

■ Description

ASPL52LXXB 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. ASPL52LXXB 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

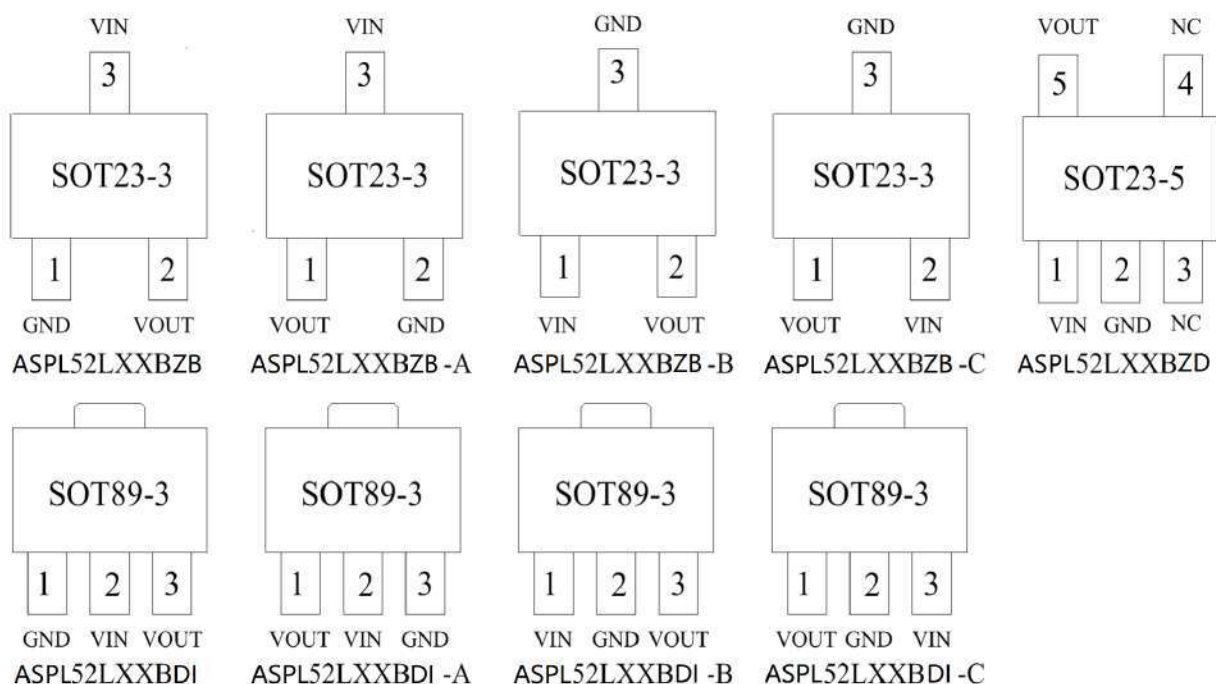
■ Functional characteristics

- 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

ASPL52LXXBZB ASPL52LXXBZB-A ASPL52LXXBZB-B ASPL52LXXBZB-C	SOT23-3
ASPL52LXXBDI ASPL52LXXBDI-A ASPL52LXXBDI-B ASPL52LXXBDI-C	SOT89-3
ASPL52LXXBZD	SOT23-5

Note: For the definition of P/N,
Please refer to page 7 of the specification.

