



## Description

The PJ6206B Series are a group of positive voltage regulators manufactured by CMOS technologies with high ripple rejection, low power consumption and low dropout voltage, which can prolong battery life in portable electronics.

The PJ6206B series consists of a current limiter circuit a driver transistor, a precision reference voltage and an error correction circuit. The series is compatible with low ESR ceramic capacitors. The current limiter's foldback circuit operates as a short circuit protection as well as the output current limiter for the output pin.

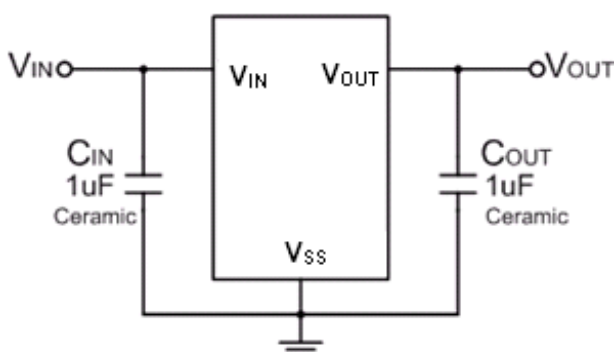
## Features

- Operating Input Voltage: Max.7V
- Maximum Output Current: 300mA
- Output Voltage: 1.2V~3.6V(customized by every 0.05V step)
- Low Quiescent Current: 6 $\mu$ A(Typ.)
- PSRR=78dB@1kHz
- Low Dropout Voltage: 180mV@100mA
- Output Voltage Accuracy:  $\pm$ 2%
- Excellent Line and Load Transient Response
- Built-in Current Limiter, Short-Circuit Protection
- Available Packages: SOT-23, SOT-23-3 and SOT-89

## Applications

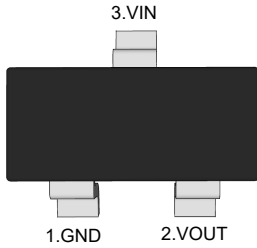
- Mobile Phones
- Battery powered equipment
- Portable game consoles
- Reference voltage sources

## Typical Application Circuit



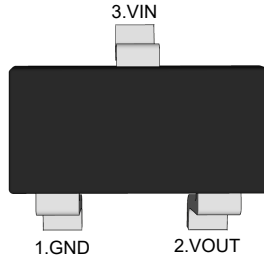
## Pin Distribution

### SOT-23



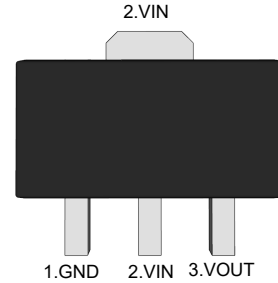
(Top View)

### SOT-23-3



(Top View)

### SOT-89



(Top View)

## Functional Pin Description

Pin Name	Pin Function
GND	Ground
VOUT	Output Voltage
VIN	Power Input Voltage

## Ordering Information

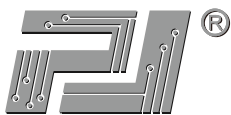
PJ6206B □□□□

Package Type  
SA : SOT-23 SC : SOT-23-3  
SQ : SOT-89

Output Voltage  
1.2V~3.6V by 0.05V step.  
For example, 28 means product outputs 2.8V

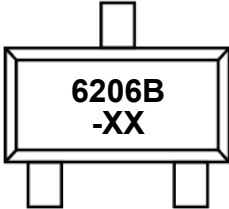
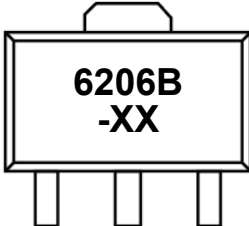
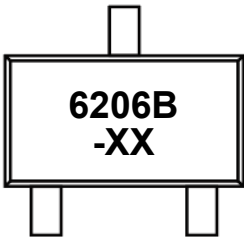
Output current tap  
L : 300mA

