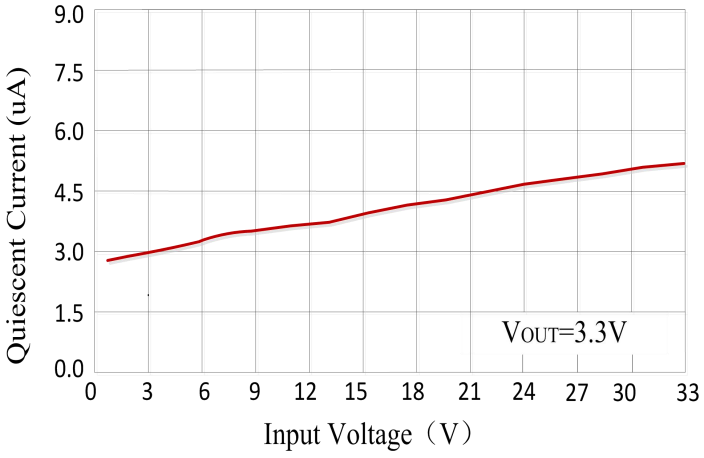
Dropout Voltage vs. Output Current



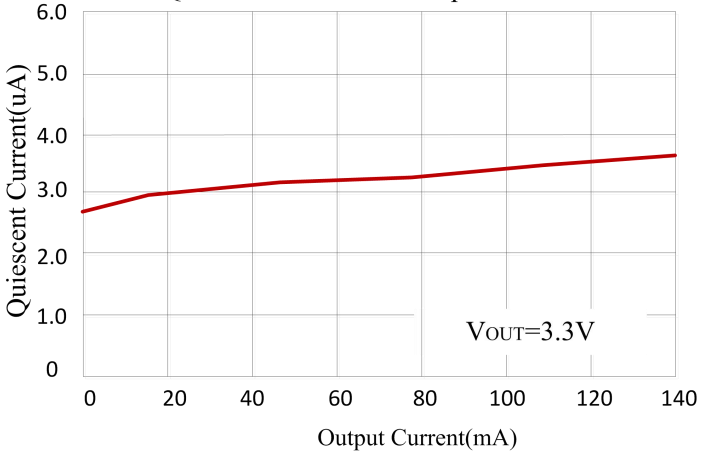
Quiescent Current vs.Temperature



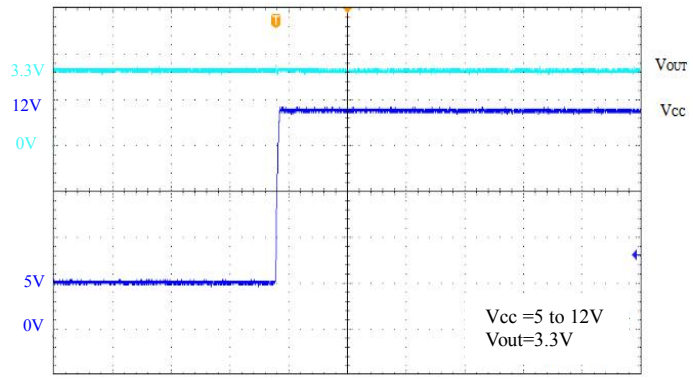
Quiescent Current vs. Input Voltage



Quiescent Current vs. Output Current

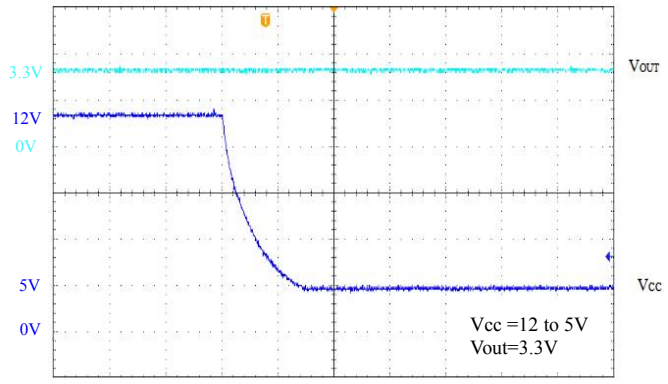


Line Transient Response



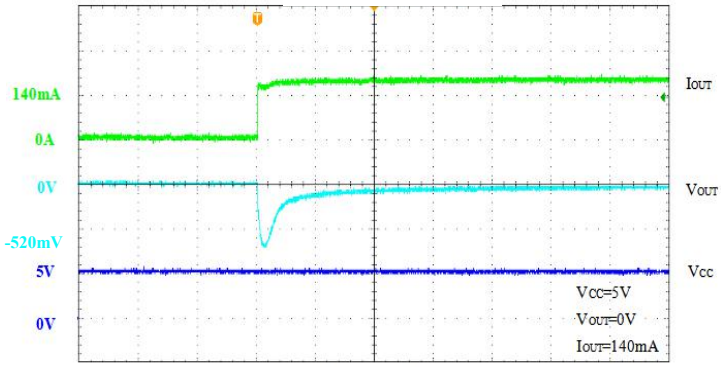
Time(4us/div)

