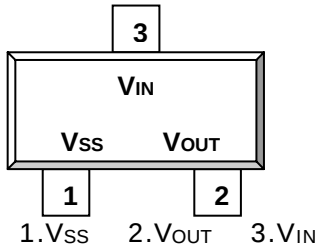
DESCRIPTION

ST6205 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 correction, current limiter and a phase compensation circuit plus a driver transistor. Output voltage is selectable in 50mV increments within a range of 1.5V~5.0V. 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 feedback 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. ST6205 family is compatible with low ESR capacitors. The current limiter's feedback circuit also operates as a short protect for the output current limiter.

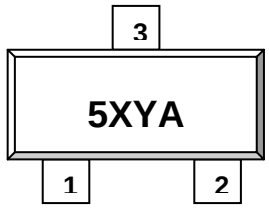
PIN CONFIGURATION

SOT-23-3L / SOT-323



PART MARKING

SOT-23-3L / SOT-323



X: Voltage Code
Y: Year Code
A: Process Code

APPLICATIONS

- Battery Power Equipment
- Cellular Phone
- Digital Cameras
- Computer Disk Drivers
- Portable games
- Communiction tools

FEATURE

- Highly Accurate +/-2%
- Dropout Voltage 300mV @100mA (3.0V type)
- High Ripple Rejection 70dB (10kHz)
- Low Power Consumption 20uA (TYP)
- Maximum Output Current 150mA
- Standby Current less than 0.1uA
- Internal protector current limiter and short protector
- Small packages SOT-23-3L / SOT323, and other required

ORDERING INFORMATION

Part Number	Package	Part Marking
ST6205XS23RG	SOT-323	5XYA
ST6205XS32RG	SOT-23-3L	5XYA

※ Process Code : A ~ Z ; a ~ z
※ ST6205XS23RG X : Voltage Code S : SOT-23-3L ; R : Tape Reel ; G : Pb – Free
※ ST6205XS32RG X : Voltage Code S : SOT-323 ; R : Tape Reel ; G : Pb – Free

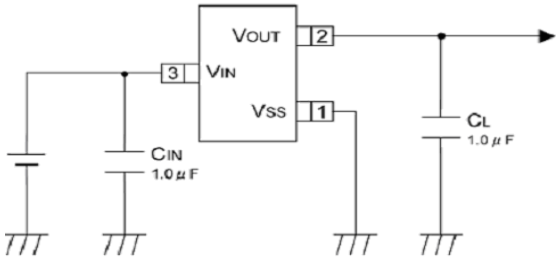
PIN DESCRIPTION

SOT-23-3L	SOT-323	Symbol	Description
1	1	V_{SS}	Ground
2	2	V_{OUT}	Voltage Input
3	3	V_{IN}	Voltage Output

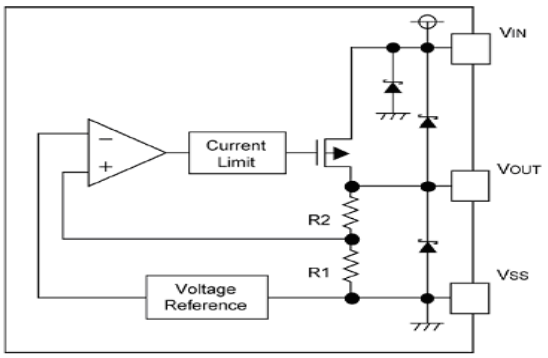
VOLTAGE CODE INFORMATION

Voltage Code (X)	Output Voltage (V)
A	1.8
B	2.5
C	2.8
F	3.3

APPLCATION CIRCUT



BLOCK DIAGRAM



ABSOULTE MAXIMUM RATINGS (TA=25℃ unless otherwise specified)

Parameter	Symbol		Value	Unit
Input Voltage	VIN		7	V
Output Current	IOUT		500	mA
Output Voltage	VOUT		VSS-0.3V~VIN+0.3V	mA
Thermal Resistance	ΘJA	SOT-23-3L SOT-323	120 105	℃/W
Power Dissipation	PD	SOT-23-3L SOT-323	1250 950	mW
Operation Junction Temperature Range	TJ		-40 ~ +85	℃
Storgae Temperature Range	TSTG		-55 ~ +125	℃

ELECTRICAL CHARACTERISTICS (T_A = 25℃ unless otherwise specified)

