General Description

The XC6219 series are highly accurate, low noise, CMOS LDO Voltage Regulators.Offering low output noise, high ripple rejection ratio,low dropout and very fast turn-on times, the XC6219 series is ideal for today's cutting edge mobile phone. Internally the XC6219 includes a reference voltage source, error amplifiers, driver transistors, current limiters and phase compensators.

The output voltage is set by current trimming. Voltages are selectable in 100mV steps within a range of 1.2V to 5.0V.

The XC6219 series is also fully compatible with low ESR ceramic capacitors,reducing cost and improving output stability.This high level of output stability is maintained even during frequent load fluctuations,due to the excellent transient response performance and high PSRR achieved across a broad range of frequencies.The CE function allows the output of regulator to be turned off,resulting in greatly reduced power consumption.

Features

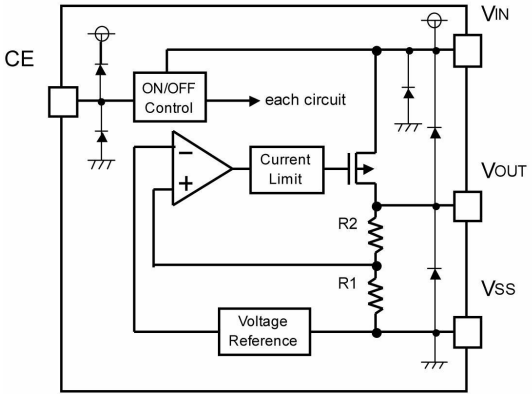
- Low power consumption:70uA (Typ.)
- Low voltage drop:

  0. 12V@ 100mA@VOUT=3.3V(Typ.)
- Standby Mode: 0. 1uA
- Low temperature coefficient
- High input voltage (up to 8V)
- Output voltage accuracy: tolerance ±2%
- SOT23-5、SOT89package

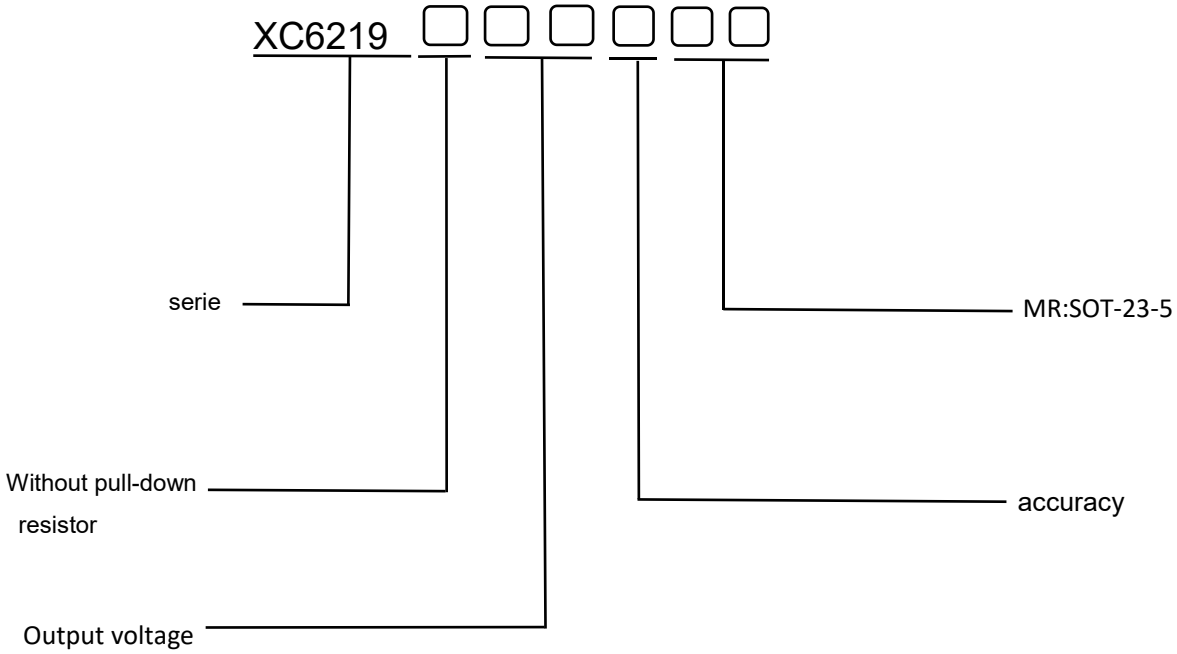
Application

- Battery-powered equipment
- Communication equipment
- Mobile phones
- Portable games
- Cameras, Video cameras
- Reference voltage sources