Line Transient Response



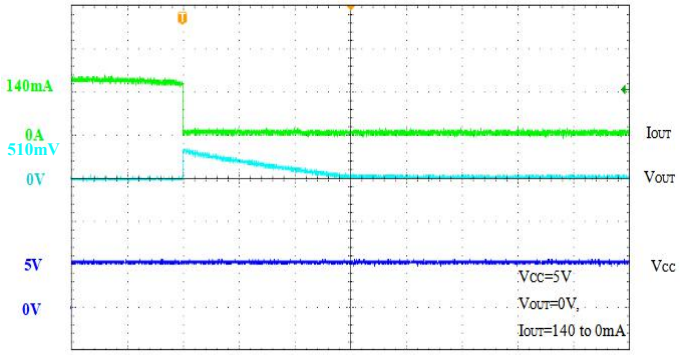
Time(4us/div)

Load Transient Response



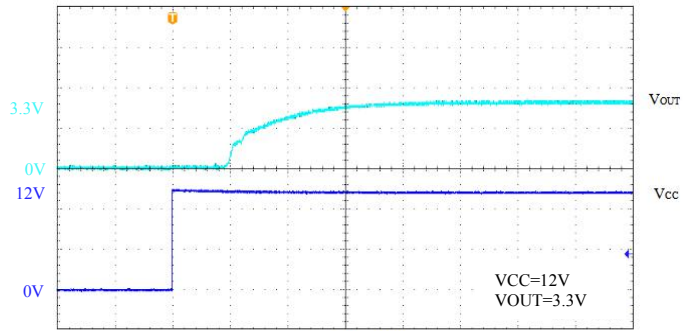
Time(200us/div)

Load Transient Response



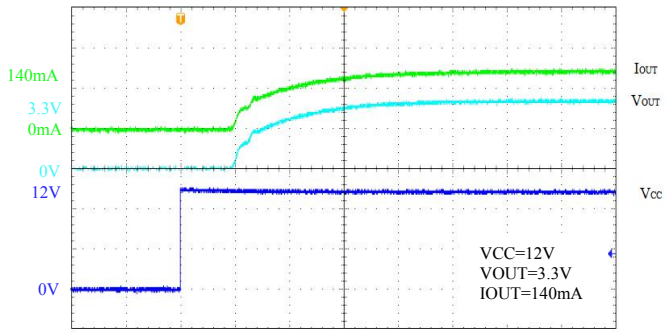
Time(200us/div)

Start Up



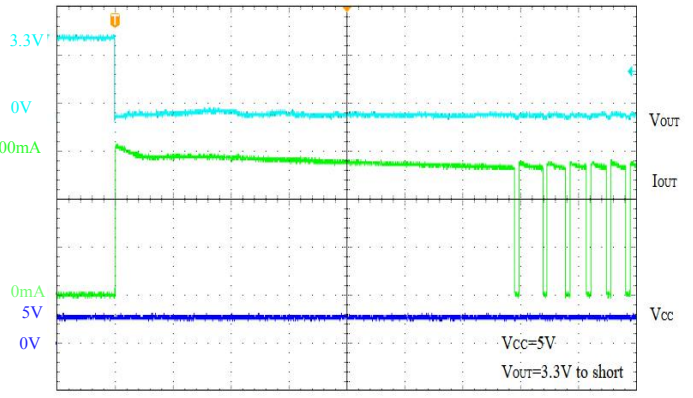
Time(50us/div)

Start Up



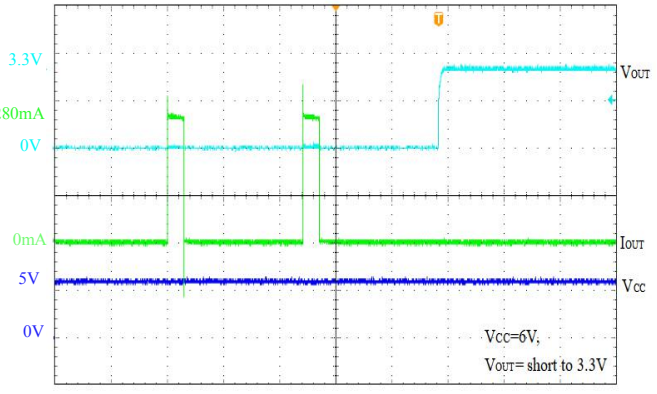
Time(50us/div)

