1.Description

XC6219 series is a high precision, low noise and fast response low dropout linear voltage regulator manufactured by CMOS process. This series of voltage regulators has built -in fixed reference voltage, error correction circu it, current limiting circuit, phase compensation circuit and MOSFET with low internal resistance, which achieves high ripple suppression, low output noise and quick response to low dropout.

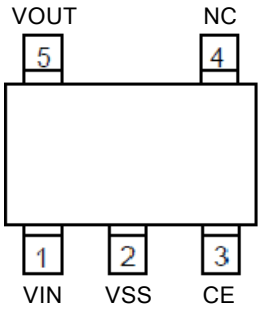
2.Product Usage

- Smart phone/mobile phone
- Digital camera/video camera
- Battery powered equipment
- Bluetooth and other RF products
- Portable consumer equipment

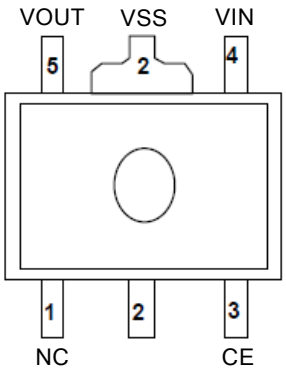
3.Features

- High precision output voltage:2.5%
- Selectable output voltage:1.5V~5.0V
- Very low static current (Typ.=2μA)
- Very low turn - off current (Typ.=0.1μA)
- Good input stability:Typ.=0.2%/V
- Strong carrying capacity:when Vin=4.3V
- and Vout=3.3V,Iout=300mA
- Built -in overcurrent protection and load
- short circuit protection;
- Compatible ceramic capacitor;
- Package form: SOT89-5, SOT23-5

4.Pinning information



SOT23-5

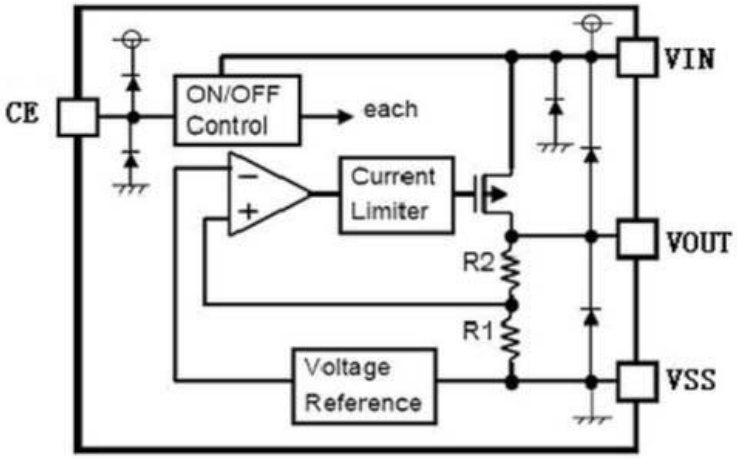


SOT89-5

5.Model selection

Representat ive number	Describe	Symbol	Describe
① ②	Output voltage	15-50	e.g.V_{OUT}1.5V→①=1, ②=5
③	Output accuracy	±2.5%	e.g.V_{OUT}1.5V→③=2,is:152
④	package	M	SOT23-5
		P	SOT89-5
⑤	Tape	R	Embossed tape, standard inflow

6.Principle block diagram

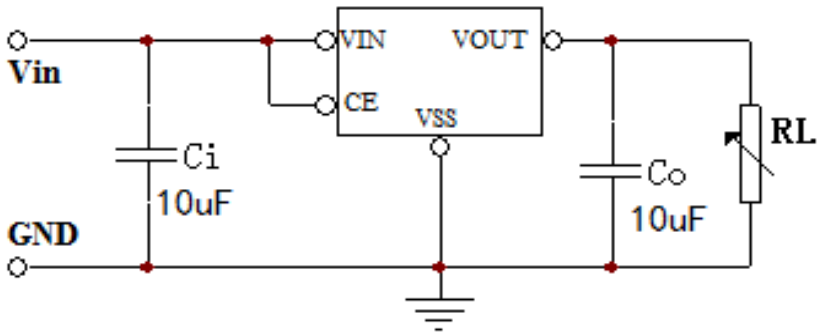


7.Limit parameter

Project	Symbol	parameter		Limit value	unit
Voltage	V_{IN}	Input voltage		9	V
	V_{OUT}	Output voltage		V_{SS}-0.3 ~V_{IN}+0.3	V
electric current	I_{OUT}	Output current		500	mA
power consumption	PD	SOT23-5	Maximum allowable	250	mW
		SOT89-5	power consumption	350	mW
temperature	T_{OPR}	Working temperature		-40 to 85	°C
	T_{STG}	Storage temperature		-40 to 125	°C
	T_{solder}	welding temperature		260	°C,10s

