XC6201 Series

TOREX

Positive Voltage Regulators

■GENERAL DESCRIPTION

The XC6201 series are highly precise, low power consumption, positive voltage regulators manufactured using CMOS and laser trimming technologies.

The series provides large currents with a significantly small dropout voltage.

The XC6201 consists of a current limiter circuit, a driver transistor, a precision reference voltage and an error amplifier. Output voltage is selectable in 0.1V steps between 1.3V ~ 6.0V.

SOT-25, SOT-89 and USP-6B packages are available.

■APPLICATIONS

●Smart phones / Mobile phones

●Portable game consoles

●Digital still cameras / Camcorders

●Digital audio equipment

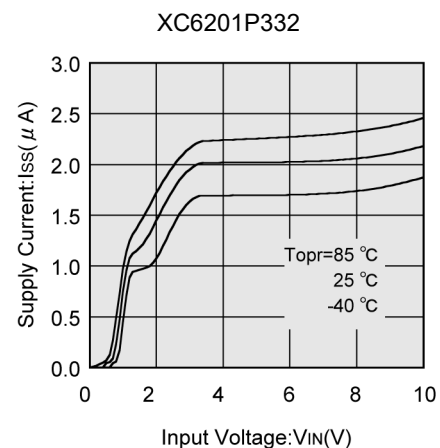●Reference voltage sources

●Multi-function power supplies

■FEATURES

Maximum Output Current	: 250mA (TYP.)
Dropout Voltage	: 0.16V @ 100mA
	: 0.40V @ 200mA
Maximum Operating Voltage	: 10V
Output Voltage Range	: 1.3V ~ 6.0V (0.1V increments)
Fixed Voltage Accuracy	: ±1% ($V_{OUT(T)} \geq 2.0V$)
	±2%
Low Power Consumption	: 2.0μA (TYP.)
Operating Ambient Temperature	: -40℃ ~ 85℃
Packages	: SOT-25,
	SOT-89
	USP-6B
Environmentally Friendly	: EU RoHS Compliant, Pb Free

Tantalum or Ceramic Capacitor compatible
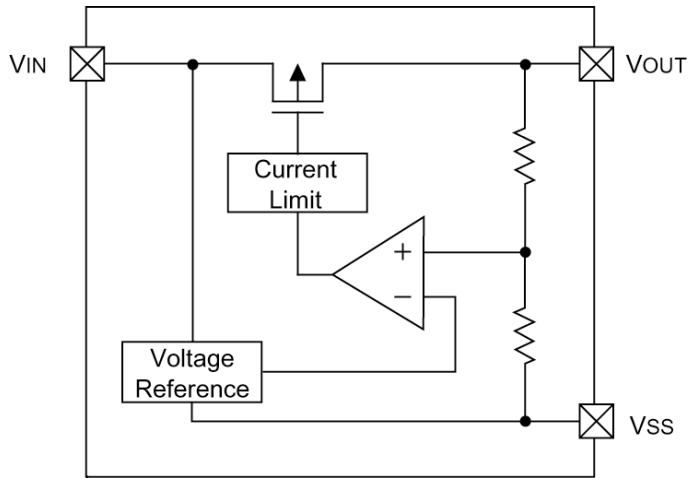
■TYPICAL APPLICATION CIRCUIT

V$_{IN}$ V$_{OUT}$

V$_{SS}$

1.0μF(tantalum)   1.0μF(tantalum)
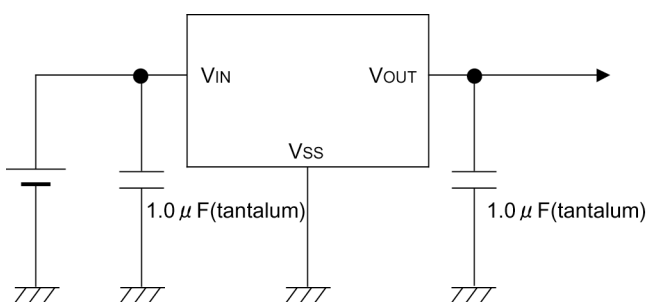
■TYPICAL PERFORMANCE CHARACTERISTICS

●Supply Current vs. Input Voltage

XC6201P332

Supply Current:Iss(μA)

Topr=85 ℃
25 ℃
-40 ℃

Input Voltage:V$_{IN}$(V)

■BLOCK DIAGRAM

■PRODUCT CLASSIFICATION

●Ordering Information

X C 6 2 0 1 P ③④⑤⑥⑦-⑧(*1)

① ②

| DESIGNATOR	ITEM	SYMBOL	DESCRIPTION
①	Product Number	01	-
②	Type of Regulator	P	3-pin regulator
③④	Output Voltage	13 ~ 60	e.g. 30:3.0V 50:5.0V
⑤	Output Voltage Accuracy	1	±1%
		2	±2%
⑥⑦-⑧	Packages (Order Unit)	MR-G	SOT-25 (3,000pcs/Reel)
		PR-G	SOT-89 (1,000pcs/Reel)
		DR-G	USP-6B (3,000pcs/Reel)

(*1) The "-G" suffix denotes Halogen and Antimony free as well as being fully EU RoHS compliant.
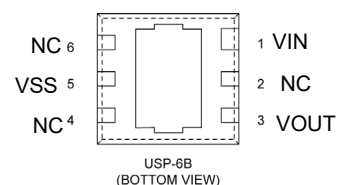
* ±1% accuracy can be set at $V_{OUT(T)} \geq 2.0V$.