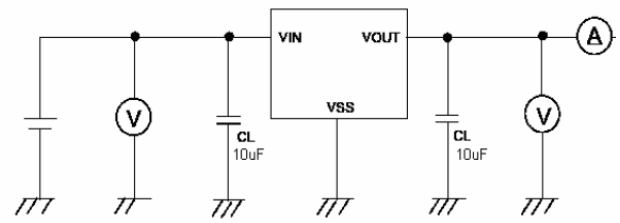
Parameter	Symbol	Condition	Min	Typ	Max	Unit
Output Voltage	V_{OUT}(E)	V_{IN}=V_{OUT}+1.0V,I_{OUT}= 30mA	x 0.98	$V_{OUT(T)}$	x 1.02	V
Maximum Output Current	I_{OUT}	V_{IN} ≧V_{OUT} +1.0V	300			mA
Load Regulation	△V_{OUT}	$V_{OUT(T)}$ ＞1.8V : 1mA≦I_{OUT}≦100mA		25	$V_{OUT(T)}$ X1%	mV
Dropout Voltage	Vdif 1	I_{OUT}=30mA		E2	E2	mV
	Vdif 2	I_{OUT}=100mA		E3	E3	mV
Supply Current	I_{DD}	V_{IN}=5V		1.5	3.0	uA
Line Regulations	V_{OUT} / (△V_{IN}–V_{OUT})	$V_{OUT(T)}$＜4.5V : $V_{OUT(T)}$+1.0V≦V_{IN}≦6V $V_{OUT(T)}$ ≧ 4.5V : 5.5V≦V_{IN}≦6.0V I_{OUT} = 30mA		0.05	0.25	%/V
Input Voltage	VIN		1.8		7.0	V
Output Voltage Temperature Characteristics	△V_{OUT} /(△Topr–V_{OUT})	I_{OUT}=30mA -40℃≦Topr≦85℃		±100		ppm/℃
Ripple-Rejection	|PSRR|	V_{IN}=V_{OUT}+1.0V, f=1KHz, Vrip=0.5Vrms, I_{OUT}=60mA		40		dB
Current Limiter	Ishort	V_{IN}=V_{OUT}+1.5V, V_{OUT}=V_{SS}		E4		mA

(NOTE 1) VOUT(T) = Specified Output Voltage
(NOTE 2) $V_{OUT(E)}$ = Effective Output Voltage (Ie. The output voltage when "$V_{OUT(T)}$+1.0V" is provided at the V_{IN} pin while maintaining a certain I_{OUT} value.)
(NOTE 3) Vdif = {$V_{IN\,1}$ (NOTE5) + $V_{OUT\,1}$ (NOTE4)}
(NOTE 4) V_{OUT1} = A voltage equal to 98% of the Output Voltage whenever an amply stabilized I_{OUT} {$V_{OUT(T)}$ + 1.0V} is Input.
(NOTE 5) $V_{IN\,1}$ = The Input Voltage when $V_{OUT\,1}$ appears as Input Voltage is gradually decreased.
(NOTE 6) Unless otherwise stated, VIN = VOUT(T)+1.0V

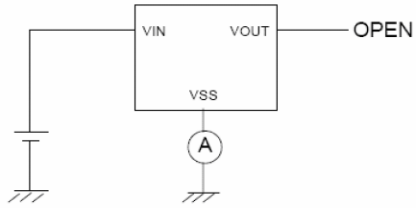
VOUT	VOUT (2%)		E1	E2		E3		E4
			IOUT	Vdif1		Vdif2		Ishort
	Min	Max	Min	Typ	Max	Typ	Max	Typ
1.5	1.47	1.53	200	350	500	750	850	155
1.8	1.76	1.86	250	90	150	250	350	130
2.5	2.45	2.55	250	65	120	200	300	115
3.0	2.94	3.06	250	40	100	150	200	80
3.1	3.03	3.16	250	40	100	150	200	80
3.3	3.23	3.36	250	35	100	140	200	80

TEST CIRCUIT

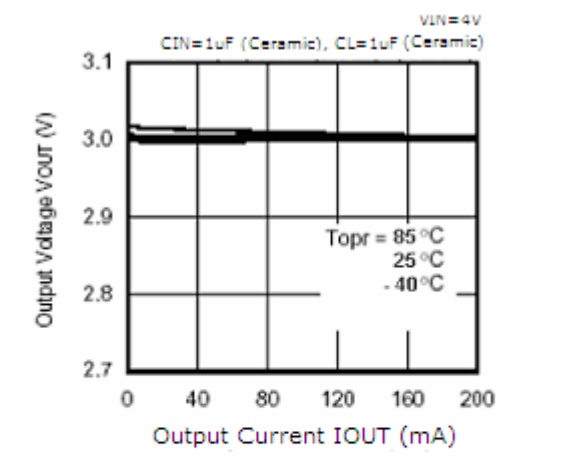
Circuit 1 :