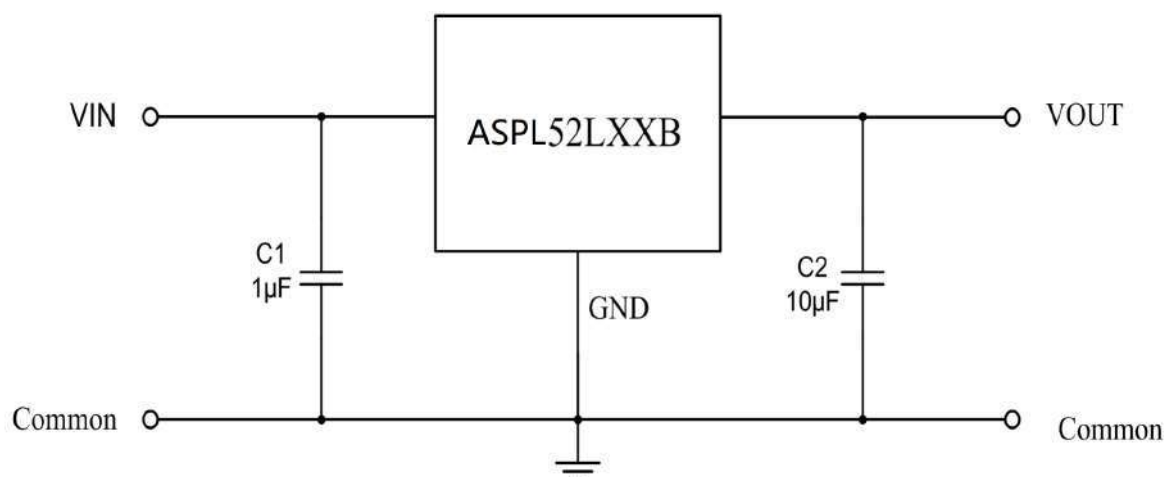
■ Encapsulation with pin definition



■ Pin Description

SOT23-3				SOT23-5	The name of the pin	Pin Description
ASPL52LXXBZB	ASPL52LXXBZB-A	ASPL52LXXBZB-B	ASPL52LXXBZB-C	ASPL52LXXBZD		
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
ASPL52LXXBDI	ASPL52LXXBDI-A	ASPL52LXXBDI-B	ASPL52LXXBDI-C			
1	3	2	2	GND	System ground	
3	1	3	1	VOUT	Output pin	
2	2	1	3	VIN	Input pin	

■ Application circuit



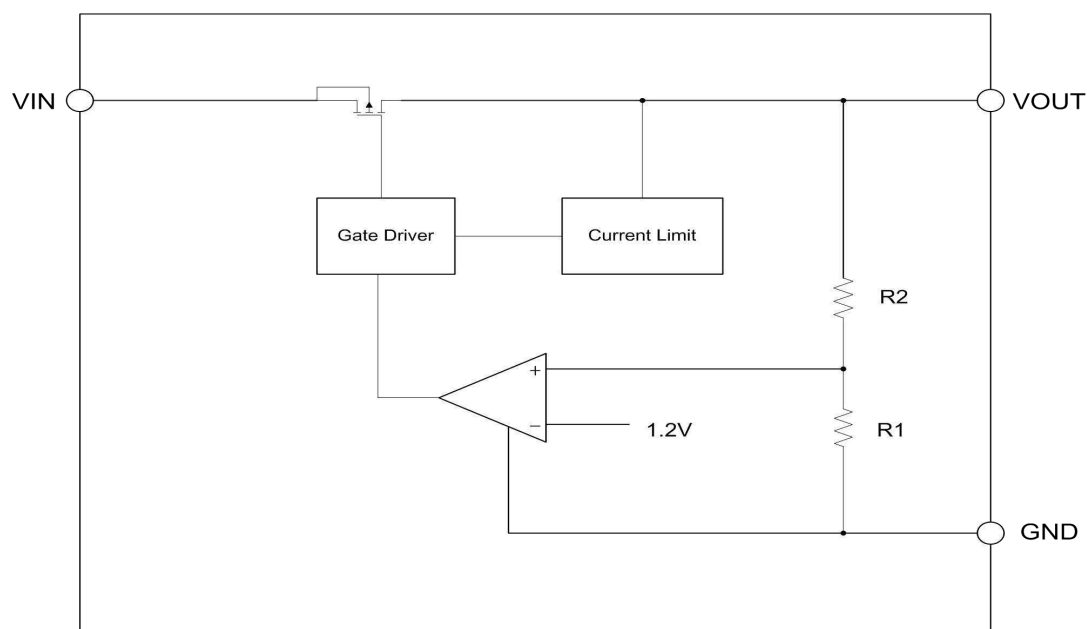
■ Absolute Maximum Ratings

Project	Symbol	Description	Limit Value	Unit
Voltage	VIN ~ GND	Input voltage	30	V
	VOU ~ 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 (ASPL52LXXB Series TA=25°C)

