

## ■ 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

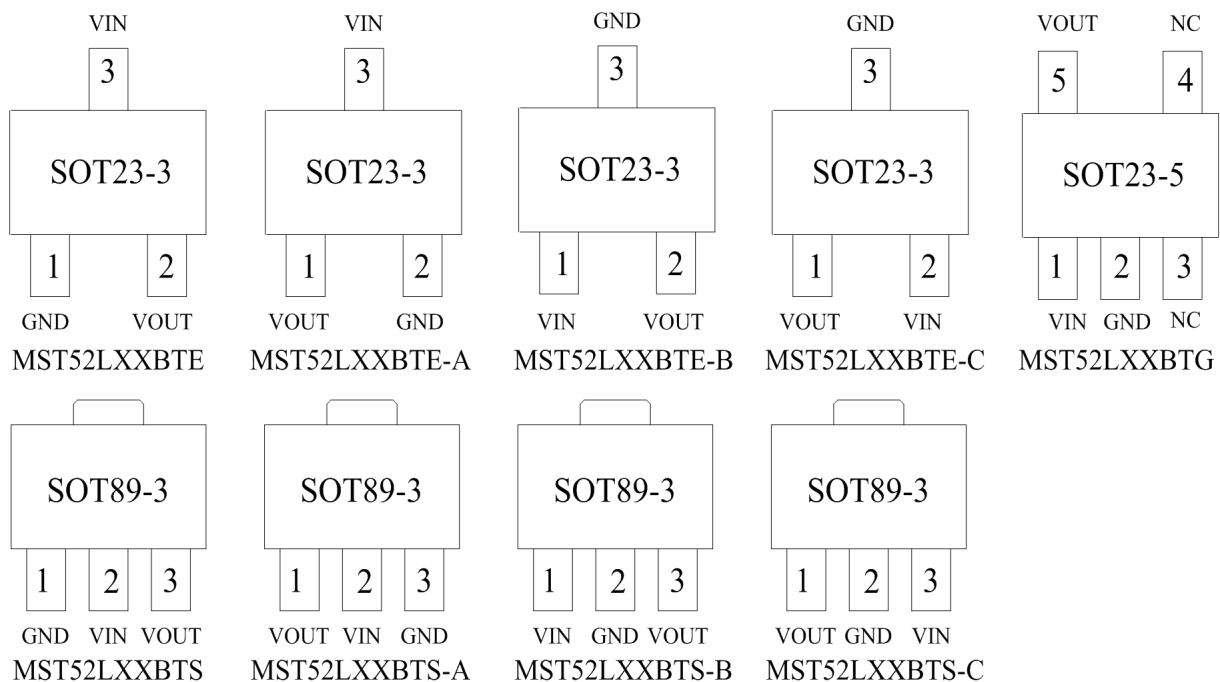
- A power supply device for batteries, etc
- Communication device
- Audio/video device
- Security monitoring equipment

## ■ Functional characteristics

- High input voltage: 24V
- Multiple pin arrangements: 9
- High precision output voltage:  $\pm 2\%$
- 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

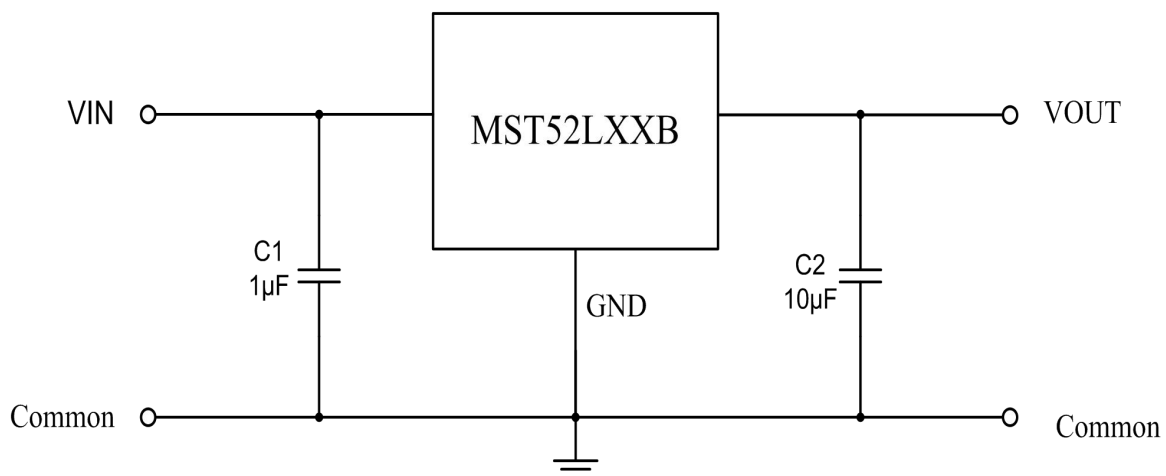
## ■ Encapsulation with pin definition



## ■ Pin Description

SOT23-3				SOT23-5	The name of the pin	Pin Description
MST52LXXBTE	MST52LXXBTE-A	MST52LXXBTE-B	MST52LXXBTE-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	
MST52LXXBTS	MST52LXXBTS-A	MST52LXXBTS-B	MST52LXXBTS-C			
1	3	2	2	GND	System ground	
3	1	3	1	VOUT	Output pin	
2	2	1	3	VIN	Input pin	