■PIN CONFIGURATION
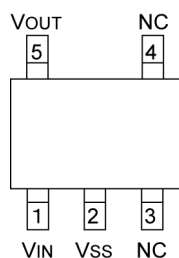
SOT-25
(TOP VIEW)
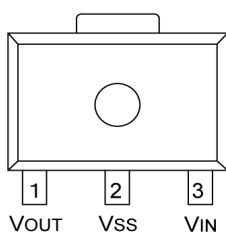
SOT-89
(TOP VIEW)

USP-6B
(BOTTOM VIEW)

*The dissipation pad for the USP-6B package should be solder-plated in recommended mount pattern and metal masking so as to enhance mounting strength and heat release.
If the pad needs to be connected to other pins, it should be connected to the VSS (No.5) pin.

■PIN ASSIGNMENT

PIN NUMBER			PIN NAME	FUNCTION
SOT-25	SOT-89	USP-6B		
5	1	3	V_{OUT}	Output
2	2	5	V_{SS}	Ground
1	3	1	V_{IN}	Power Input
3, 4	-	2,4,6	NC	No Connection

■ABSOLUTE MAXIMUM RATINGS

Ta = 25℃

PARAMETER		SYMBOL	RATINGS	UNITS
Input Voltage		V_{IN}	12.0	V
Output Current		I_{OUT}	500	mA
Output Voltage		V_{OUT}	$V_{SS}-0.3 \sim V_{IN}+0.3$	V
Power Dissipation	SOT-25	Pd	250	mW
			760 (JESD51-7 board) [*1]	
	SOT-89		500	
			1000 (40mm x 40mm Standard board) [*1]	
	USP-6B		120	
			1000 (40mm x 40mm Standard board) [*1]	
Operating Temperature		Topr	-40 ~ 85	℃
Storage Temperature		Tstg	-55 ~ 125	℃

Each voltage rating is based on V_{SS}.

[*1] The power dissipation figure shown is PCB mounted and is for reference only.
Please refer to PACKAGING INFORMATION for the mounting condition.

■ELECTRICAL CHARACTERISTICS

XC6201P132 $V_{OUT(T)}$=1.3V [*1]   Ta=25℃

PARAMETER	SYMBOL	CONDITIONS	MIN.	TYP.	MAX.	UNITS	CIRCUIT
Output Voltage	$V_{OUT(E)}$ [*2]	V_{IN}=2.3V I_{OUT}=10mA	1.274	1.300	1.326	V	②
Maximum Output Current	I_{OUTmax}	V_{IN}=2.3V $V_{OUT(E)}$≧1.17V	60	-	-	mA	②
Load Regulation	$\triangle V_{OUT}$	V_{IN}=2.3V 1mA≦I_{OUT}≦30mA	-	10	30	mV	②
Dropout Voltage [*3]	Vdif1	I_{OUT}=30mA	-	200	600	mV	②
	Vdif2	I_{OUT}=60mA	-	500	810		
Supply Current	I_{SS}	V_{IN}=2.3V	-	2.0	5.0	μA	①
Line Regulation	$\dfrac{\triangle V_{OUT}}{\triangle V_{IN}\cdot\triangle V_{OUT}}$	I_{OUT}=10mA 2.3V≦V_{IN}≦10.0V	-	0.2	0.3	%/V	②
Input Voltage	V_{IN}		1.8	-	10	V	-
Output Voltage Temperature Characteristics	$\dfrac{\triangle V_{OUT}}{\triangle Topr\cdot\triangle V_{OUT}}$	I_{OUT}=40mA -40℃≦Topr≦85℃	-	±100	-	ppm/℃	②

XC6201P182 $V_{OUT(T)}$=1.8V [*1]   Ta=25℃

PARAMETER	SYMBOL	CONDITIONS	MIN.	TYP.	MAX.	UNITS	CIRCUIT
Output Voltage	$V_{OUT(E)}$ [*2]	V_{IN}=2.8V IOUT=40mA	1.764	1.800	1.836	V	②
Maximum Output Current	I_{OUTmax}	V_{IN}=2.8V $V_{OUT(E)}$≧1.62V	80	-	-	mA	②
Load Regulation	$\triangle V_{OUT}$	V_{IN}=2.8V 1mA≦I_{OUT}≦40mA	-	10	30	mV	②
Dropout Voltage [*3]	Vdif1	I_{OUT}=40mA	-	200	370	mV	②
	Vdif2	I_{OUT}=80mA	-	450	710		
Supply Current	I_{SS}	V_{IN}=2.8V	-	2.0	5.0	μA	①
Line Regulation	$\dfrac{\triangle V_{OUT}}{\triangle V_{IN}\cdot\triangle V_{OUT}}$	I_{OUT}=40mA 2.8V≦V_{IN}≦10.0V	-	0.2	0.3	%/V	②
Input Voltage	VIN		1.8	-	10	V	-
Output Voltage Temperature Characteristics	$\dfrac{\triangle V_{OUT}}{\triangle Topr\cdot\triangle V_{OUT}}$	I_{OUT}=40mA -40℃≦Topr≦85℃	-	±100	-	ppm/℃	②