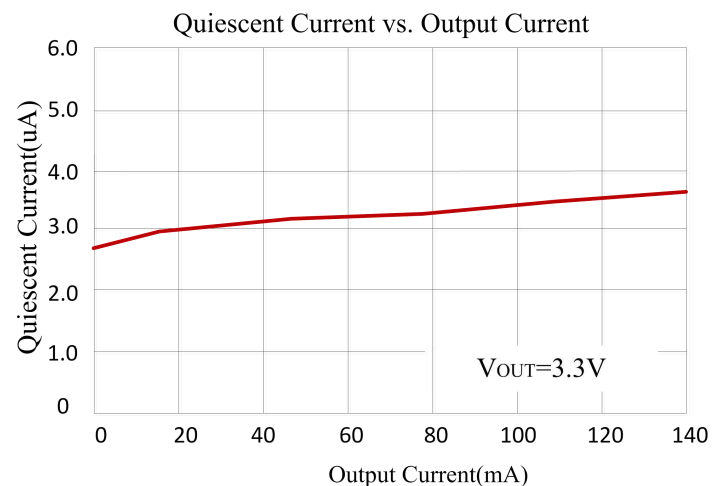
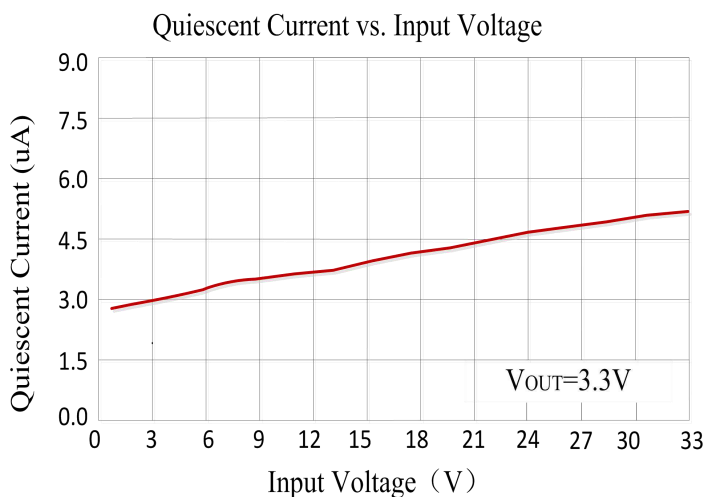
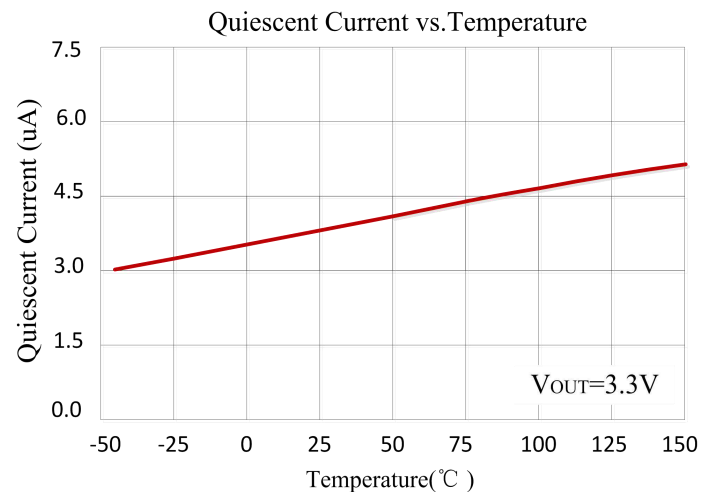
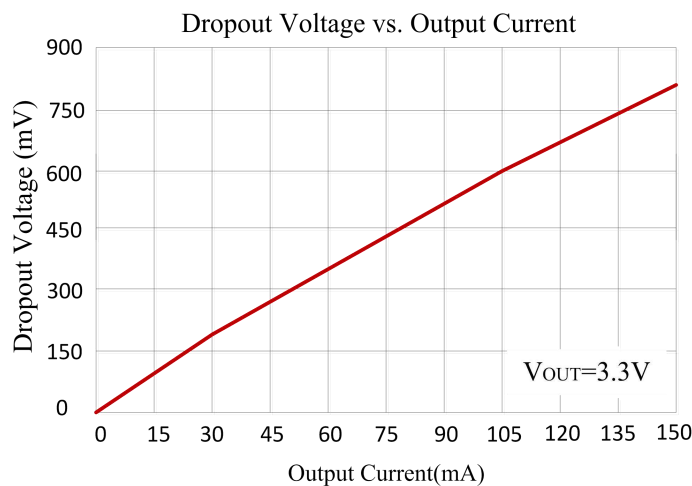
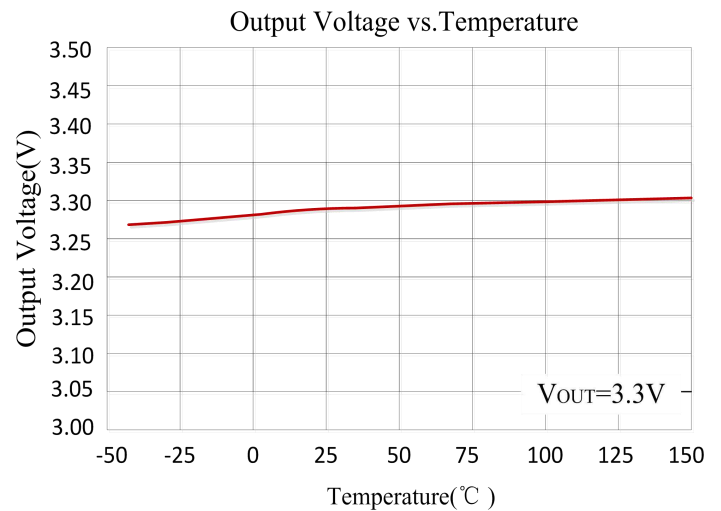
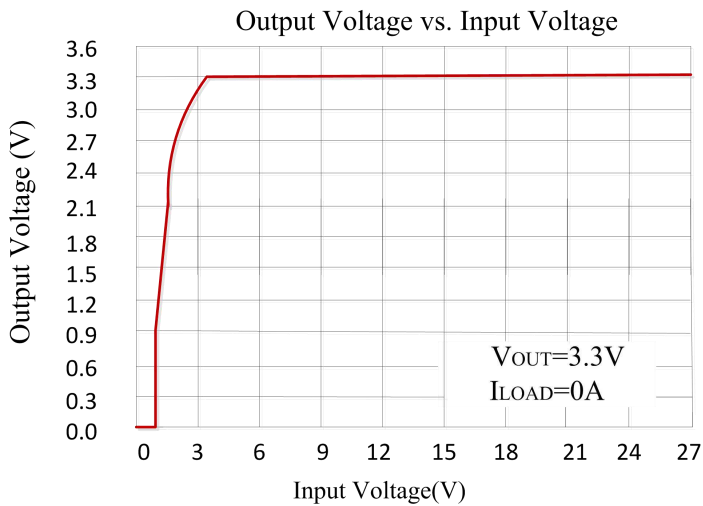
Symbol	Parameter	Test Condition	Min	Typ	Max	Unit
VIN	Input voltage	no-load loss	3	—	24	V
IGND	Quiescent current	VIN=12V, no-load loss	—	—	3	μA
VOU	Output Voltage	VIN=12V, IOUT=10mA	VOUTNOM * 0.98	VOUTNOM	VOUTNOM * 1.02	V
IOUT_MAX	Output current	Maximum Output Current	—	150	—	mA
Dropout Voltage	Dropout voltage (ASPL52L50B)	150mA	—	700	900	mV
		100mA	—	500	600	
	Dropout voltage (ASPL52L33B)	150mA	—	800	990	mV
		100mA	—	500	700	
	Dropout voltage (ASPL52L30B)	150mA	—	800	990	mV
		100mA	—	500	700	
ΔVOUT	Load Regulation	At VIN= 10V, the output current goes from 1mA to 150mA	—	45	80	mV
ΔVOUT x100/ ΔVIN x VOUT	Line Regulation	When the output is 10mA, the input voltage is VOUT+2V to 24V	—	0.15	—	%/V
ISHORT	short-circuit current	Output short circuit current to ground	—	100	—	mA