Version Number



# PJ6206B Series Low Dropout Regulators

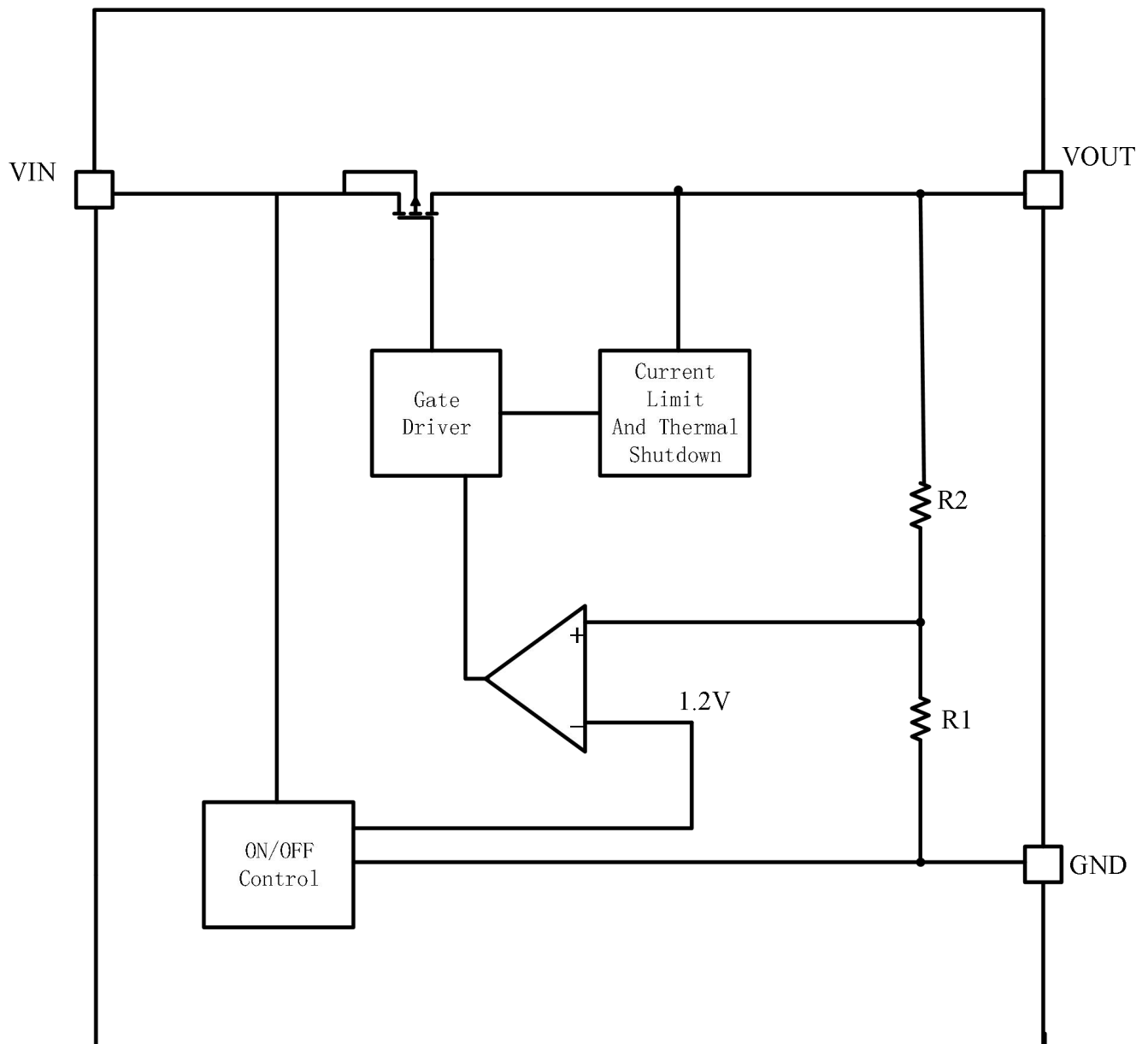
## Ordering Information Continue

Orderable Device	Package	Reel (inch)	Package Qty (PCS)	Eco Plan <sup>Note1</sup>	MSL Level	Marking Code
PJ6206BLXXSA <sup>Note2</sup>	SOT-23	7	3000	RoHS & Green	MSL1	 6206B -XX  XX:Output Voltage e.g. 3.0:3.0V
PJ6206BLXXSQ <sup>Note2</sup>	SOT-89	7/13	1000/3000	RoHS & Green	MSL1	 6206B -XX  XX:Output Voltage e.g. 3.0:3.0V
PJ6206BLXXSC <sup>Note2</sup>	SOT-23-3	7	3000	RoHS & Green	MSL3	 6206B -XX  XX:Output Voltage e.g. 3.0:3.0V