XC6201P272 $V_{OUT(T)}$=2.7V [*1]   Ta=25℃

PARAMETER	SYMBOL	CONDITIONS	MIN.	TYP.	MAX.	UNITS	CIRCUIT
Output Voltage	$V_{OUT(E)}$ [*2]	V_{IN}=3.7V I_{OUT}=40mA	2.646	2.700	2.754	V	②
Maximum Output Current	I_{OUTmax}	V_{IN}=3.7V $V_{OUT(E)}$≧2.43V	100	-	-	mA	②
Load Regulation	$\triangle V_{OUT}$	V_{IN}=3.7V 1mA≦I_{OUT}≦60mA	-	15	40	mV	②
Dropout Voltage [*3]	Vdif1	I_{OUT}=60mA	-	200	370	mV	②
	Vdif2	I_{OUT}=120mA	-	450	710		
Supply Current	I_{SS}	V_{IN}=3.7V	-	2.0	5.0	μA	①
Line Regulation	$\dfrac{\triangle V_{OUT}}{\triangle V_{IN}\cdot\triangle V_{OUT}}$	I_{OUT}=40mA 3.7V≦V_{IN}≦10.0V	-	0.2	0.3	%/V	②
Input Voltage	V_{IN}		1.8	-	10	V	-
Output Voltage Temperature Characteristics	$\dfrac{\triangle V_{OUT}}{\triangle Topr\cdot\triangle V_{OUT}}$	I_{OUT}=40mA -40℃≦Topr≦85℃	-	±100	-	ppm/℃	②

■ELECTRICAL CHARACTERISTICS (Continued)

XC6201P332 $V_{OUT(T)}$=3.3V [*1]   Ta=25℃

PARAMETER	SYMBOL	CONDITIONS	MIN.	TYP.	MAX.	UNITS	CIRCUIT
Output Voltage	$V_{OUT(E)}$ [*2]	V_{IN}=4.3V I_{OUT}=40mA	3.234	3.300	3.366	V	②
Maximum Output Current	I_{OUTmax}	V_{IN}=4.3V $V_{OUT(E)}$≧2.97V	150	-	-	mA	②
Load Regulation	$\triangle V_{OUT}$	V_{IN}=4.3V 1mA≦I_{OUT}≦80mA	-	20	50	mV	②
Dropout Voltage [*3]	Vdif1	I_{OUT}=80mA	-	200	360	mV	②
	Vdif2	I_{OUT}=160mA	-	450	700		
Supply Current	I_{SS}	V_{IN}=4.3V	-	2.0	5.0	μA	①
Line Regulation	$\dfrac{\triangle V_{OUT}}{\triangle V_{IN}\cdot\triangle V_{OUT}}$	I_{OUT}=40mA 4.3V≦V_{IN}≦10.0V	-	0.2	0.3	%/V	②
Input Voltage	V_{IN}		1.8	-	10	V	-
Output Voltage Temperature Characteristics	$\dfrac{\triangle V_{OUT}}{\triangle Topr\cdot\triangle V_{OUT}}$	I_{OUT}=40mA -40℃≦Topr≦85℃	-	±100	-	ppm/℃	②

XC6201P502 $V_{OUT(T)}$=5.0V [*1]   Ta=25℃

PARAMETER	SYMBOL	CONDITIONS	MIN.	TYP.	MAX.	UNITS	CIRCUIT
Output Voltage	$V_{OUT(E)}$ [*2]	V_{IN}=6.0V I_{OUT}=40mA	4.900	5.000	5.100	V	②
Maximum Output Current	I_{OUTmax}	VI_{N}=6.0V $V_{OUT(E)}$≧4.57V	200	-	-	mA	②
Load Regulation	$\triangle V_{OUT}$	V_{IN}=6.0V 1mA≦I_{OUT}≦100mA	-	30	70	mV	②
Dropout Voltage [*3]	Vdif1	I_{OUT}=100mA	-	160	340	mV	②
	Vdif2	I_{OUT}=200mA	-	400	600		
Supply Current	I_{SS}	V_{IN}=6.0V	-	2.0	6.0	μA	①
Line Regulation	$\dfrac{\triangle V_{OUT}}{\triangle V_{IN}\cdot\triangle V_{OUT}}$	I_{OUT}=40mA 6.0V≦V_{IN}≦10.0V	-	0.2	0.3	%/V	②
Input Voltage	V_{IN}		1.8	-	10	V	-
Output Voltage Temperature Characteristics	$\dfrac{\triangle V_{OUT}}{\triangle Topr\cdot\triangle V_{OUT}}$	I_{OUT}=40mA -40℃≦Topr≦85℃	-	±100	-	ppm/℃	②