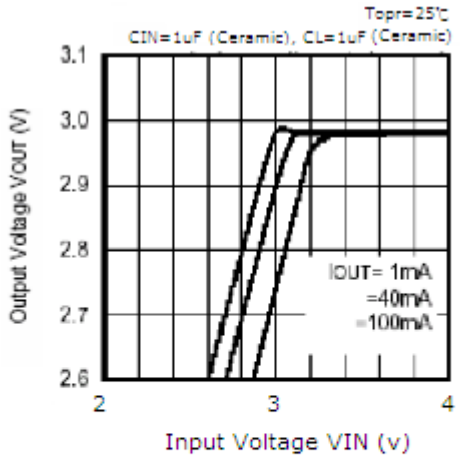


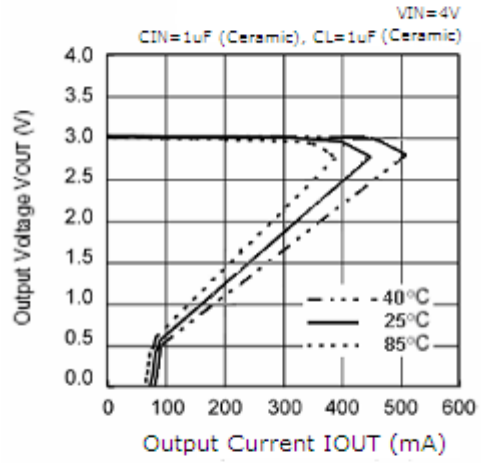
Circuit 2 :

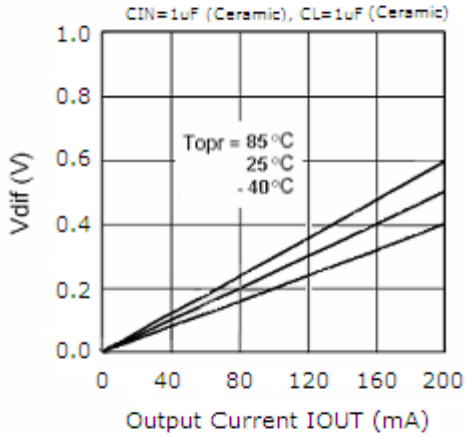


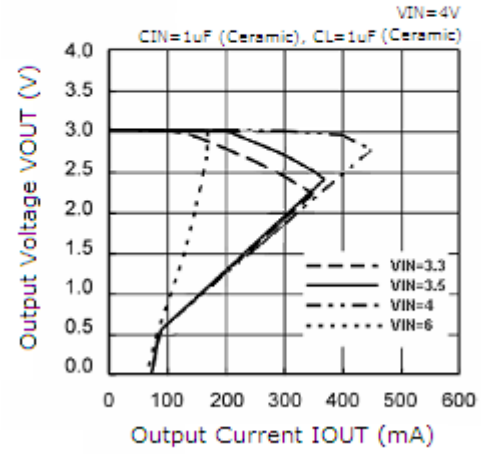
PERFORMANCE CHARACTERICTICS (Voltage Code = 3.0V)