Short Circuit Protection



Time(20ms/div)

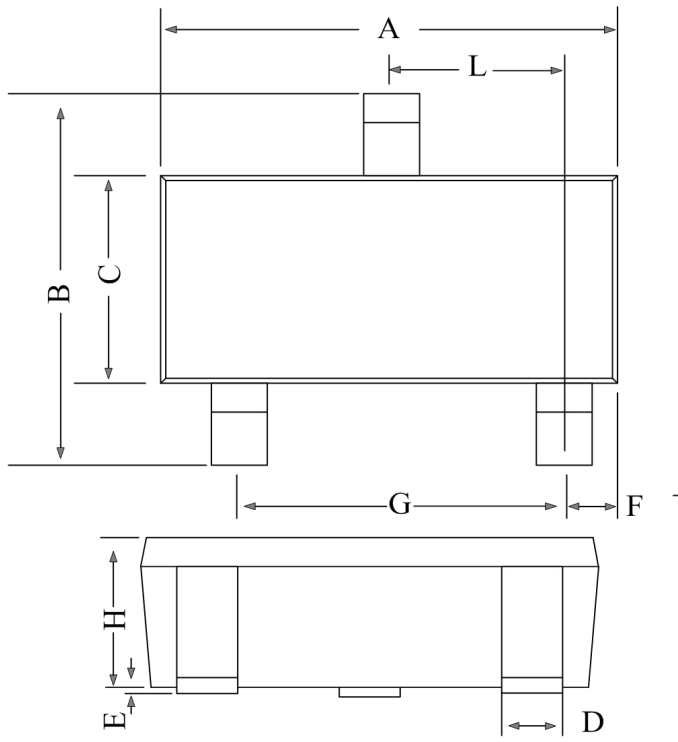
Short Circuit Protection



Time(2ms/div)