Notes: The limit parameter refers to the limit value that can't be exceeded under any conditions. If it exceeds this limit value, it may cause physical damage such as product deterioration; At the same time, when the parameters are close to the limit, the chip can't work normally.

8.Typical application



9.Electrical Characteristics

(Ci=Co=10uF,Ta=25°C unless otherwise specified)

Parameter	Symbol	Conditions	Min	Typ	Max	Units
Output voltage	$V_{OUT}(E)$	I_{OUT}=1mA, $V_{IN}=V_{OUT}$+1V, V_{CE}=1.6V	V_{OUT} *0.975		V_{OUT} *1.025	V
Maximum output current	$I_{OUT}(max)$	$V_{IN}=V_{OUT}$+1V		300		mA
Load stability	ΔV_{OUT}	$V_{IN}=V_{CE}=V_{OUT}$+1V,1mA≤I_{OUT}≤100mA		12		mV
Input stability	$\Delta V_{OUT}/(\Delta V_{IN}*V_{OUT})$	I_{OUT}=10mA, $V_{IN}=V_{OUT}$+1V≤V_{IN}≤7V		0.2		%/V
Drop pressure difference	V_{drop1}	$V_{IN}=V_{OUT}$+1V, I_{OUT}=10mA		35		mV
	V_{drop2}	$V_{IN}=V_{OUT}$+1V, I_{OUT}=100mA		280		mV
quiescent current	I_{SS1}	$V_{IN}=V_{CE}=V_{OUT}$+1V		2		μA
	I_{SS2}	$V_{IN}=V_{OUT}$+1V, $V_{CE}=V_{SS}$			0.5	μA
CE input voltage	V_{CEH}		1.6		V_{IN}	V
	V_{CEL}		0		0.5	V
CE input current	I_{CE}	V_{CE}=0V to V_{IN}			0.5	μA
Ripple suppression ratio	PSRR	$V_{IN}=V_{CE}=V_{OUT}$+1V+$1V_{p-pAC}$ I_{OUT}=10mA, f=1kHz		40		dB
Output voltage temperature coefficient	$\Delta V_{OUT}/(\Delta T_A*V_{OUT})$	$V_{IN}=V_{CE}=V_{OUT}$+1V, I_{OUT}=3mA 0°C≤Ta≤60°C		±290		ppm/°C
input voltage	V_{IN}		1.8		7	V

Note:

1. $V_{OUT}(T)$: the specified output voltage.

2. $V_{OUT}(E)$: effective output voltage.

3. $I_{OUT}(max)$: Slowly increase the output current to the current value when the output voltage is ≤ $V_{OUT}(E)$ * 95%.

4. $V_{drop}=V_{IN1}–V_{OUT}(E)s$

V_{IN1}=gradually decrease the input voltage until the output voltage drops to 98% of $V_{OUT}(E)$ 1.

$V_{OUT}(E)s=V_{OUT}(E)1*97.5\%$

$V_{OUT}(E)$ 1=the output voltage value when $V_{IN}=V_{OUT}(T)$+1V and Iout=a certain value.