## ■ Application circuit



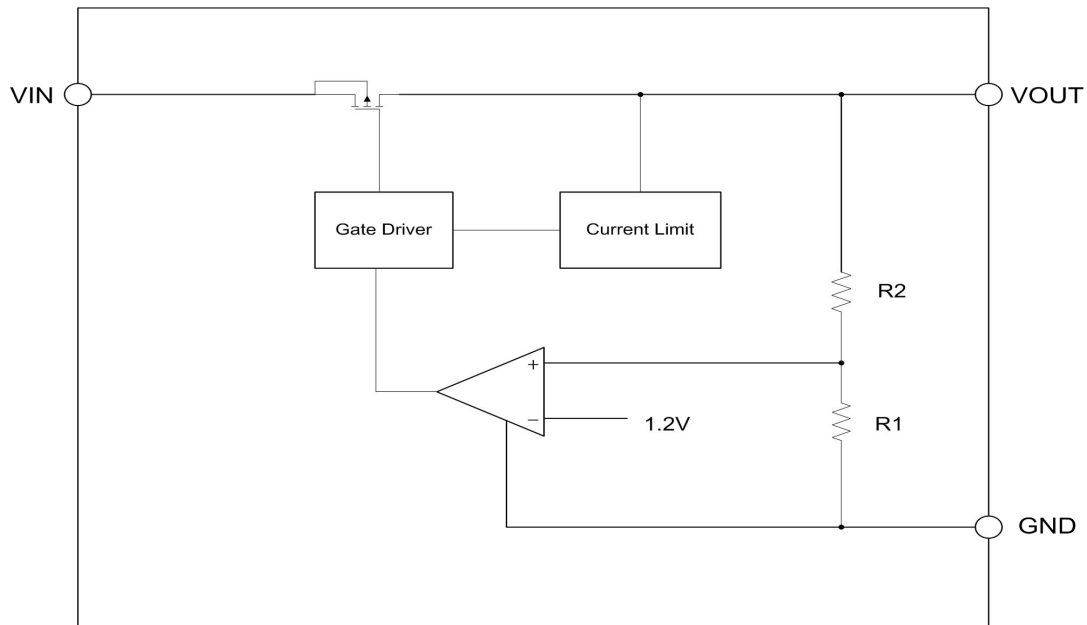
## ■ Absolute Maximum Ratings

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	°C
	Tc	Storage temperature	-50~125	°C
	Th	Welding temperature	260	°C
ESD	HBM	Human Body Model	4	kV
	MM	Mechanical Mode	100	V

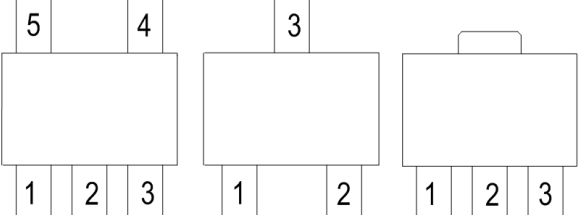
## ■ Electrical Characteristics ( MST52LXXB Series T<sub>A</sub>=25°C )

Symbol	Parameter	Test Condition	Min	Typ	Max	Unit
V <sub>IN</sub>	Input voltage	no-load loss	3	—	24	V
I <sub>GND</sub>	Quiescent current	V <sub>IN</sub> =12V, no-load loss	—	—	3	μA
V <sub>OUT</sub>	Output Voltage	V <sub>IN</sub> =12V, I <sub>OUT</sub> =10mA	V <sub>OUTNOM</sub> * 0.98	V <sub>OUTNOM</sub>	V <sub>OUTNOM</sub> * 1.02	V
I <sub>OUT_MAX</sub>	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 <sub>OUT</sub>	Load Regulation	At V <sub>IN</sub> = 10V, the output current goes from 1mA to 150mA	—	45	80	mV
ΔV <sub>OUT</sub> x100/ ΔV <sub>IN</sub> x V <sub>OUT</sub>	Line Regulation	When the output is 10mA, the input voltage is V <sub>OUT</sub> +2V to 24V	—	0.15	—	%/V
I <sub>SHORT</sub>	short-circuit current	Output short circuit current to ground	—	100	—	mA