NOTE:
  *1: $V_{OUT(T)}$ = Nominal output voltage.
  *2: $V_{OUT(E)}$ = Effective output voltage (i.e. the output voltage when "$V_{OUT(T)}$+1.0V" is provided while maintaining a certain I_{OUT} value).
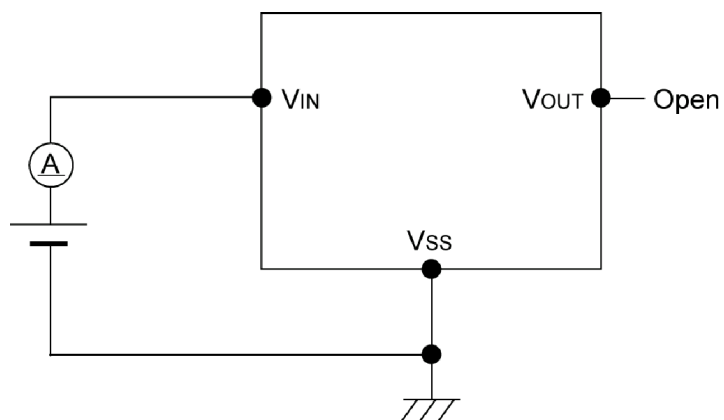 *3: Vdif = (V_{IN1}- V_{OUT1})
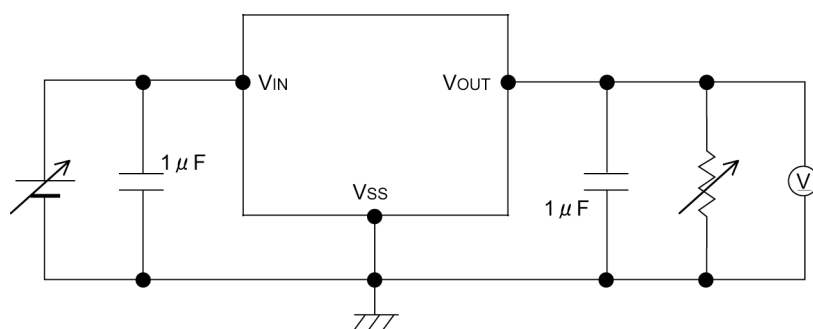   VIN1 :An Input Voltage when V_{OUT1} appears as the input voltage is gradually decreased.
      V_{OUT1} : A voltage equal to 98% of the output voltage when a stabilized ($V_{OUT(T)}$ + 1.0V) is input.
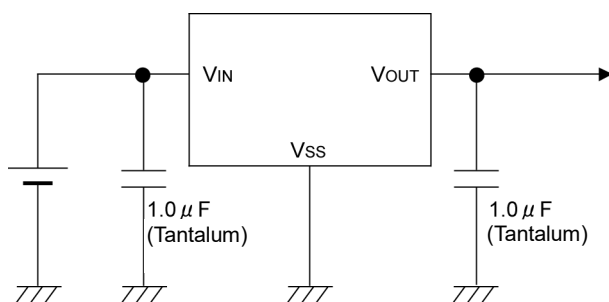
■TEST CIRCUITS

Circuit ① : Supply Current

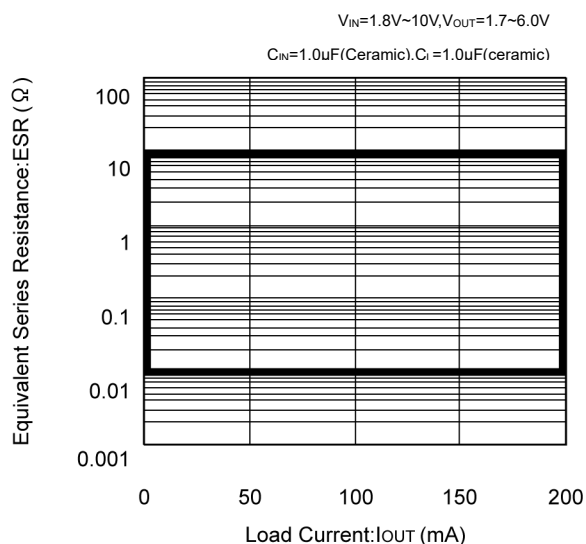Circuit ② : Output Voltage, Oscillation, Line Regulation, Dropout Voltage, Load Regulation

■OPERATIONAL EXPLANATION

With the XC6201 series regulator, in order to ensure the stabilized output voltage, we suggest that an output capacitor (C_L) of 1μF or more be connected between the output pin (V_{OUT}) and the V_{SS} pin. For using low ESR capacitor (e.g. ceramic capacitors), please make sure that the output voltage is more than 1.7V. When the output voltage is from 1.3V to 1.6V, the output capacitor should be a tantalum capacitor with a capacitance of 2.2μF. We also suggest an input capacitor (C_{IN}) should be connected between the V_{IN} and the V_{SS} in order to stabilize input power source.

OUTPUT VOLTAGE	C_{IN}	C_L (TANTALUM)	C_L (LOW ESR)
1.3V ~ 1.6V	≧1.0μF	≧2.2μF	-
1.7V ~ 6.0V	≧1.0μF	≧1.0μF	≧1.0μF

V_{IN}=1.8V~10V,V_{OUT}=1.7~6.0V
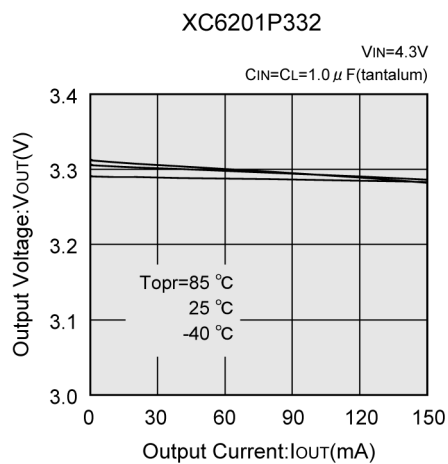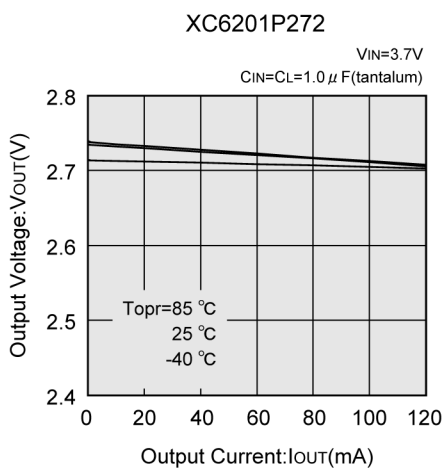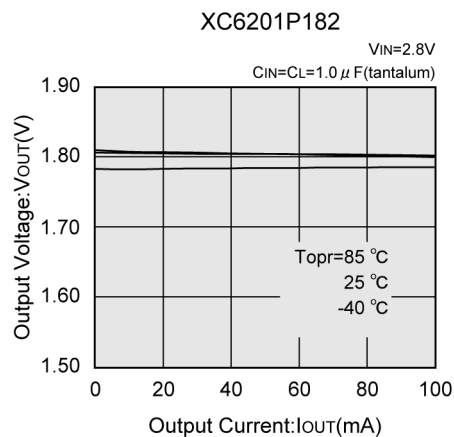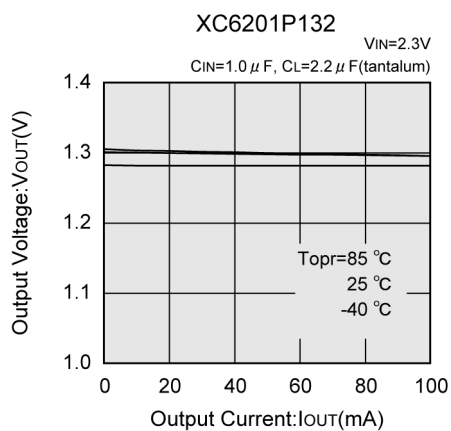
C_{IN}=1.0uF(Ceramic).C_l=1.0uF(ceramic)