10.Typical Characteristic

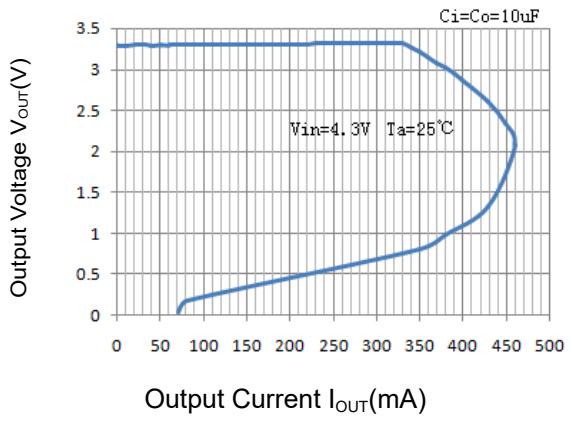


Figure 1: Output voltage and output current

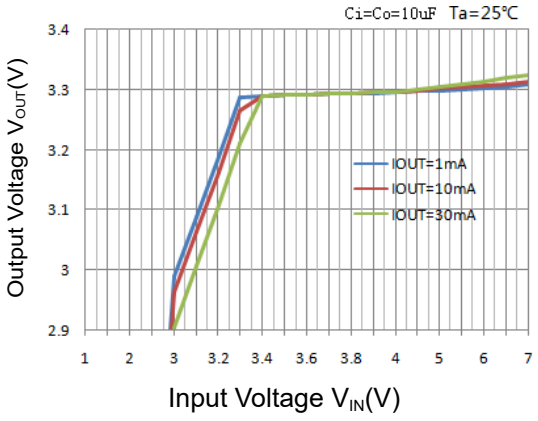


Figure 2: Output voltage and input voltage

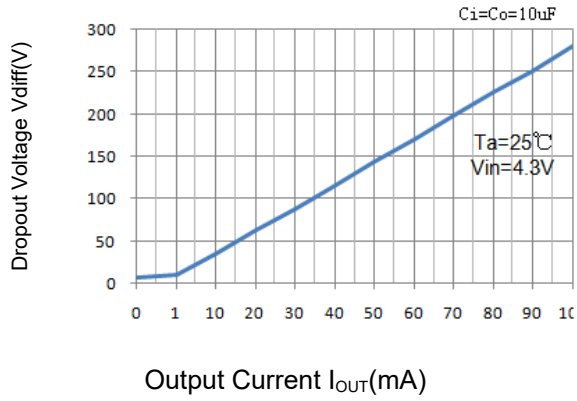


Figure 3: Dropout voltage and output current

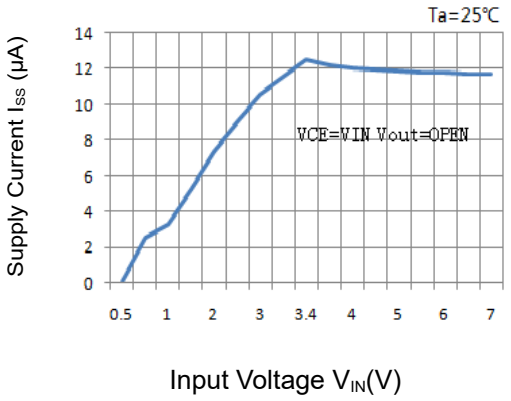