### Note:

1. RoHS: PJ defines "RoHS" to mean semiconductor products that are compliant with the current EU RoHS requirements for all 10 RoHS substances, including the requirement that RoHS substance do not exceed 0.1% by weight in homogeneous materials.  
Green: PJ defines "Green" to mean Halogen-Free and Antimony-Free.
2. XX indicates 1.2V~3.6V. For example, 18 means product outputs 1.8V.

### Function Block Diagram





## Absolute Maximum Ratings

Ratings at 25°C ambient temperature unless otherwise specified.

Parameter		Value	Unit
Input Voltage		$V_{SS}-0.3 \sim V_{SS}+9$	V
Output Voltage		$V_{SS}-0.3 \sim V_{IN}+0.3$	V
Output Current		300	mA
Power Dissipation	SOT-23	300	mW
	SOT-23-3	400	mW
	SOT-89	600	mW
Thermal Resistance, Junction-to-Ambient	SOT-23	333	°C/W
	SOT-23-3	250	°C/W
	SOT-89	167	°C/W
Operating Ambient Temperature		-40 ~ +85	°C
Junction temperature		-40 ~ +125	°C
Storage temperature range		-40 ~ +150	°C
Lead Temperature & Time		260°C, 10S	--
ESD Voltage	HBM	6	KV

Note1: Exceed these limits to damage to the device. Exposure to absolute maximum rating conditions may affect.

## Recommended Operating Conditions

Parameter		Value	Unit
Supply Voltage		2~7	V
Maximum Output Current		300	mA
Operating Ambient Temperature		-40 ~ +85	°C



### Electrical Characteristics

( $V_{IN}=V_{OUT}+1$ ,  $C_{IN}=1\mu F$ ,  $C_{OUT}=1\mu F$ ,  $T_A=25^\circ C$ , unless otherwise noted.)