■ NOTE ON USE

1. Please use this IC within the stated absolute maximum ratings. The IC is liable to malfunction should the ratings be exceeded. When a voltage higher than the V_{IN} flows to the V_{OUT} like when using two power supplies, please connect a Schottky barrier diode between the V_{OUT} and the V_{IN} and do not exceed the V_{OUT} rating.

2. An oscillation may occur by the impedance between a power supply and the input of the IC. Where the impedance is 10Ω or more, please use an input capacitor (C_{IN}) of at least 1μF. In case of high output current, operation can be stabilized by increasing the input capacitor value. Also an oscillation may occur if the input capacitor value is smaller than the input impedance when the output capacitance (C_L) is large. In such cases, operations can be stabilized by either increasing the input capacitor value or reducing the output capacitor value.

3. Please ensure that output current (I_{OUT}) is less than Pd / (V_{IN} - V_{OUT}) and do not exceed the rated power dissipation value (Pd) of the package.

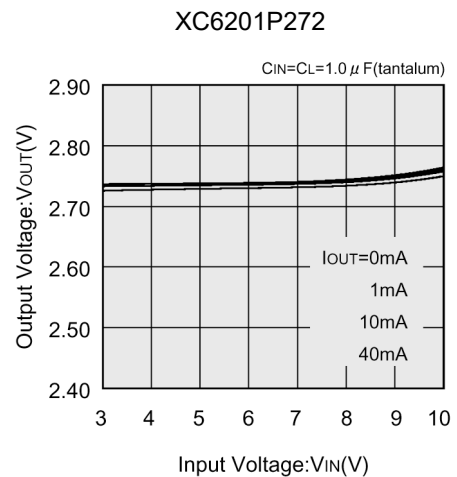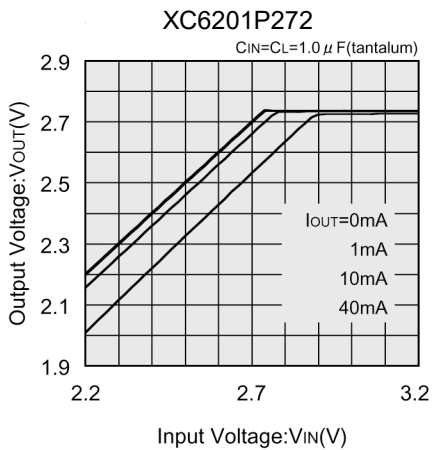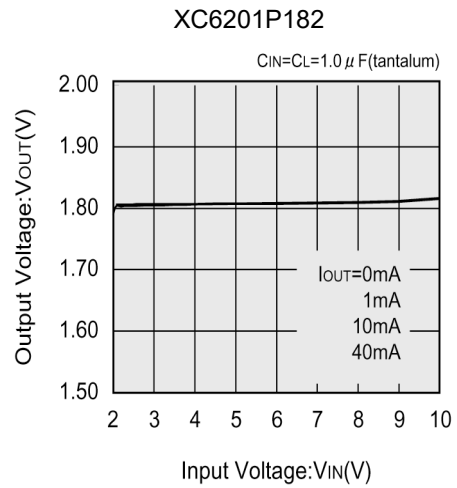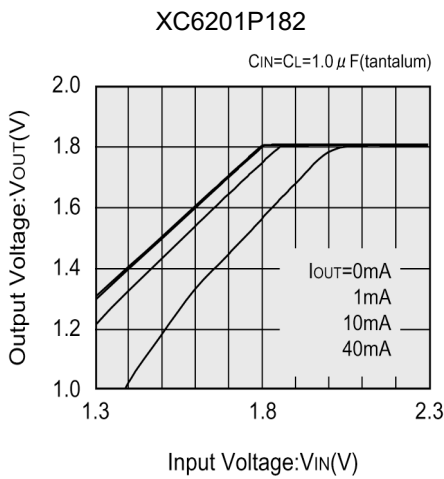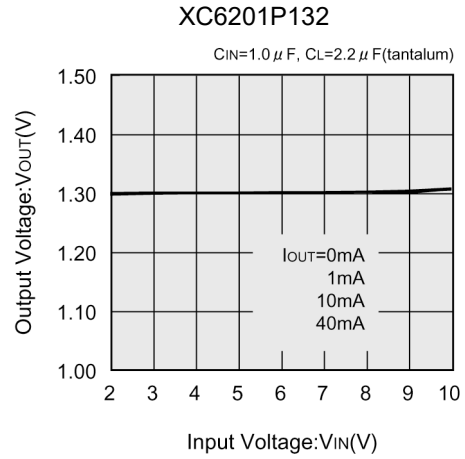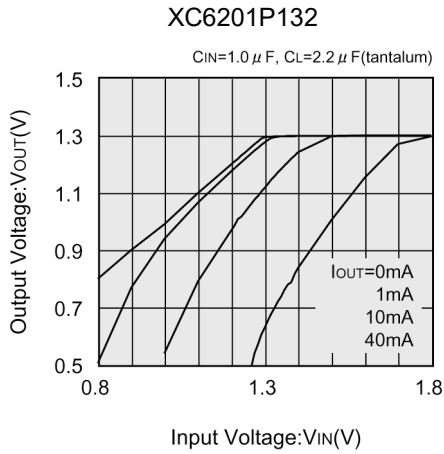# ■TYPICAL PERFORMANCE CHARACTERISTICS