Reference News

PACKAGE OUTLINE	Block Diagram
	
SOT-23-5	

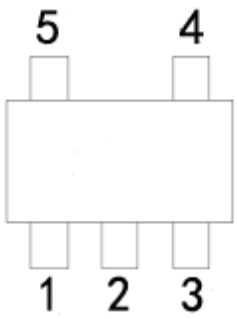
Ordering Information



Item number	package	Output voltage
XC6219B122MR	SOT-23-5	1.2V
XC6219B152MR	SOT-23-5	1.5V
XC6219B182MR	SOT-23-5	1.8V
XC6219B252MR	SOT-23-5	2.5V
XC6219B282MR	SOT-23-5	2.8V
XC6219B302MR	SOT-23-5	3.0V
XC6219B332MR	SOT-23-5	3.3V
XC6219B362MR	SOT-23-5	3.6V
XC6219B502MR	SOT-23-5	5.0V

Package and Pin assignment

SOT23-5 (Top View)



PIN NUMBER	SYMBOL	FUNCTION
1	VIN	Power Input Pin
2	GND	Ground
3	CE	Chip Enable Pin
4	NC	No Connection
5	VOUT	Output Pin

Absolute Maximum Ratings

Supply Voltage ..... -0.3V to 8V

Storage Temperature .....-50C to 125C

Operating Temperature -40C to 85C

Note: These are stress ratings only. Stresses exceeding the range specified under “Absolute Maximum Ratings” may cause substantial damage to the device. Functional operation of this device at other conditions beyond those listed in the specification is not implied and prolonged exposure to extreme conditions may affect device reliability.

Thermal Information

Symbol	Parameter	Package	Max.	Unit
θ_{JA}	Thermal Resistance (Junction to Ambient) (Assume no ambient airflow, no heat sink)	SOT23-5	500	℃/W
		SOT89	200	
P_D	Power Dissipation	SOT23-5	0.25	W
		SOT89	0.5	

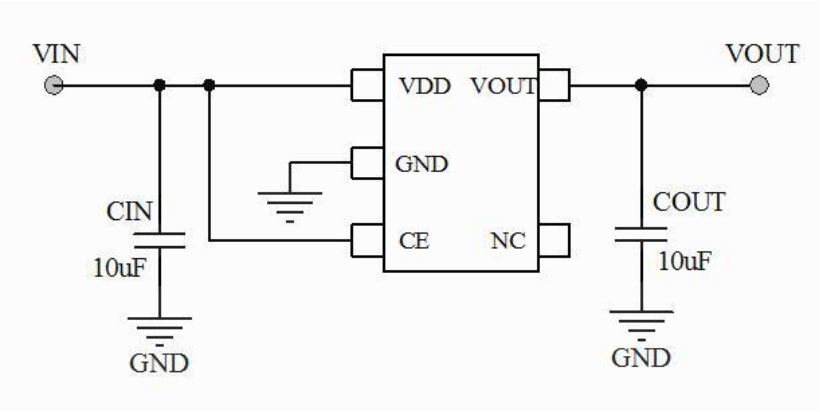
Note:PDismeasuredatTa=25℃

Electrical Characteristics

XC6219 series (Ta=25℃)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Output Voltage	Vout	Vin=Vout+1V 1.0mA≤ Iout≤30mA	Vout×0.98	--	Vout×1.02	V
Output Current*1	Iout	Vin-Vout=1V	--	350	--	mA
Line Regulation	△Vout1/ (△Vin·Vout)	4.3V≤Vin≤8V Iout=10mA	--	0.05	0.2	%/V
Load Regulation	△Vout	Vin= 4.3V 1.0mA≤ Iout≤100mA	--	10	30	mV
Output voltage Temperature Coefficiency	△Vout/(Ta· Vout)	Iout=30mA 0 C≤ Ta≤ 7 0 C	--	± 100	--	Ppm/ C
Supply Current	Iss1	--	--	70	--	uA
Input Voltage	Vin	--	--	--	8	V
PSRR	PSRR	F=1KHz, Vin=4.3Vdc+1Vpp	--	60	--	dB

TypicalApplicationCircuit



Operational Explanation

<Output Voltage Control>

The P-channel MOSFET is connected to the VOUT pin, driven by the subsequent output signal. The output voltage at the VOUT pin is controlled and stabilized by a system of negative feedback. The IC's internal circuitry can shut-down by the CE pin's signal

<Low ESR Capacitors>

With the XC6219 series, a stable output voltage is achievable even if used with low ESR capacitors as a phase compensation circuit is built-in. In order to ensure the effectiveness of the phase compensation, we suggest that an output capacitor (CL) is connected as close as possible to the output pin (VOUT) and the GND pin. Please use an output capacitor with a capacitance value of at least 10uF. Also, please connect an input capacitor (CIN) of 10uF between the VIN pin and the GND pin in order to ensure a stable power input. Stable phase compensation may not be ensured if the capacitor runs out capacitance when depending on bias and temperature. In case the capacitor depends on the bias and temperature, please make sure the capacitor can ensure the actual capacitance.