## ■ Functional Diagram

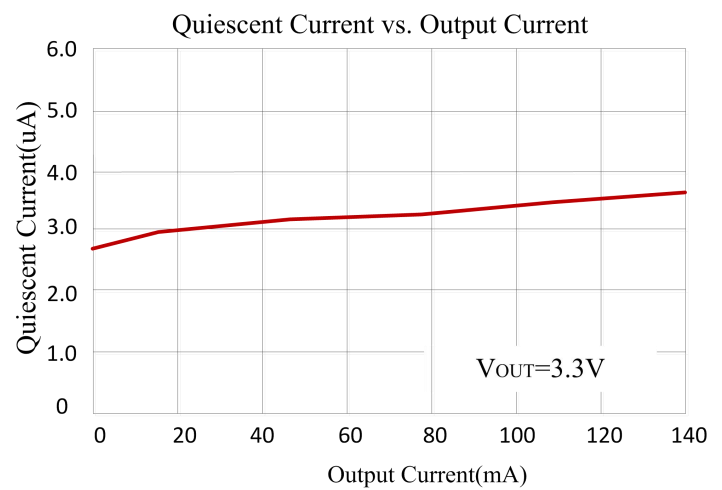
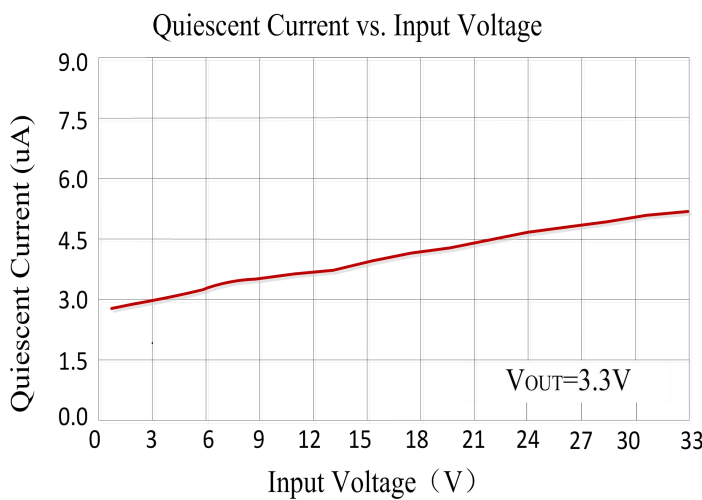
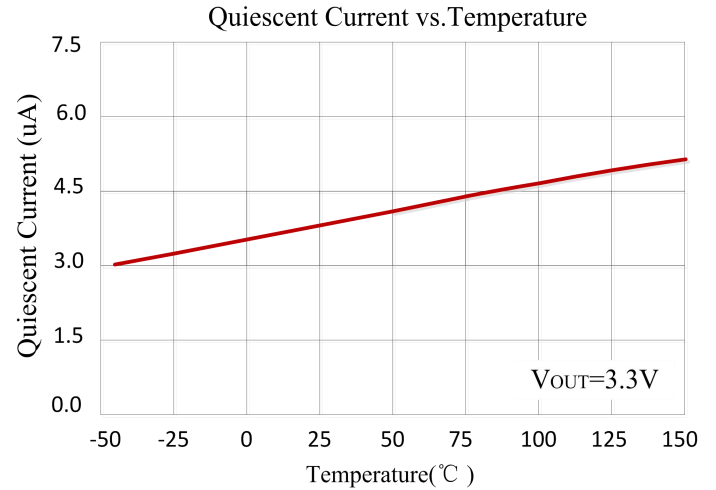
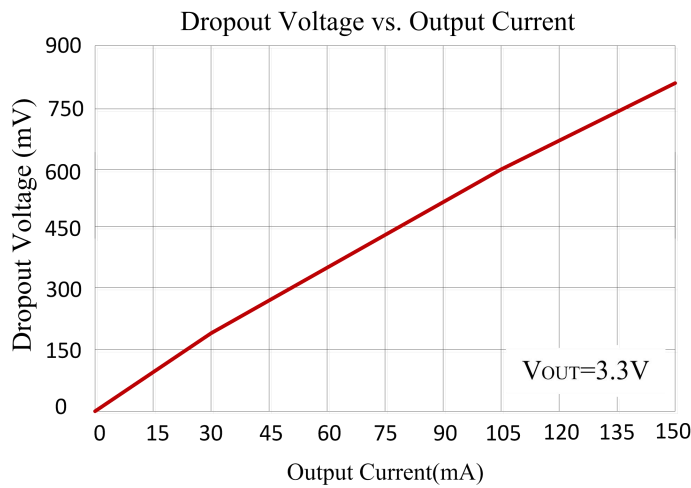
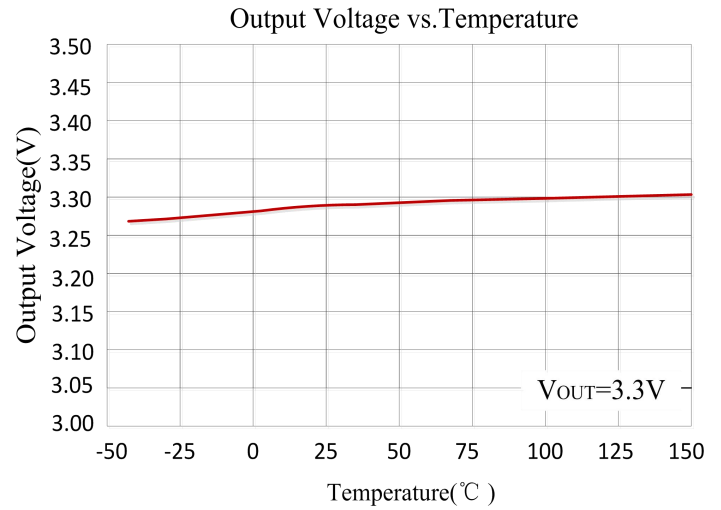
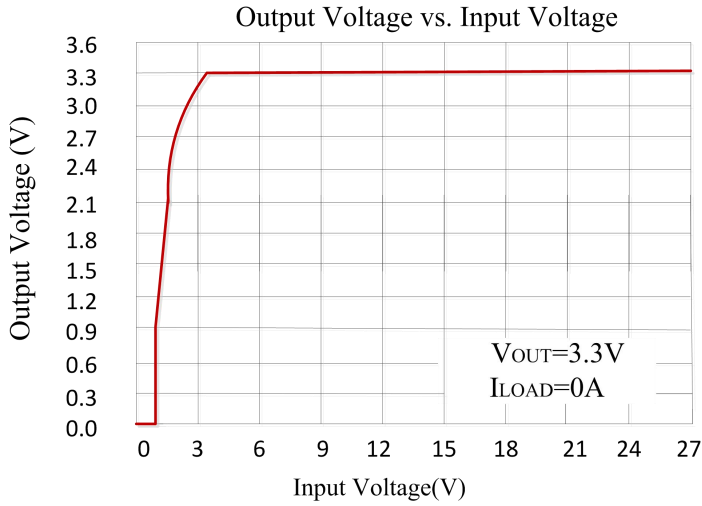