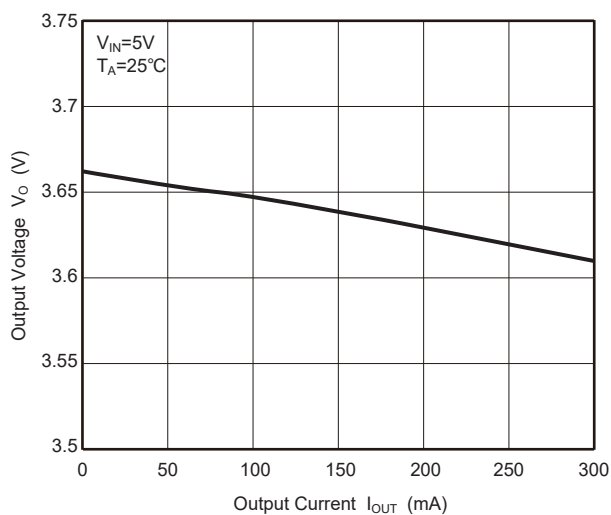
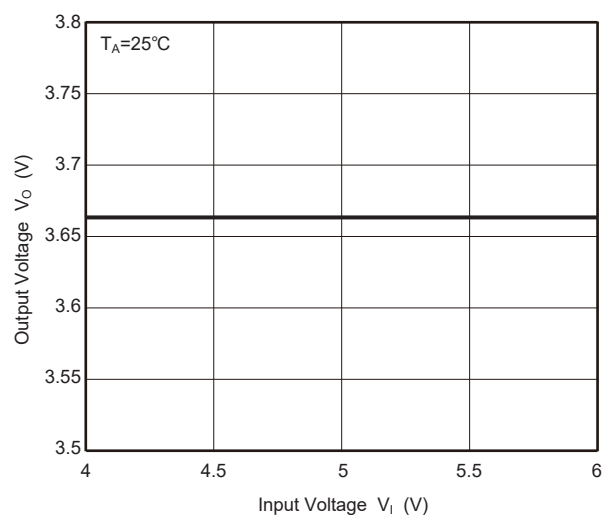
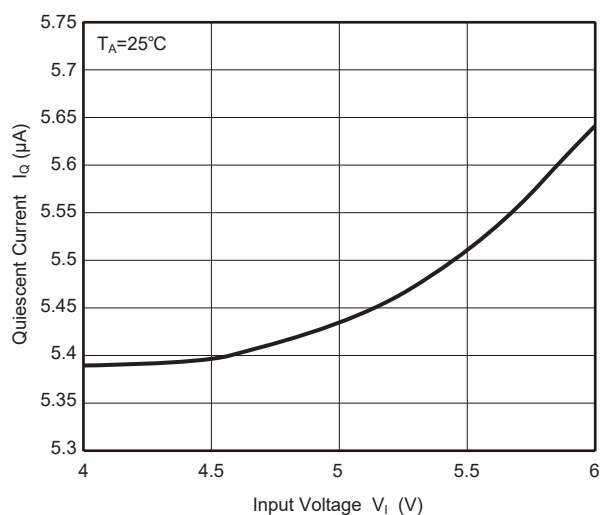
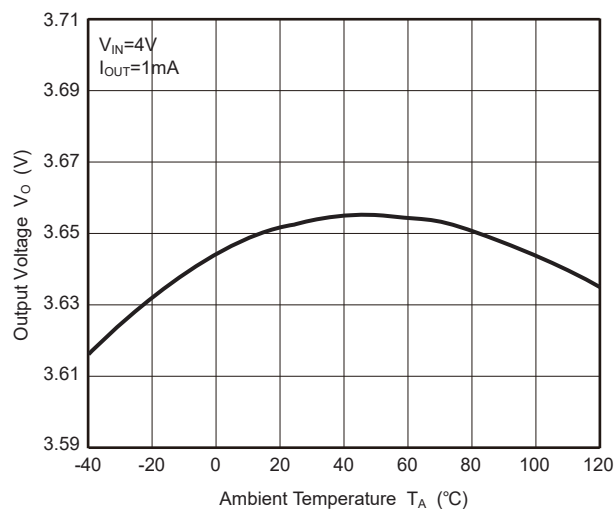
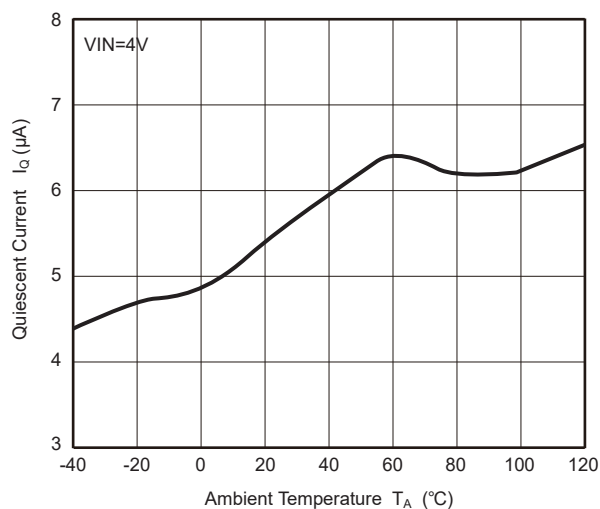
Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit	
Input Voltage	$V_{IN}$		2	--	7	V	
Output Voltage Accuracy	$\Delta V_{OUT}$	$V_{IN}=5V$ , $I_{OUT}=10mA$	-2	--	+2	%	
Quiescent Current	$I_Q$	$I_{OUT}=0mA$	--	6	10	$\mu A$	
Output Current	$I_{OUT}$		300	--	--	mA	
Dropout Voltage <sup>Note</sup>	$V_{DROP}$	$V_{IN}=V_{OUTNOM}-0.1V$ , $I_{OUT}=10mA$	--	80	--	mV	
		$V_{IN}=V_{OUTNOM}-0.1V$ , $I_{OUT}=100mA$	--	180	--	mV	
Line Regulation	$\Delta V_{LINE}$	$V_{OUTNOM}+0.5V \leq V_{IN} \leq 5V$ $I_{OUT}=1mA$	--	0.26	--	mV	
Load Regulation	$\Delta V_{LOAD}$	$V_{IN}=5V$ $0mA < I_{OUT} < 300mA$	--	54	--	mV	
Short Current	$I_{SHORT}$	$V_{IN}=V_{OUT}+2V$ , $V_{OUT}=0V$	--	150	--	mA	
Current Limit	$I_{LIMIT}$	$V_{IN}=V_{OUT}+2V$ , $V_{OUT}=98\%V_{OUT}$	--	530	--	mA	
Power Supply Rejection Ratio	PSRR	$V_{IN}=5V$ $I_{OUT}=100mA$	$f=1KHz$	--	78	--	dB
			$f=10KHz$	--	93	--	
Output Noise Voltage	eN	$V_{IN}=5V$ , $I_{OUT}=1mA$ , $f=10Hz$ to $100KHz$ ,	--	152	--	$\mu V_{RMS}$	
Thermal Shutdown Temperature	$T_{SHDN}$		--	150	--	$^\circ C$	
Thermal Shutdown Hysteresis			--	27	--	$^\circ C$	