(1) Output Voltage vs. Output Current

XC6201P132

V_{IN}=2.3V
C_{IN}=1.0μF, C_L=2.2μF(tantalum)

Output Voltage:V_{OUT}(V)
Output Current:I_{OUT}(mA)

Topr=85 ℃
25 ℃
-40 ℃

XC6201P182

V_{IN}=2.8V
C_{IN}=C_L=1.0μF(tantalum)

Output Voltage:V_{OUT}(V)
Output Current:I_{OUT}(mA)

Topr=85 ℃
25 ℃
-40 ℃

XC6201P272

V_{IN}=3.7V
C_{IN}=C_L=1.0μF(tantalum)

Output Voltage:V_{OUT}(V)
Output Current:I_{OUT}(mA)

Topr=85 ℃
25 ℃
-40 ℃

XC6201P332

V_{IN}=4.3V
C_{IN}=C_L=1.0μF(tantalum)

Output Voltage:V_{OUT}(V)
Output Current:I_{OUT}(mA)

Topr=85 ℃
25 ℃
-40 ℃

XC6201P502

V_{IN}=6.0V
C_{IN}=C_L=1.0μF(tantalum)

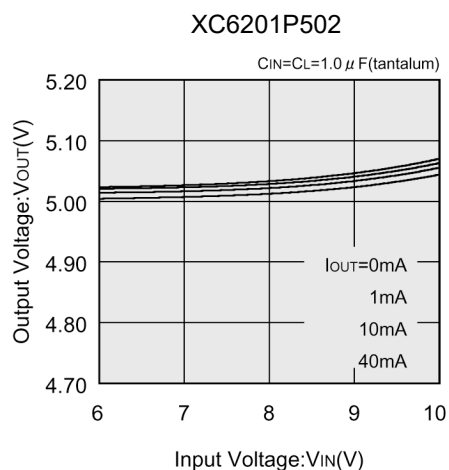Output Voltage:V_{OUT}(V)
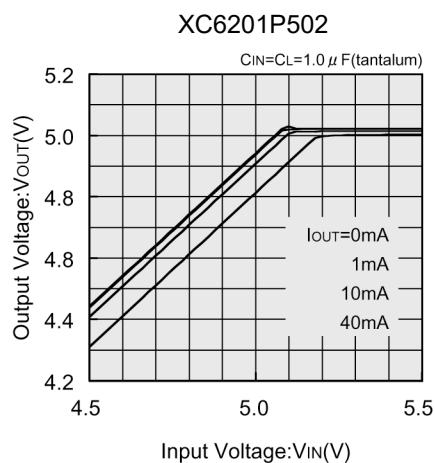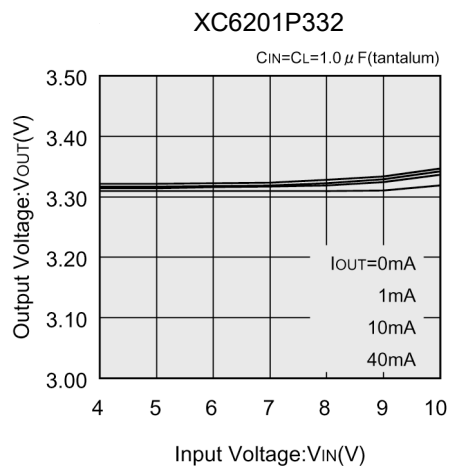Output Current:I_{OUT}(mA)

Topr=85 ℃
25 ℃
-40 ℃

■TYPICAL PERFORMANCE CHARACTERISTICS (Continued)

(2) Output Voltage vs. Input Voltage

XC6201P132

$C_{IN}=1.0\mu F$, $C_L=2.2\mu F$(tantalum)

Output Voltage:V_{OUT}(V) vs Input Voltage:V_{IN}(V)

I_{OUT}=0mA
1mA
10mA
40mA

XC6201P132

$C_{IN}=1.0\mu F$, $C_L=2.2\mu F$(tantalum)

Output Voltage:V_{OUT}(V) vs Input Voltage:V_{IN}(V)

I_{OUT}=0mA
1mA
10mA
40mA

XC6201P182

$C_{IN}=C_L=1.0\mu F$(tantalum)

Output Voltage:V_{OUT}(V) vs Input Voltage:V_{IN}(V)

I_{OUT}=0mA
1mA
10mA
40mA

XC6201P182

$C_{IN}=C_L=1.0\mu F$(tantalum)

Output Voltage:V_{OUT}(V) vs Input Voltage:V_{IN}(V)

I_{OUT}=0mA
1mA
10mA
40mA

XC6201P272

$C_{IN}=C_L=1.0\mu F$(tantalum)

Output Voltage:V_{OUT}(V) vs Input Voltage:V_{IN}(V)