■ Functional Diagram

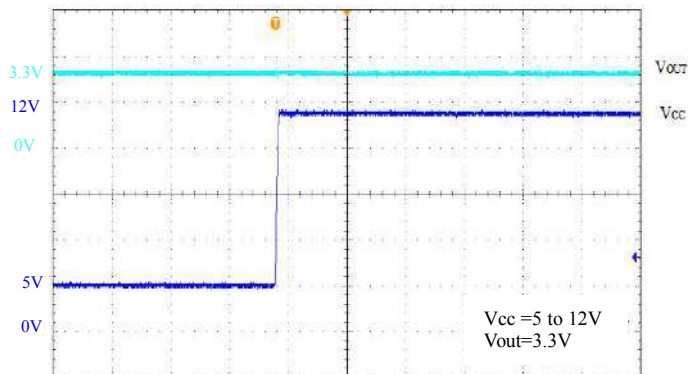


■ Typical Performance Characteristics

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

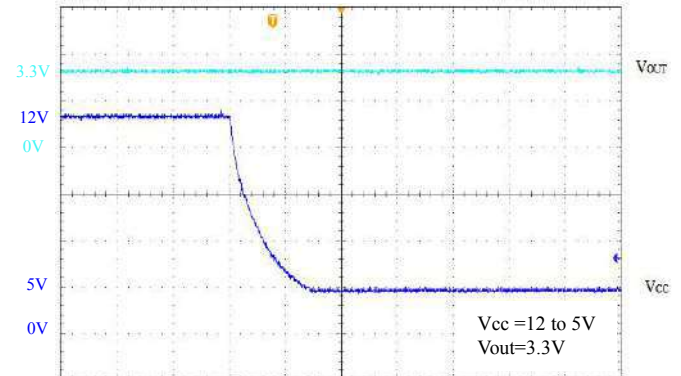


Line Transient Response



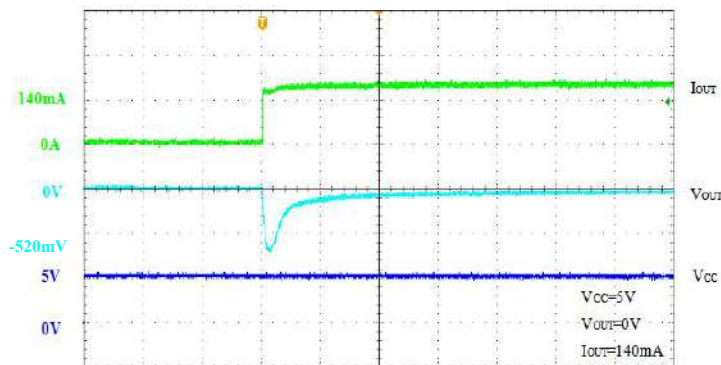
Time(4us/div)

Line Transient Response



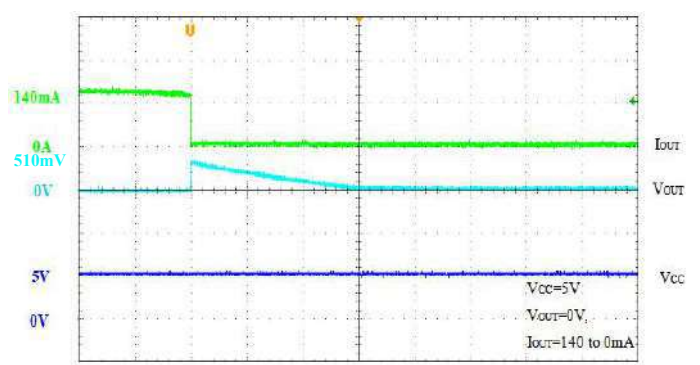
Time(4us/div)

Load Transient Response



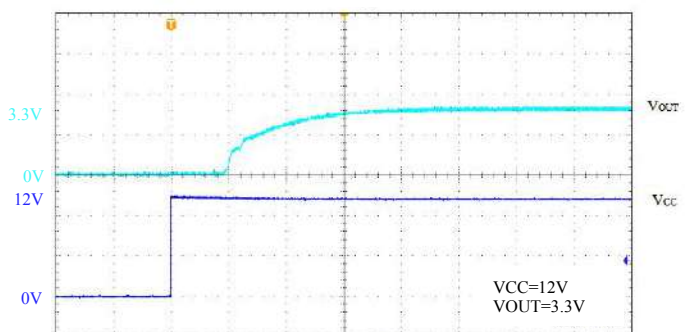
Time(200us/div)

Load Transient Response



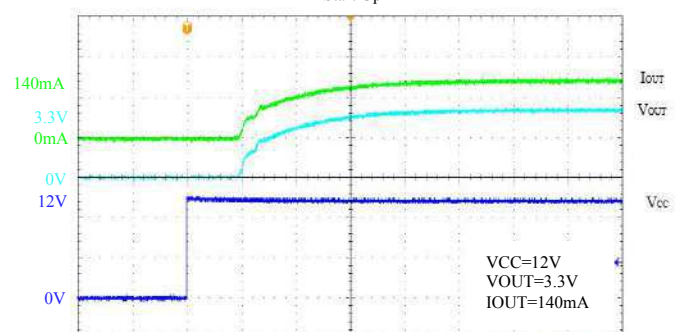
Time(200us/div)

Start Up



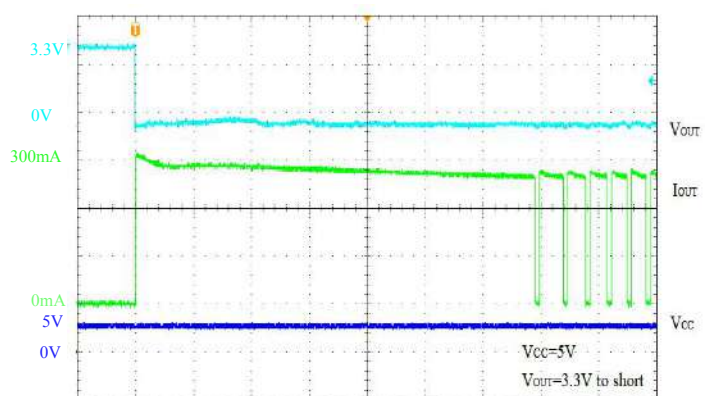
Time(50us/div)