Note: The dropout voltage difference is the voltage difference between the input and output, where the output voltage is 2% lower than its nominal value.



## Typical Characteristic Curves

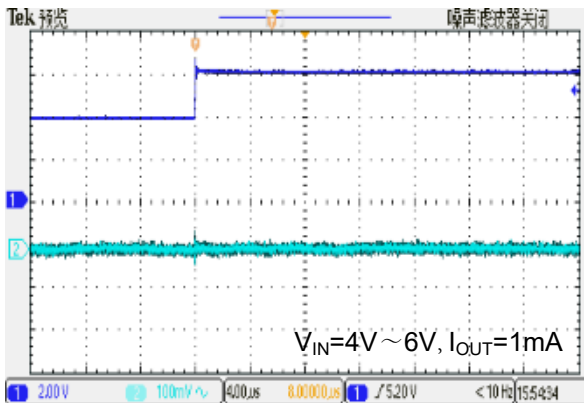
(Test Condition:  $C_{IN}=1\mu F, C_{OUT}=1\mu F, T_A=25^\circ C$ , unless otherwise noted.)



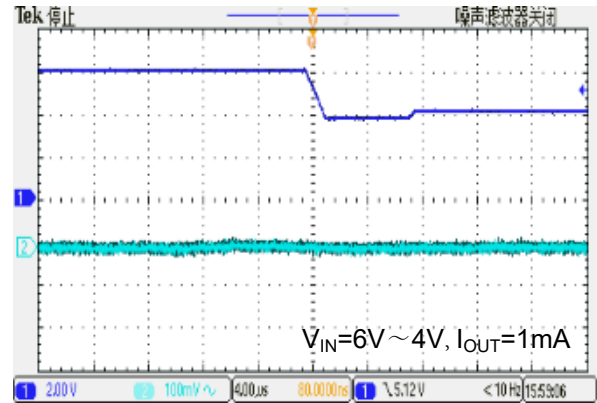