Figure 4: Input voltage and static current

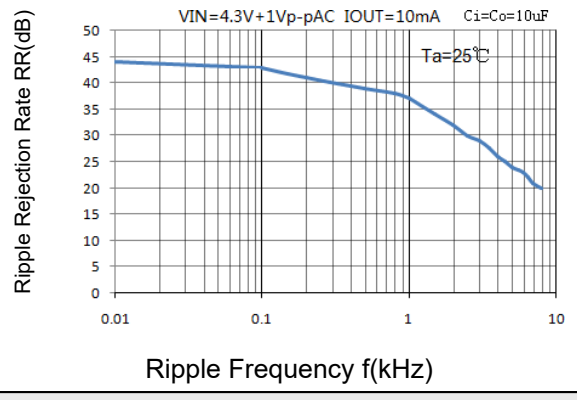


Figure 5: Ripple suppression

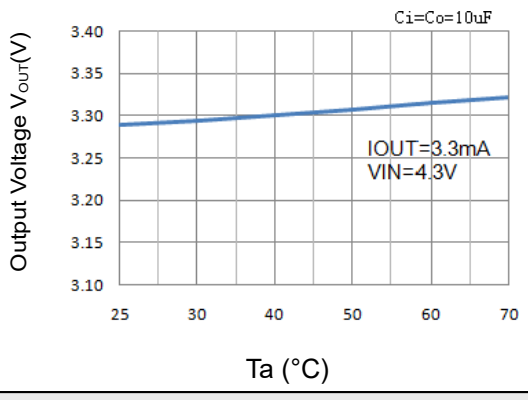
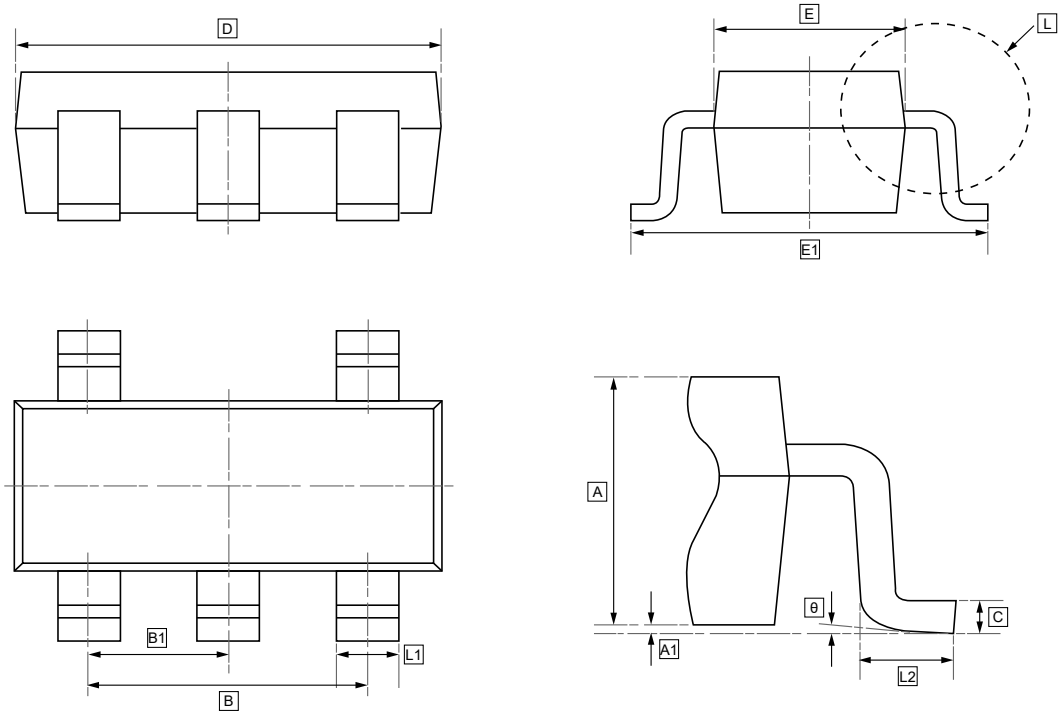


Figure 6: Output voltage and temperature

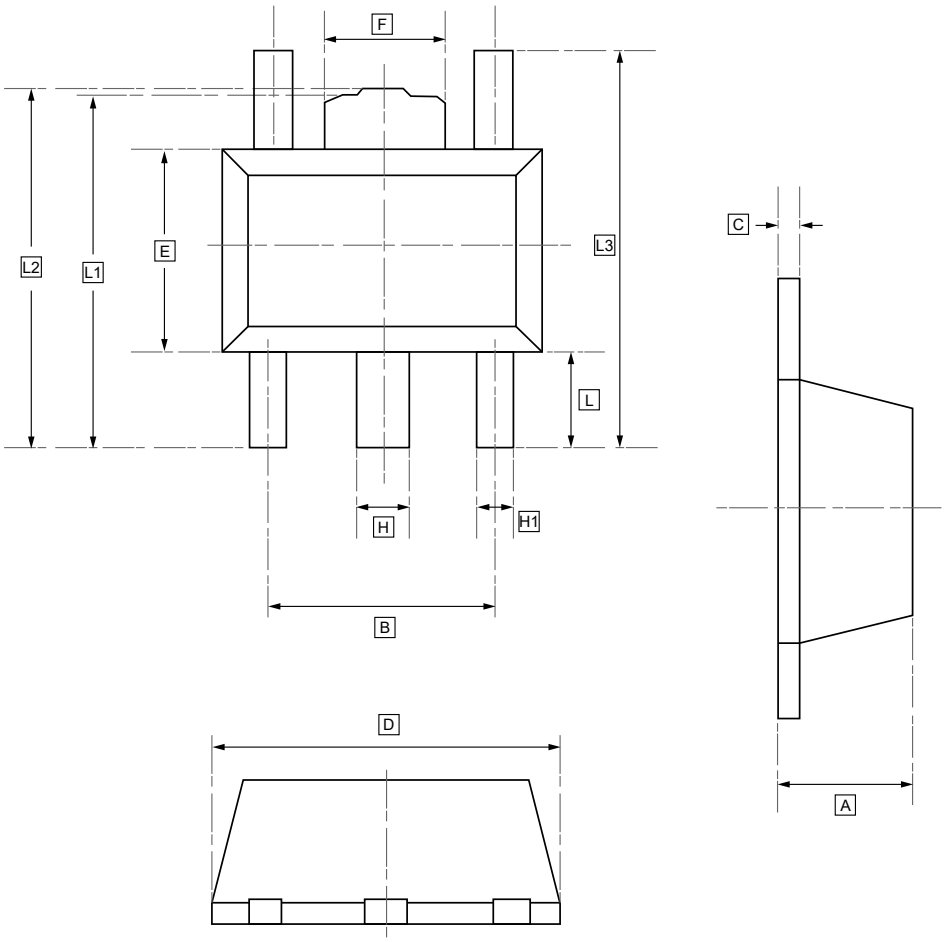
11.1 SOT-23-5 Package Outline Dimensions