Start Up



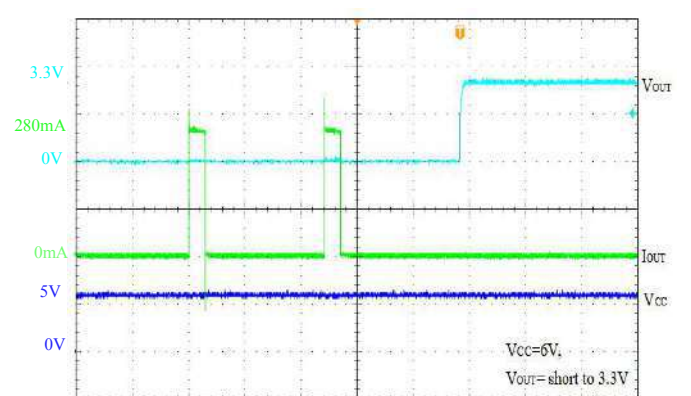
Time(50us/div)

Short Circuit Protection



Time(20ms/div)

Short Circuit Protection



Time(2ms/div)

Ordering Information

Ordering Number	Package	Packing	Quantity	Pin Definition
ASPL52LXXBZB-R	SOT23-3	Tape&Reel	3000/Reel	pin1:GND,pin2:VOUT,pin3:VIN
ASPL52LXXBZB-A-R	SOT23-3	Tape&Reel	3000/Reel	pin1:VOUT,pin2:GND,pin3:VIN
ASPL52LXXBZB-B-R	SOT23-3	Tape&Reel	3000/Reel	pin1:VIN,pin2:VOUT,pin3:GND
ASPL52LXXBZB-C-R	SOT23-3	Tape&Reel	3000/Reel	pin1:VOUT,pin2:VIN,pin3:GND
ASPL52LXXBDI-R	SOT89-3	Tape&Reel	3000/Reel	pin1:GND,pin2:VIN,pin3:VOUT
ASPL52LXXBDI-A-R	SOT89-3	Tape&Reel	3000/Reel	pin1:VOUT,pin2:VIN,pin3:GND
ASPL52LXXBDI-B-R	SOT89-3	Tape&Reel	3000/Reel	pin1:VIN,pin2:GND,pin3:VOUT
ASPL52LXXBDI-C-R	SOT89-3	Tape&Reel	3000/Reel	pin1:VOUT,pin2:GND,pin3:VIN
ASPL52LXXBZD-R	SOT23-5	Tape&Reel	3000/Reel	pin1:VIN,pin2:GND,pin3:NC,pin4:NC,pin5:VOUT

Note1: "XX" stands for Output Voltage. P/N example: ASPL52L33BZB-A-R, ASPL52L50BDI-C-R, etc.

"18": 1.8V, "25": 2.5V, "28": 2.8V, "30": 3.0V, "33": 3.3V, "36": 3.6V, "40": 4.0V, "42": 4.2V, "50": 5.0V.

Note2: "B" stands for Voltage accuracy. "B": $\pm 2\%$

Note3: "ZB, DI, ZD" stands for package. "ZB": SOT23-3, "DI": SOT89-3, "ZD": SOT23-5.