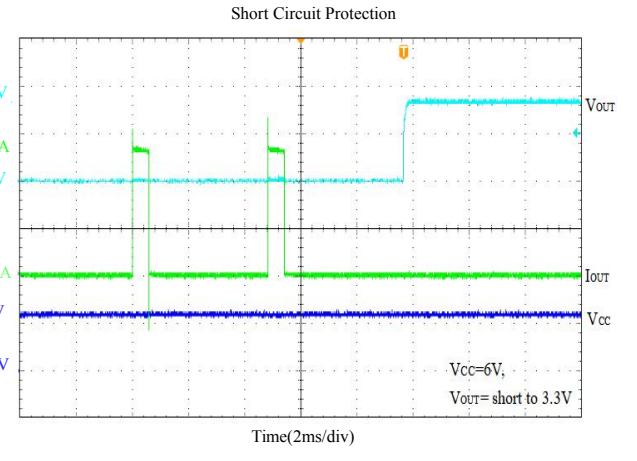
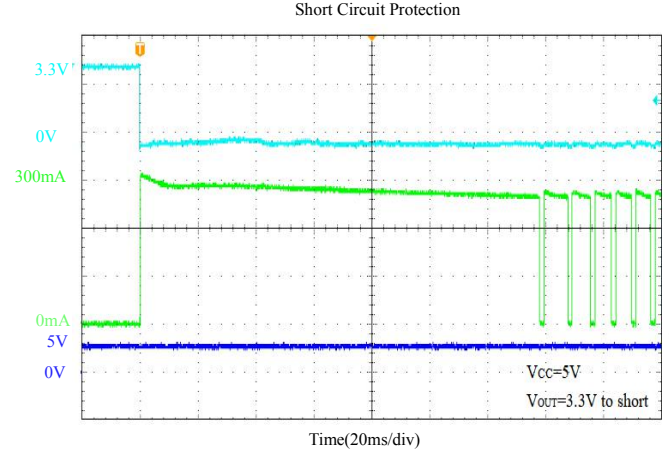
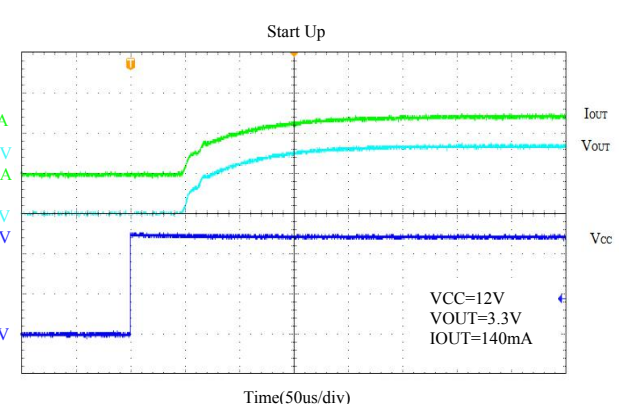
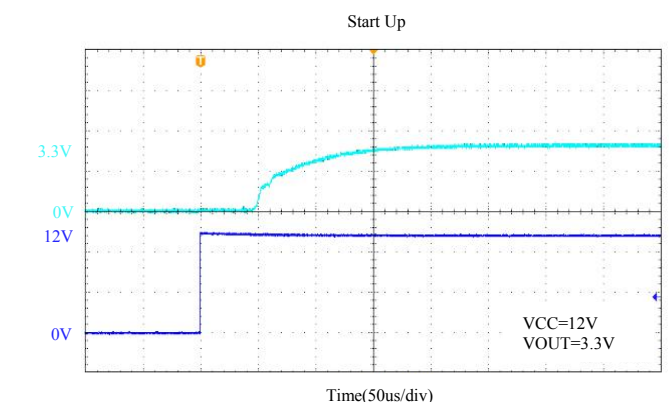