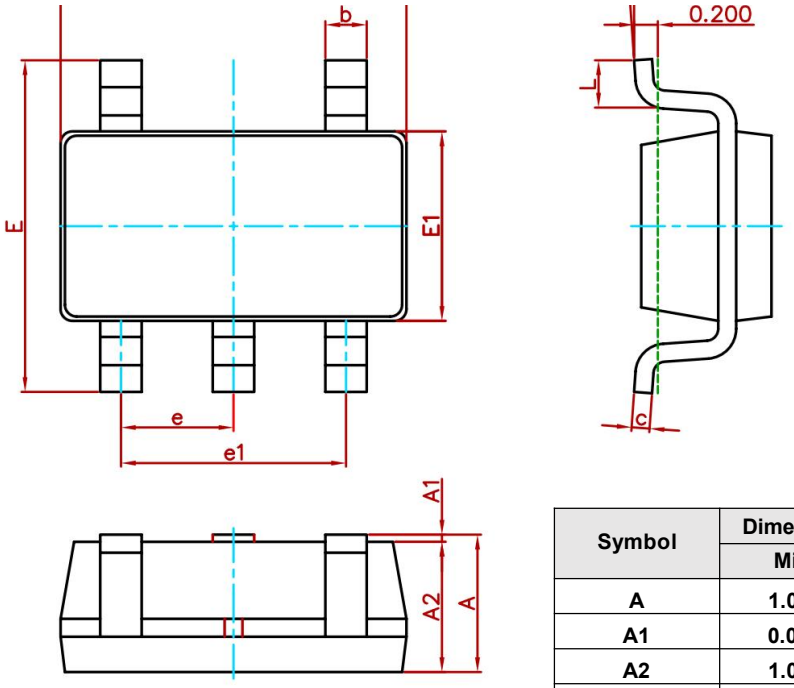
<CE Pin>

The IC's internal circuitry can be shutdown via the signal from the CE pin with the XC6219 series. The operational logic of the IC's CE pin is selectable (please refer to the selection guide). Although the CE pin is equal to an inverter input with CMOS hysteresis, with either the pull-up or pull-down options, the CE pin input current will increase when the IC is in operation. We suggest that you use this IC with either a VIN voltage or a VSS voltage input at the CE pin. If this IC is used with the correct specifications for the CE pin, the operational logic is fixed and the IC will operate normally. However, supply current may increase as a result of through current in the IC's internal circuitry.

Notes on Use

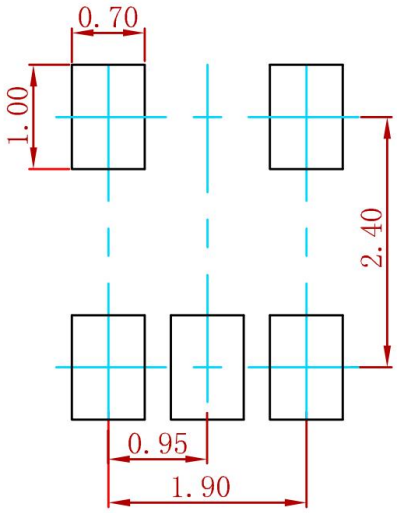
1. Please use this IC within the stated absolute maximum ratings. The IC is liable to malfunction should the ratings be exceeded.
2. Where wiring impedance is high, operations may become unstable due to noise and/or phase lag depending on output current. Please keep the resistance low between VIN and VSS wiring in particular.
3. Please wire the input capacitor (CIN) and the output capacitor (CL) as close to the IC as possible.

SOT-23-5 Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	1.050	1.250	0.041	0.049
A1	0.000	0.100	0.000	0.004
A2	1.050	1.150	0.041	0.045
b	0.300	0.500	0.012	0.020
c	0.100	0.200	0.004	0.008
D	2.820	3.020	0.111	0.119
E	2.650	2.950	0.104	0.116
E1	1.500	1.700	0.059	0.067
e	0.950(BSC)		0.037(BSC)	
e1	1.800	2.000	0.071	0.079
L	0.300	0.600	0.012	0.024
θ	0°	8°	0°	8°

SOT-23-5L Suggested Pad Layout



Note:
1.Controlling dimension:in millimeters.
2.General tolerance:± 0.05mm.
3.The pad layout is for reference purposes only.