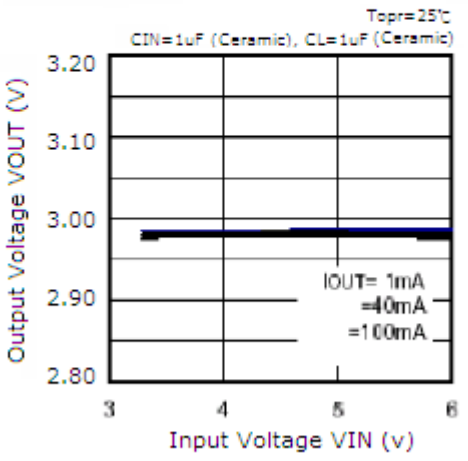




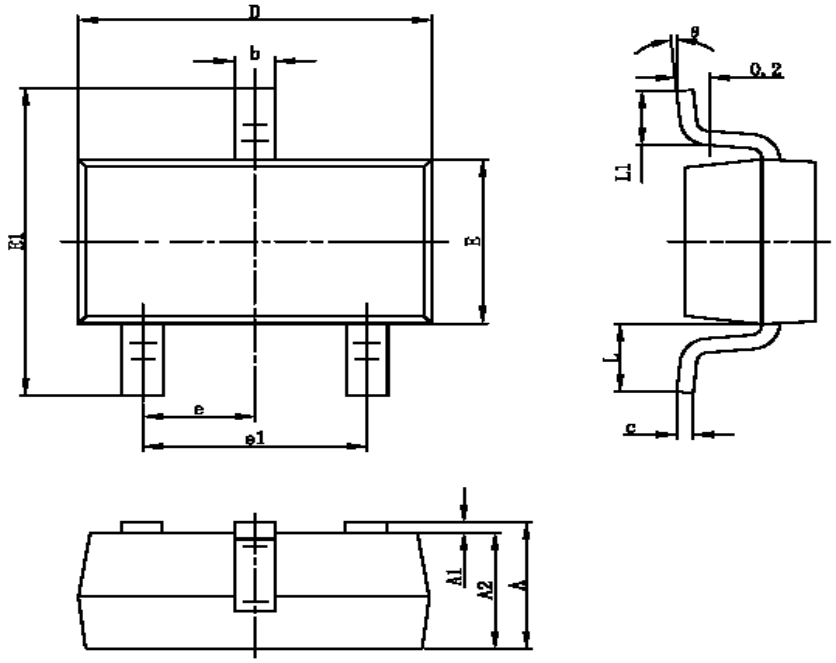






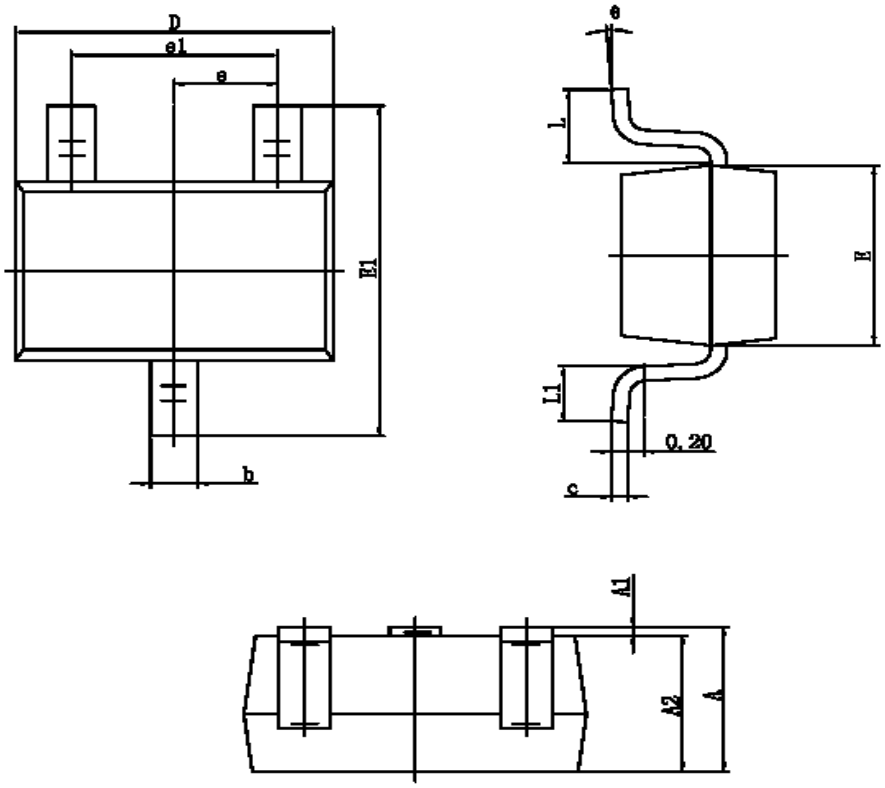


SOT-23-3L PACKAGE OUTLINE



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	0.400	0.012	0.016
c	0.100	0.200	0.004	0.008
D	2.820	3.020	0.111	0.119
E	1.500	1.700	0.059	0.067
E1	2.650	2.950	0.104	0.116
e	0.950TYP		0.037TYP	
e1	1.800	2.000	0.071	0.079
L	0.700REF		0.028REF	
L1	0.300	0.600	0.012	0.024
θ	0°	8°	0°	8°

SOT-323 PACKAGE OUTLINE



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.100	0.035	0.043
A1	0.000	0.100	0.000	0.004
A2	0.900	1.000	0.035	0.039
b	0.200	0.400	0.008	0.016
c	0.080	0.150	0.003	0.006
D	2.000	2.200	0.079	0.087
E	1.150	1.350	0.045	0.053
E1	2.150	2.450	0.085	0.096
e	0.650TYP		0.026TYP	
e1	1.200	1.400	0.047	0.055
L	0.525REF		0.021REF	
L1	0.260	0.460	0.010	0.018
θ	0°	8°	0°	8°