

### 3. Voltage Regulators

## XC6204 Series

(Can be used with low ESR Capacitor Compatible. ON – OFF Switch)  
High Speed LDO Regulators

#### General Description

The XC6204 series are highly precise, low noise, positive voltage LDO regulators manufactured using CMOS processes. The series achieves high ripple rejection and low dropout and consists of a standard voltage source, an error amplifier, a current limiter, a phase compensation circuit and a driver transistor.

Output voltage is selectable in 50mV increments within a range of 1.8V to 6.0V.

The series is also compatible with low ESR ceramic capacitors which give added output stability. This stability can be maintained even during load fluctuations due to the excellent transient response of the series.

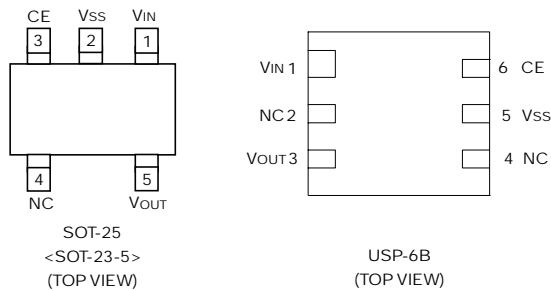
The current limiter's foldback circuit also operates as a short protect for the output current limiter and the output pin.

The CE function enables the output to be turned off, resulting in greatly reduced power consumption.

#### Features

- Maximum Output Current: 150mA
- Dropout Voltage: 200mV @ 100mA
- Maximum Operating Voltage: 10V
- Output Voltage Range: 1.8V to 6.0V in 50mV steps
- Highly Accurate:  $\pm 2\%$
- Low Power Consumption: TYP 100 $\mu$ A (XC6204A)  
TYP 75 $\mu$ A (XC6204B)
- Standby Current: less than 0.1 $\mu$ A
- High Ripple Rejection: 70dB (10 kHz)
- Low Output Noise: 30 $\mu$ Vrms
- Operating Temperature Range: -40°C to +85°C
- Low ESR Capacitor Compatible: Ceramic Capacitor

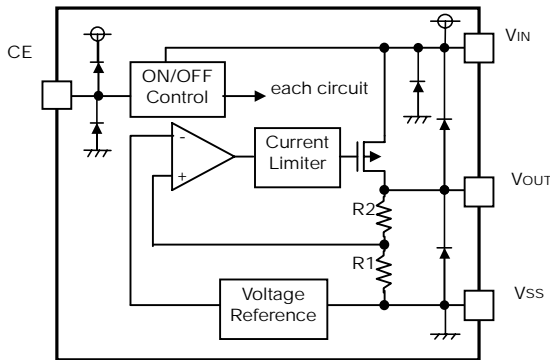
#### Pin Configuration



#### Pin Assignment

PIN NUMBER		PIN NAME	FUNCTION
SOT-25	USB-6B		
1	1	VIN	Input
2	5	VSS	Ground
3	6	CE	ON/OFF Control
4	2, 4	NC	No Connection
5	3	VOUT	Output

#### Block Diagram



#### Ordering Information

XC6204

DESIGNATOR	SYMBOL	DESCRIPTION	DESIGNATOR	SYMBOL	DESCRIPTION	
	A	CE Pin Logic :		2	Output Voltage : 100mV increments e.g. =3, =8, =2 3.8V	
		Active 'High' (pull-down resistor built in)			A	Output Voltage : 50mV increments e.g. =3, =8, =A 3.85V
		B		Active 'High' (no pull-down resistor built in)	M	Package Type : SOT-23-5 (1reel = 3000pcs)
		C		Active 'Low' (pull-up resistor built in)	D	USP-6B (1reel = 3000pcs)
18-60	D	Active 'Low' (no pull-up resistor built in)			Device Orientation :	
		Output Voltage : e.g. 20 = 2.0V 30 = 3.0V etc.			R	Embossed Tape : Standard Feed
		L			Embossed Tape : Reverse Feed	