# PJ6206B Series Low Dropout Regulators

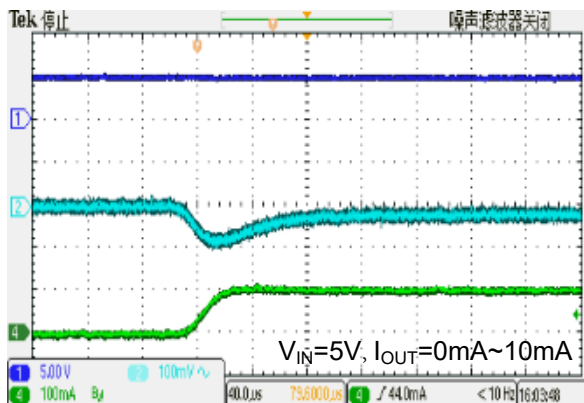
Line transient



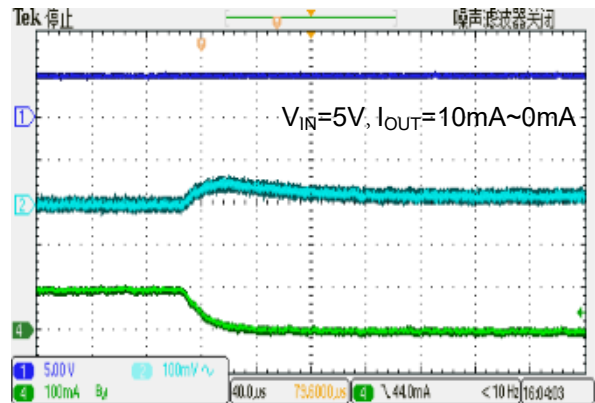
Line transient



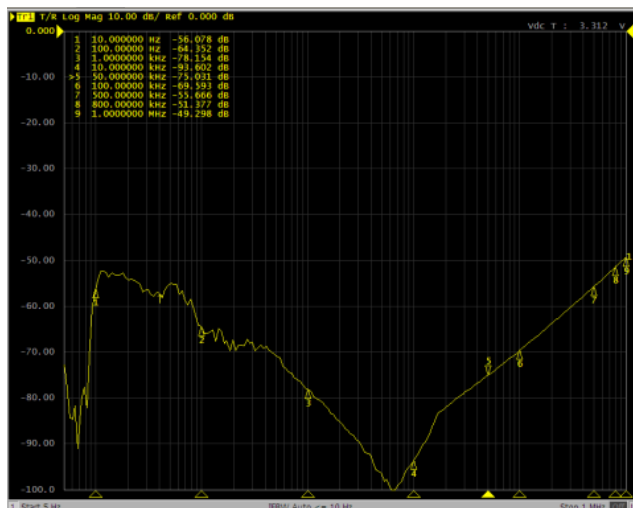
Load transient



Load transient



PSRR (5V@100mA)





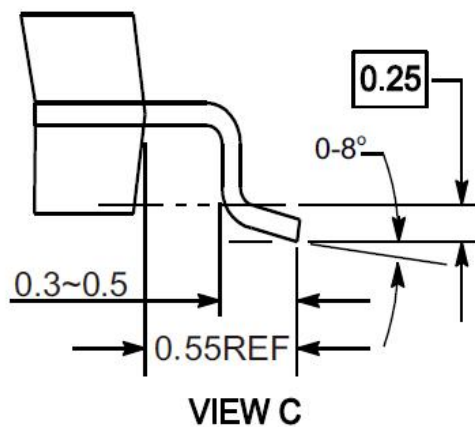
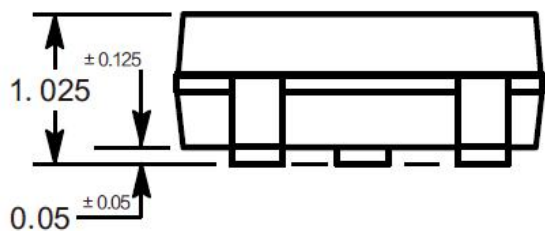
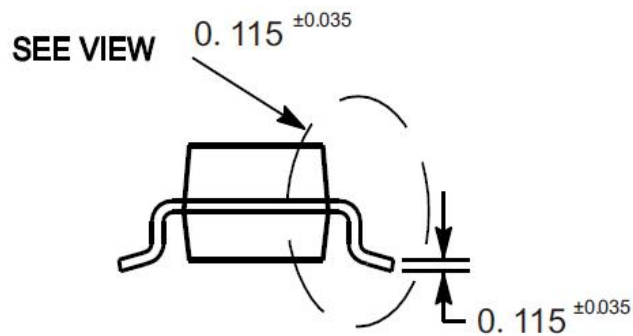
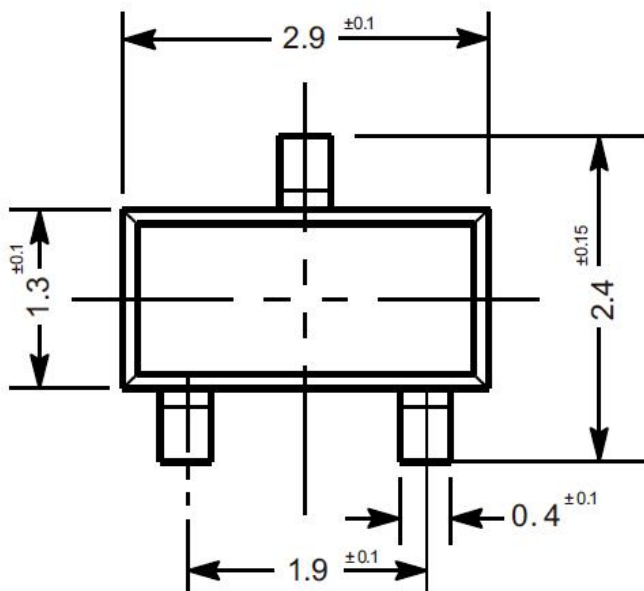