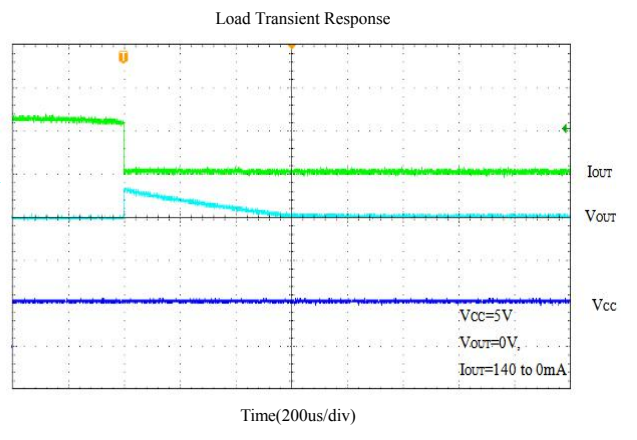
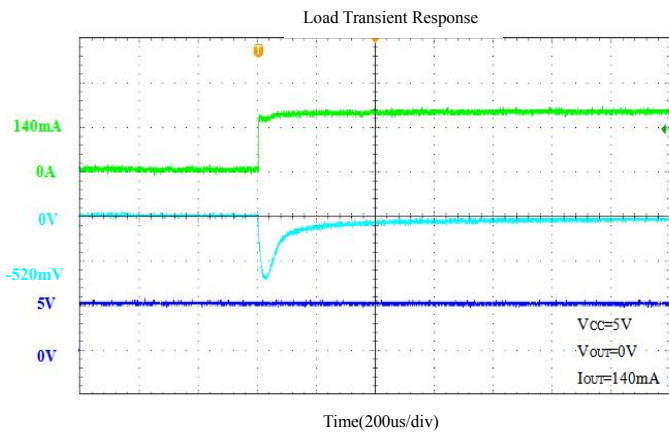
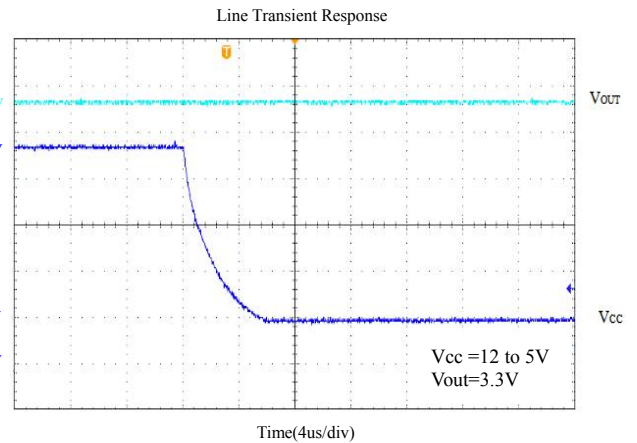
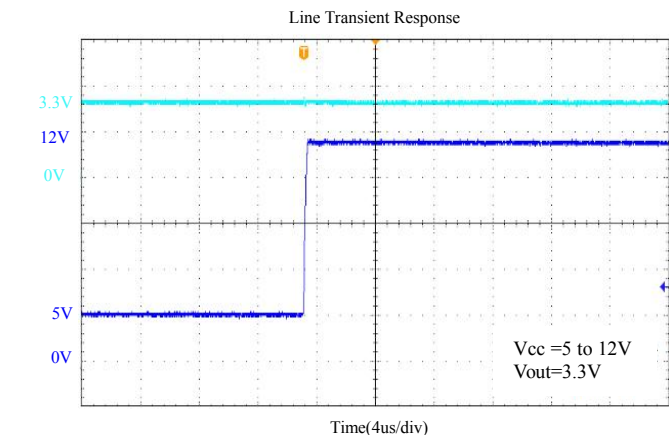
## ■ Marking information