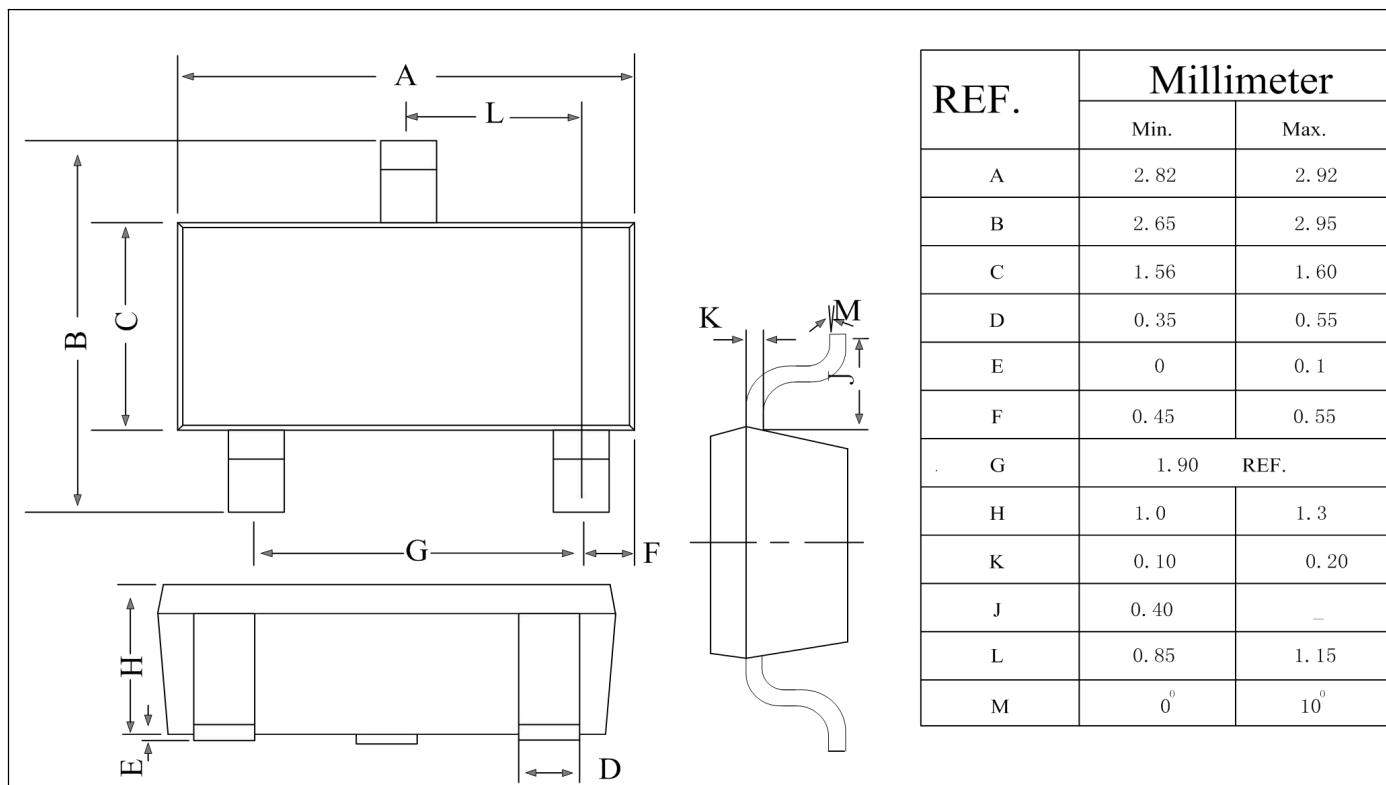
Note4: "A, B, C" stands for Pin Configuration, A, B, C, please refer to Pin Configuration.

Note5: "R" stands for Packing, Tape&Reel.

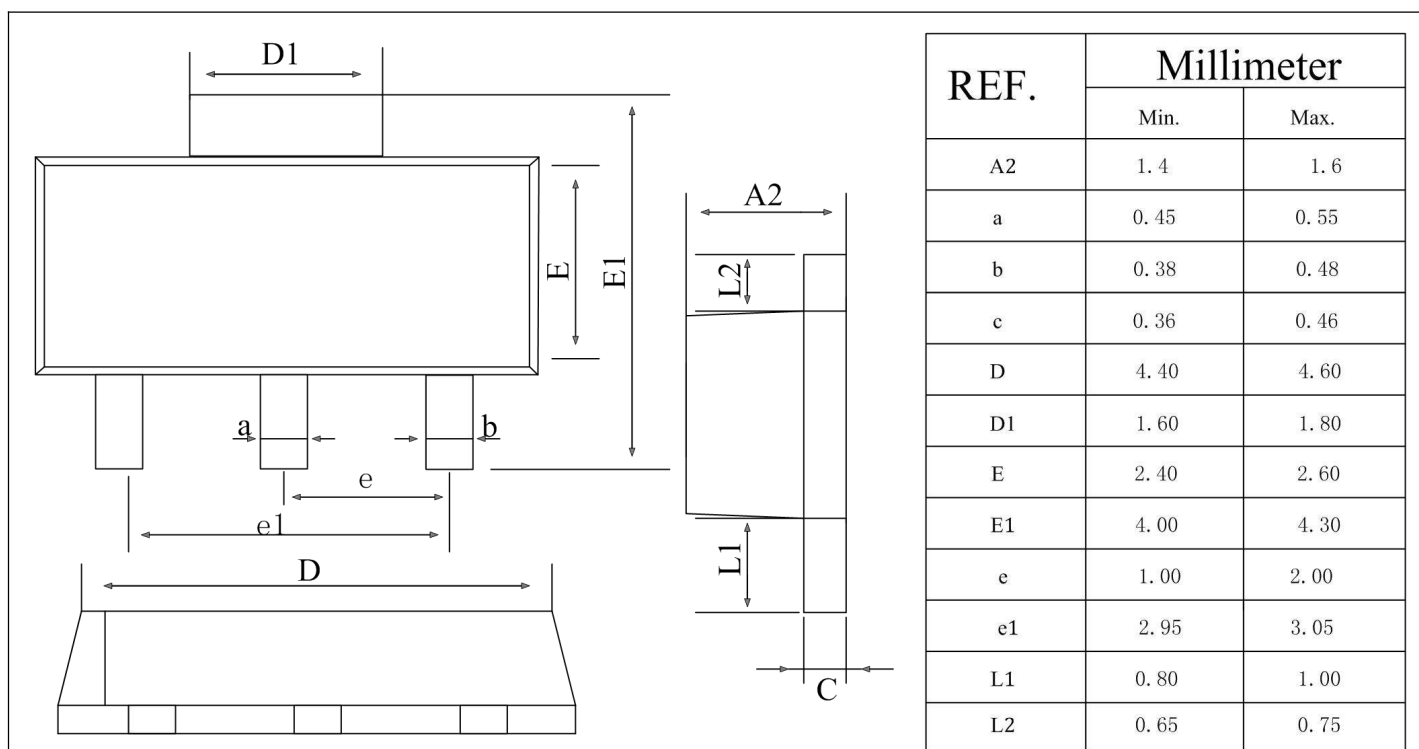
PACKAGE	MARKING
SOT23-3 SOT89-3 SOT23-5	正面丝印