# PJ6206B Series Low Dropout Regulators

## Package Outline

SOT-23

Dimensions in mm



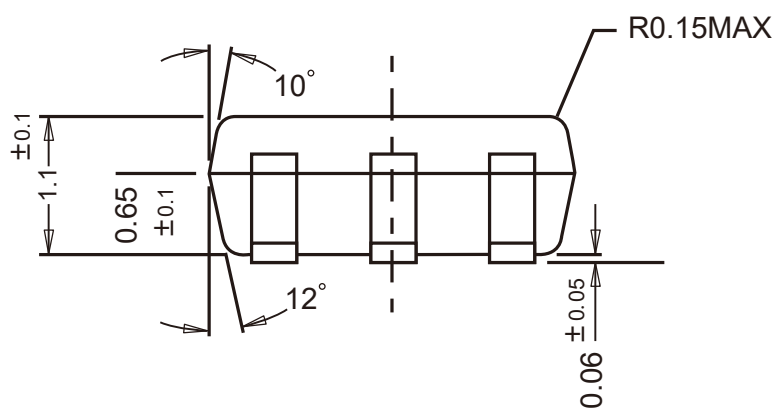
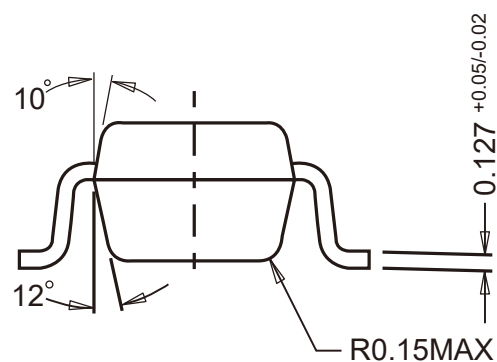
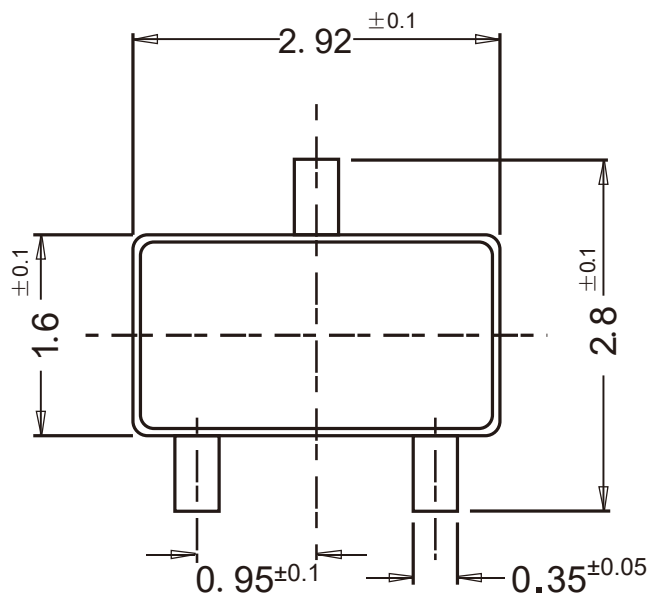


# PJ6206B Series Low Dropout Regulators

## Package Outline

SOT-23-3

Dimensions in mm





### Package Outline

SOT-89

Dimensions in mm