Part Number	Package Outline			
<p><b>MST52LXXBTE-A</b></p> <ul style="list-style-type: none"> <li>— Pin definition</li> <li>— Package definition</li> <li>— Voltage accuracy</li> <li>— Product Name</li> <li>— Company Name</li> </ul>	<b>Minimum Package</b>	SOT23-5 3000pcs/Reel	SOT23-3 3000pcs/Reel	SOT89-3 1000pcs/Reel
	<b>Marking</b>	<p><b>M52L33BA</b></p> <p>1918R</p> <ul style="list-style-type: none"> <li>— A: Pin definition</li> <li>— B: B(±2%) A(±1%) C(±3%)</li> <li>— 52LXX: 52L18(1.8V) 52L33(3.3V) 52L30(3.0V) 52L50(5.0V)等</li> <li>— R: Internal Code. Variable.</li> <li>— 1918: 19-2019; 18-the 18th week of this year</li> <li>— M: M(SOT89-3) blank(SOT23)</li> </ul>		

## ■ Typical Performance Characteristics

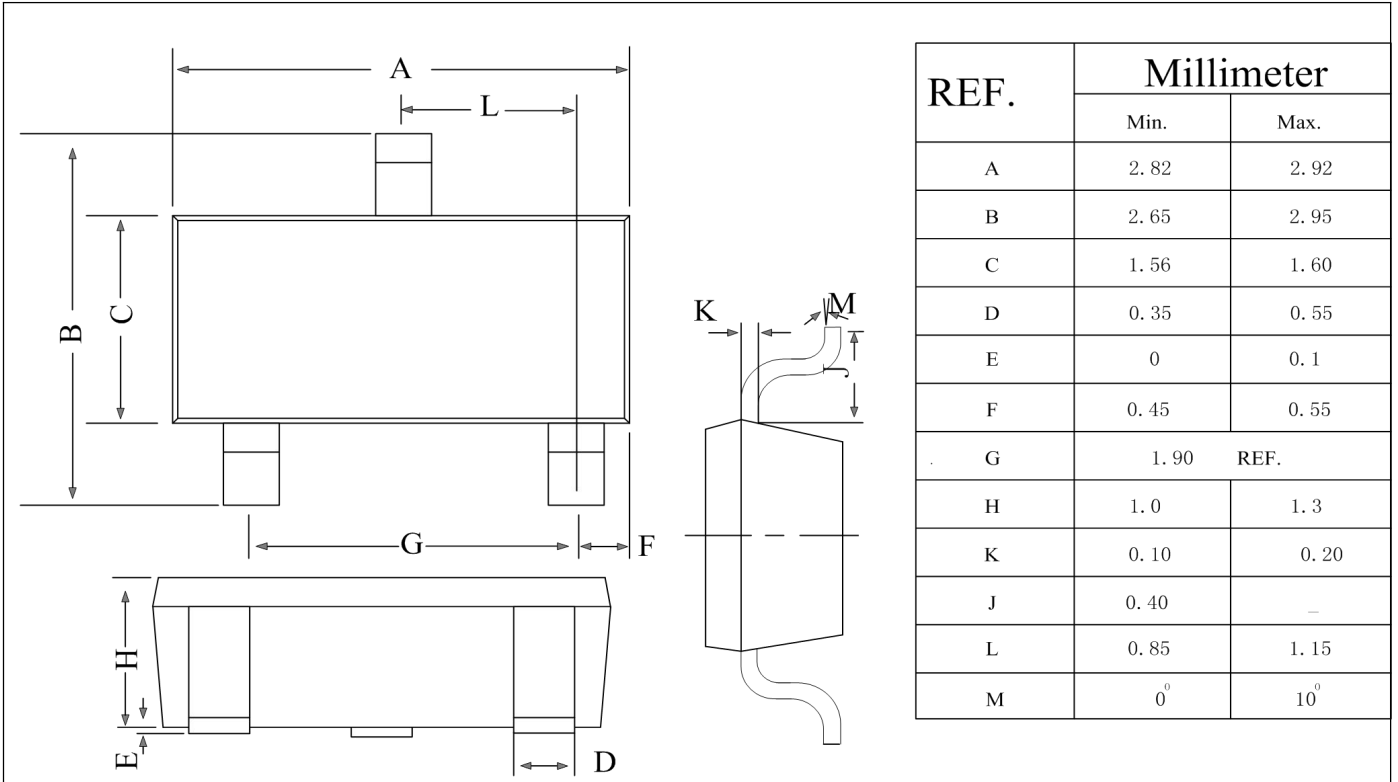
Test Condition:  $T_A=25^{\circ}\text{C}$ ,  $V_{in}=12\text{V}$ ,  $I_{out}=1\text{mA}$ ,  $C_{OUT}=10\mu\text{F}$ , unless otherwise note