■ Package Information

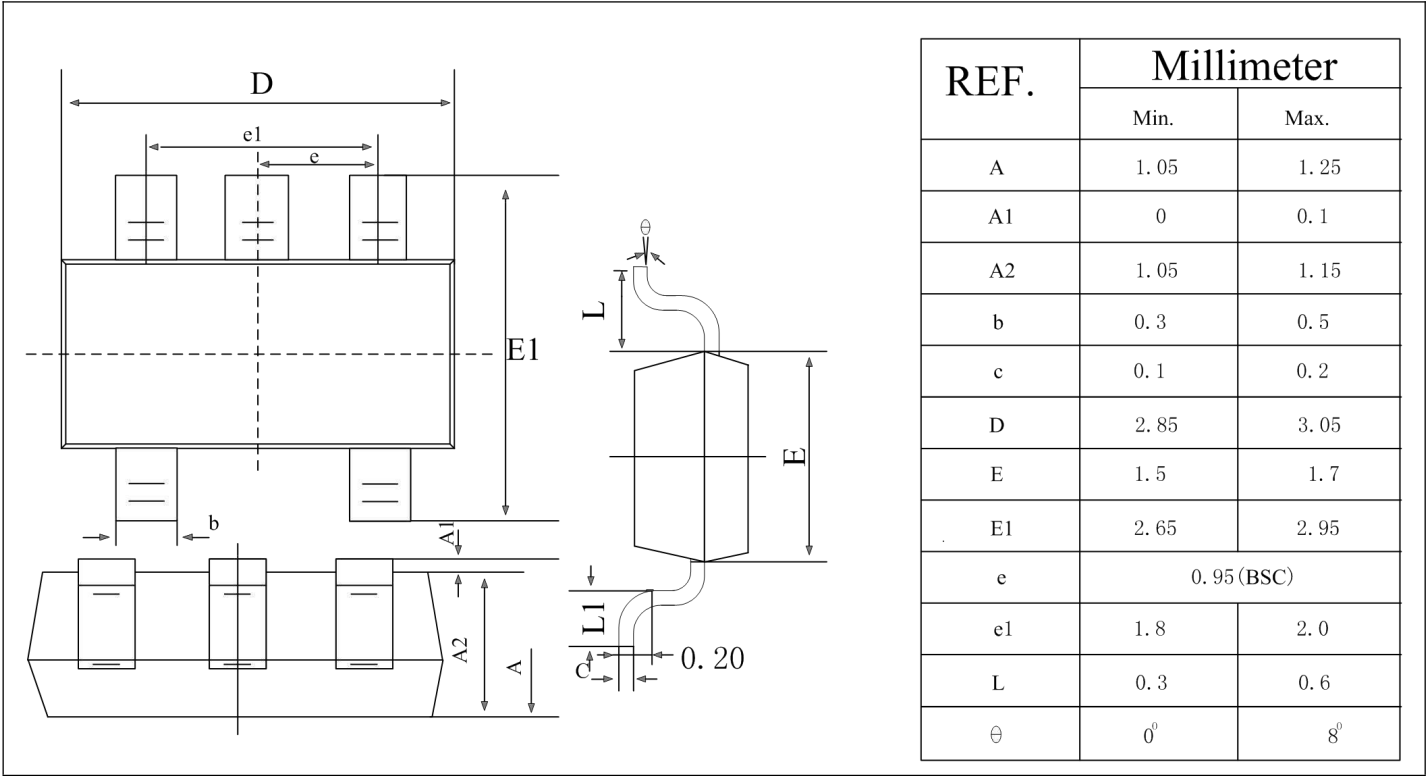
SOT23-3



SOT89-3



SOT23-5



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