I_{OUT}=0mA
1mA
10mA
40mA

XC6201P272

$C_{IN}=C_L=1.0\mu F$(tantalum)

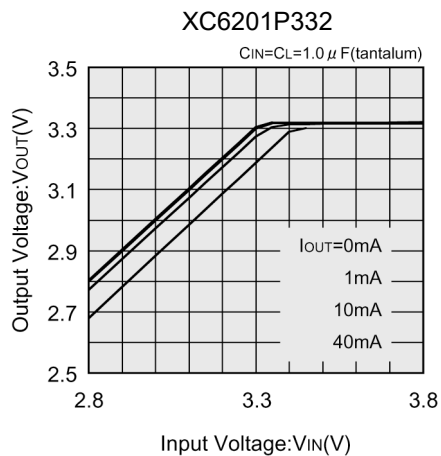Output Voltage:V_{OUT}(V) vs Input Voltage:V_{IN}(V)

I_{OUT}=0mA
1mA
10mA
40mA

■TYPICAL PERFORMANCE CHARACTERISTICS (Continued)

(2) Output Voltage vs. Input Voltage (Continued)

XC6201P332

$C_{IN}=C_L=1.0\mu F(tantalum)$
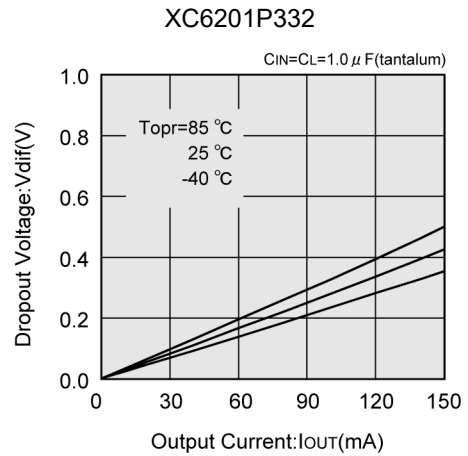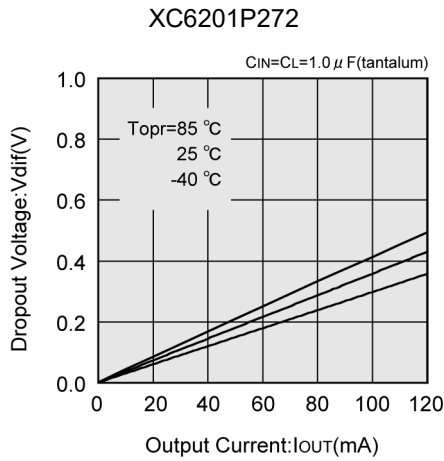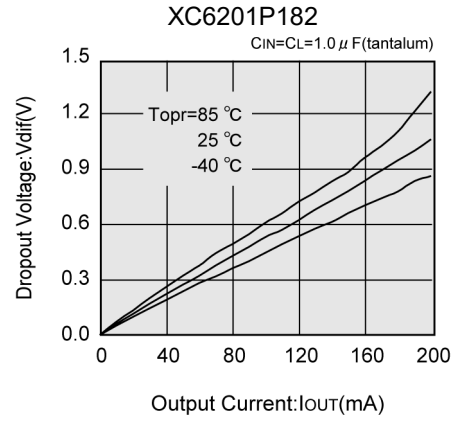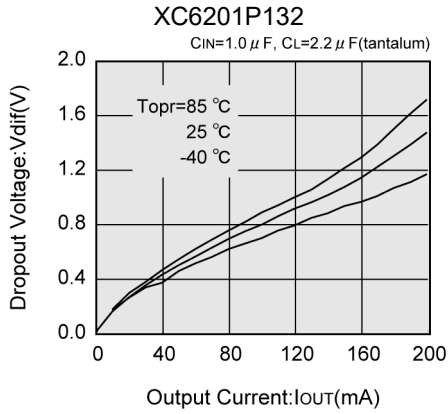
Output Voltage:V_{OUT}(V)

I_{OUT}=0mA
1mA
10mA
40mA

Input Voltage:V_{IN}(V)

XC6201P332

$C_{IN}=C_L=1.0\mu F(tantalum)$

Output Voltage:V_{OUT}(V)

I_{OUT}=0mA
1mA
10mA
40mA

Input Voltage:V_{IN}(V)

XC6201P502

$C_{IN}=C_L=1.0\mu F(tantalum)$

Output Voltage:V_{OUT}(V)

I_{OUT}=0mA
1mA
10mA
40mA

Input Voltage:V_{IN}(V)

XC6201P502

$C_{IN}=C_L=1.0\mu F(tantalum)$

Output Voltage:V_{OUT}(V)

I_{OUT}=0mA
1mA
10mA
40mA

Input Voltage:V_{IN}(V)

■TYPICAL PERFORMANCE CHARACTERISTICS (Continued)

(3) Dropout Voltage vs. Output Current
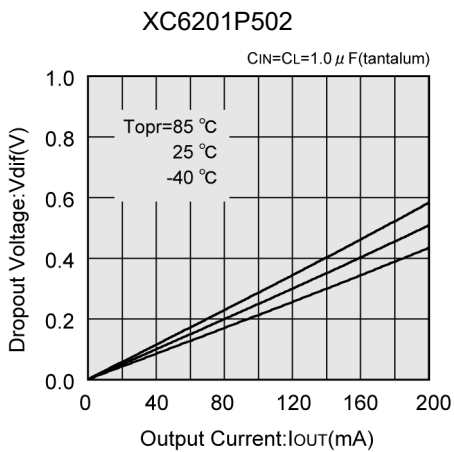
XC6201P132
$C_{IN}=1.0\mu F, C_L=2.2\mu F$(tantalum)