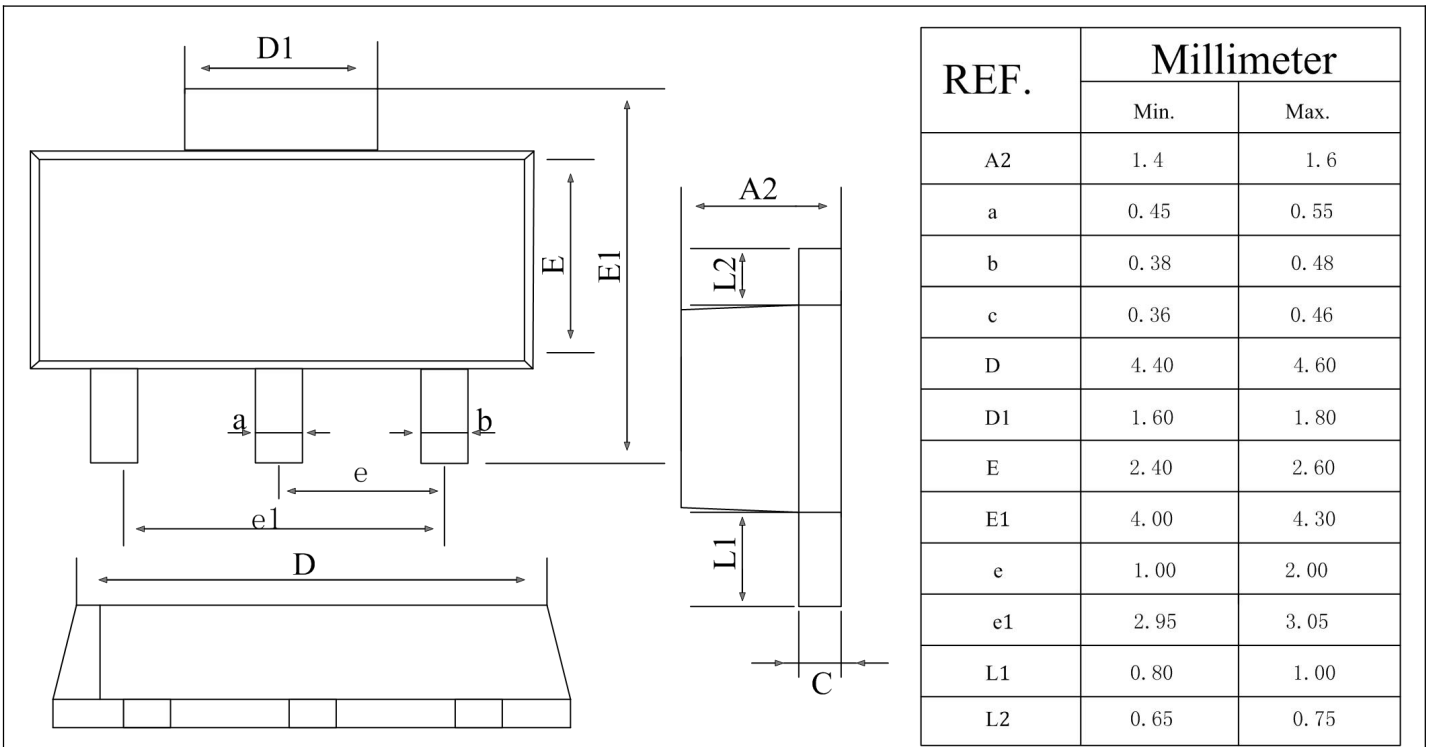


■ Package Information

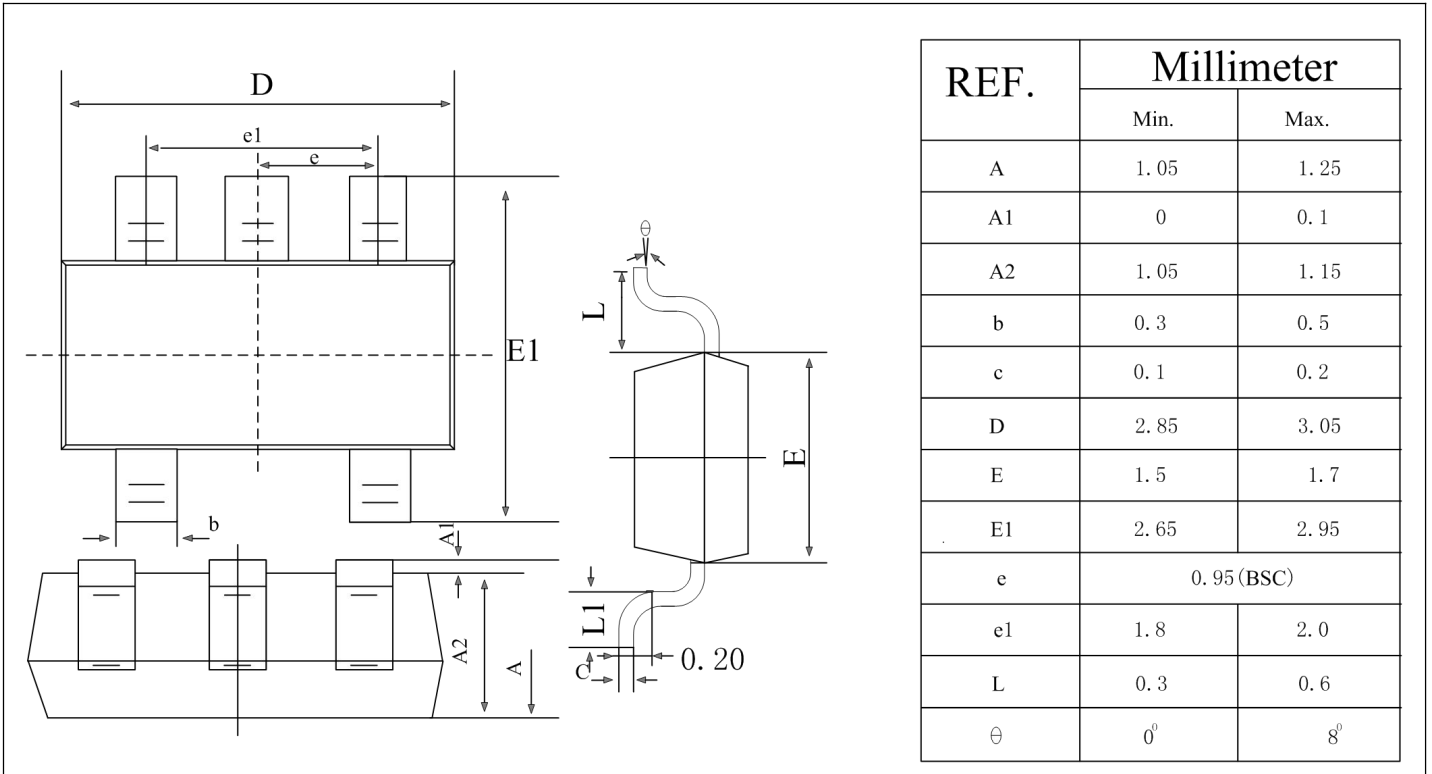
**SOT23-3**



**SOT89-3**