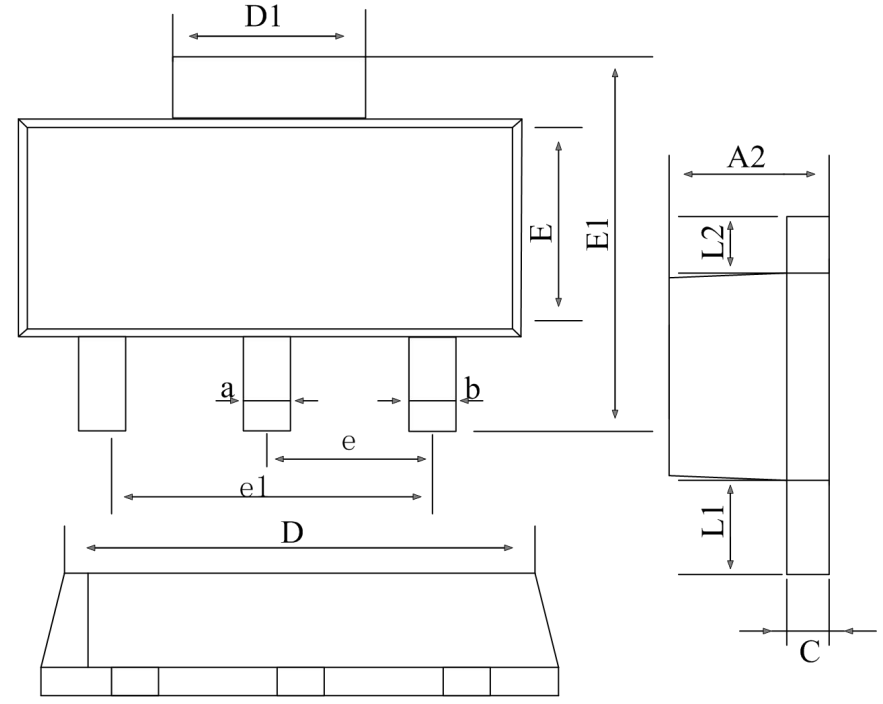
■ Package Information

SOT23-3



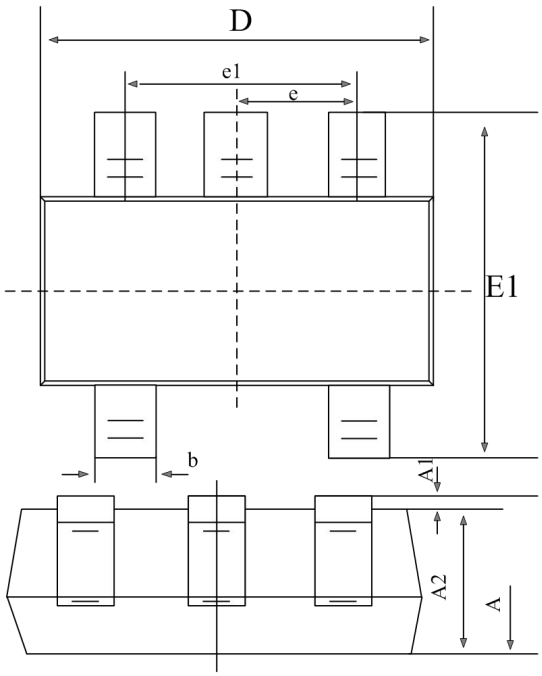
REF.	Millimeter	
	Min.	Max.
A	2. 82	2. 92
B	2. 65	2. 95
C	1. 56	1. 60
D	0. 35	0. 55
E	0	0. 1
F	0. 45	0. 55
G	1. 90 REF.	
H	1. 0	1. 3
K	0. 10	0. 20
J	0. 40	_
L	0. 85	1. 15
M	0^{0}	10^{0}

SOT89-3



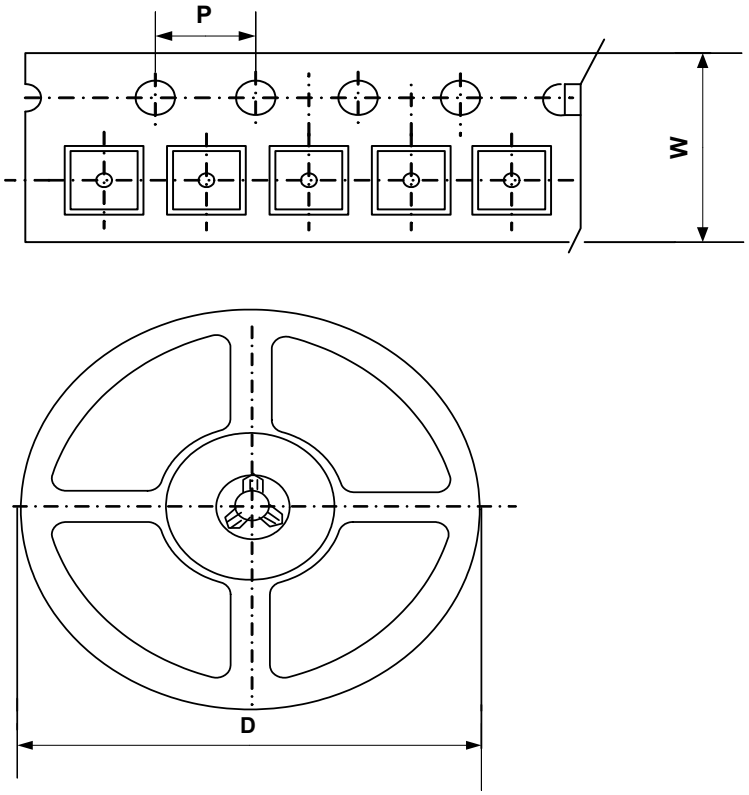
REF.	Millimeter	
	Min.	Max.
A2	1. 4	1. 6
a	0. 45	0. 55
b	0. 38	0. 48
c	0. 36	0. 46
D	4. 40	4. 60
D1	1. 60	1. 80
E	2. 40	2. 60
E1	4. 00	4. 30
e	1. 00	2. 00
e1	2. 95	3. 05
L1	0. 80	1. 00
L2	0. 65	0. 75

SOT23-5



REF.	Millimeter	
	Min.	Max.
A	1.05	1.25
A1	0	0.1
A2	1.05	1.15
b	0.3	0.5
c	0.1	0.2
D	2.85	3.05
E	1.5	1.7
E1	2.65	2.95
e	0.95(BSC)	
e1	1.8	2.0
L	0.3	0.6
θ	0°	8°

■ Packing Information



Type	W(mm)	P(mm)	D(mm)	Qty (pcs)
SOT23-3 SOT23-5	12.0±0.1 mm	8.0±0.1 mm	330±1 mm	3000pcs
SOT89-3	/	/	/	1000pcs

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