DIMENSIONS (mm are the original dimensions)

Symbol	A	A1	B	B1	C	D	E	E1	L1	L2	θ
Min	1.050	0.000	1.800	0.950	0.100	2.820	1.500	2.650	0.300	0.300	0°
Max	1.150	0.100	2.000	TYP	0.200	3.020	1.700	2.950	0.500	0.600	8°

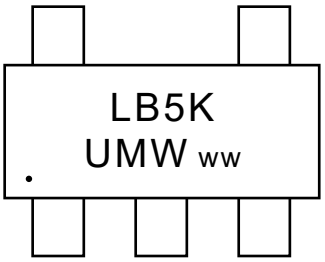
11.2 SOT-89-5 Package Outline Dimensions



DIMENSIONS (mm are the original dimensions)

Symbol	A	B	C	D	E	F	H	H1	L	L1	L2	L3
Min	1.450	2.950	0.330	4.450	2.450	1.650	0.450	0.370	0.900	4.100	4.100	4.350
Max	1.550	3.050	0.430	4.550	2.550	1.750	0.580	0.480	1.000	4.300	4.350	4.450

12.Ordering information



ww: Batch Code

Order Code	Marking	Package	Base QTY	Delivery Mode	Vout(V)
UMW XC6219B152MR	LXEK	SOT-23-5	3000	Tape and reel	1.5
UMW XC6219B182MR	LXKK	SOT-23-5	3000	Tape and reel	1.8
UMW XC6219B252MR	LXTK	SOT-23-5	3000	Tape and reel	2.5
UMW XC6219B282MR	LXXK	SOT-23-5	3000	Tape and reel	2.8
UMW XC6219B302MR	LXZK	SOT-23-5	3000	Tape and reel	3
UMW XC6219B332MR	LB2K	SOT-23-5	3000	Tape and reel	3.3
UMW XC6219B362MR	LB5K	SOT-23-5	3000	Tape and reel	3.6
UMW XC6219B502MR	LBMK	SOT-23-5	3000	Tape and reel	5
UMW XC6219B152PR	LXEK	SOT89-5	3000	Tape and reel	1.5
UMW XC6219B182PR	LXKK	SOT89-5	3000	Tape and reel	1.8
UMW XC6219B252PR	LXTK	SOT89-5	3000	Tape and reel	2.5
UMW XC6219B282PR	LXXK	SOT89-5	3000	Tape and reel	2.8
UMW XC6219B302PR	LXZK	SOT89-5	3000	Tape and reel	3
UMW XC6219B332PR	LB2K	SOT89-5	3000	Tape and reel	3.3
UMW XC6219B362PR	LB5K	SOT89-5	3000	Tape and reel	3.6
UMW XC6219B502PR	LBMK	SOT89-5	3000	Tape and reel	5

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