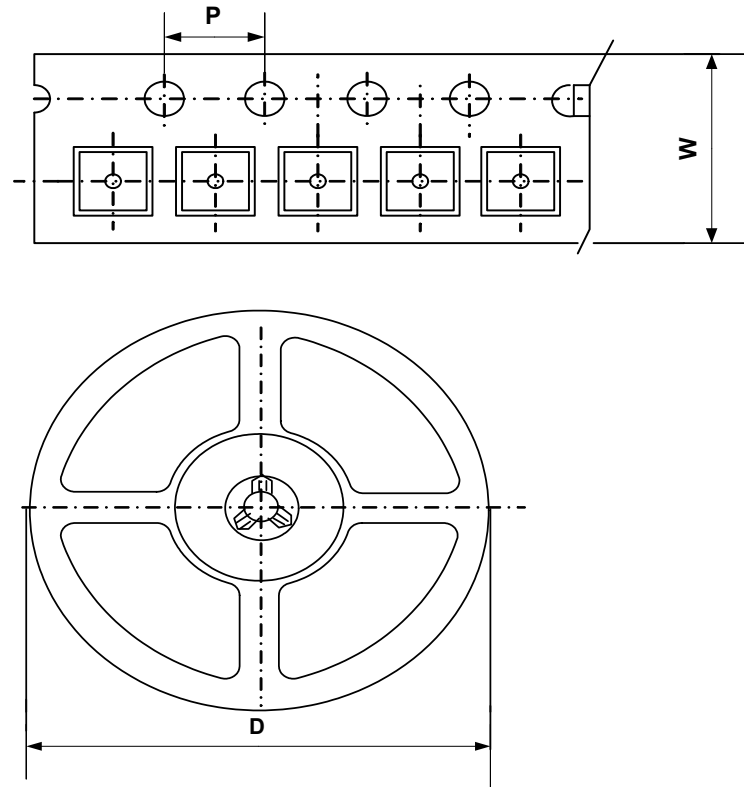


**SOT23-5**





■ 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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