Dropout Voltage:Vdif(V)

Topr=85 ℃
25 ℃
-40 ℃

Output Current:I_{OUT}(mA)

XC6201P182
$C_{IN}=C_L=1.0\mu F$(tantalum)

Dropout Voltage:Vdif(V)

Topr=85 ℃
25 ℃
-40 ℃

Output Current:I_{OUT}(mA)

XC6201P272
$C_{IN}=C_L=1.0\mu F$(tantalum)

Dropout Voltage:Vdif(V)

Topr=85 ℃
25 ℃
-40 ℃

Output Current:I_{OUT}(mA)

XC6201P332
$C_{IN}=C_L=1.0\mu F$(tantalum)

Dropout Voltage:Vdif(V)

Topr=85 ℃
25 ℃
-40 ℃

Output Current:I_{OUT}(mA)

XC6201P502
$C_{IN}=C_L=1.0\mu F$(tantalum)

Dropout Voltage:Vdif(V)

Topr=85 ℃
25 ℃
-40 ℃

Output Current:I_{OUT}(mA)

■TYPICAL PERFORMANCE CHARACTERISTICS (Continued)

(4) Supply Current vs. Input Voltage

XC6201P132

XC6201P132

XC6201P182

XC6201P182

XC6201P272

XC6201P272

■TYPICAL PERFORMANCE CHARACTERISTICS (Continued)

(4) Supply Current vs. Input Voltage (Continued)

XC6201P332

XC6201P332

XC6201P502

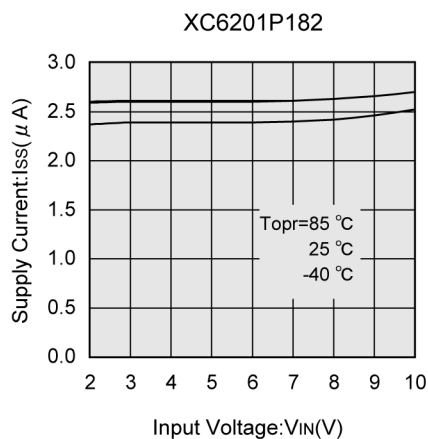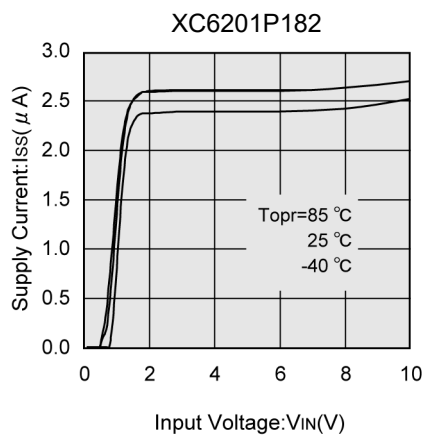

XC6201P502
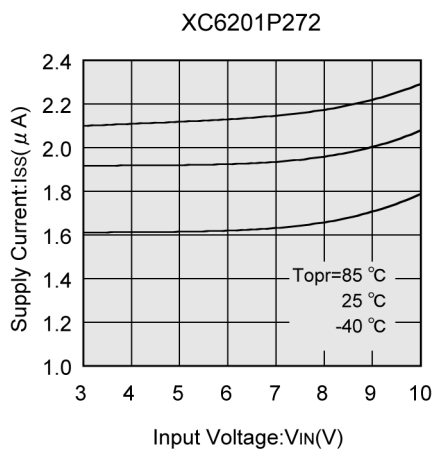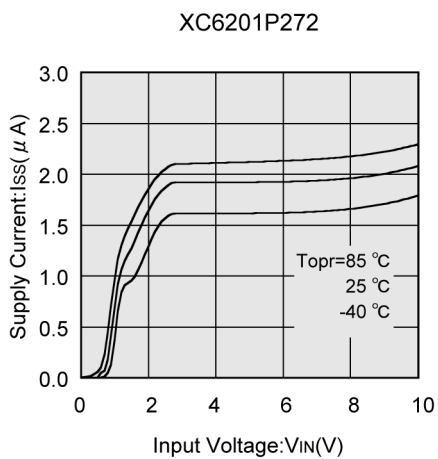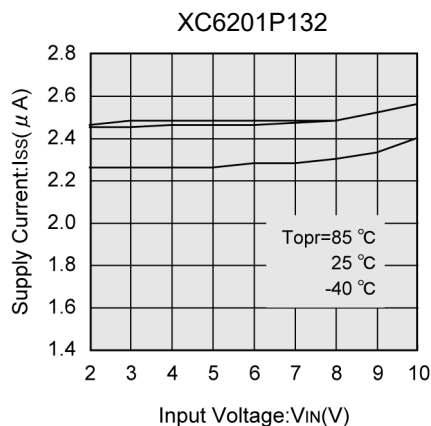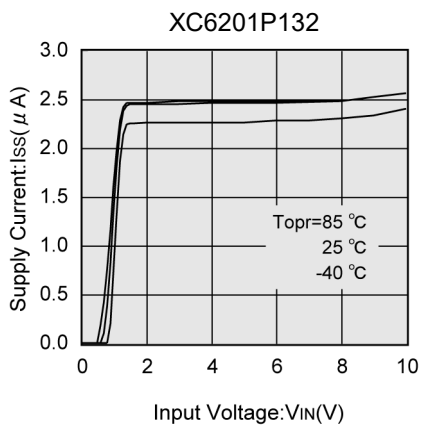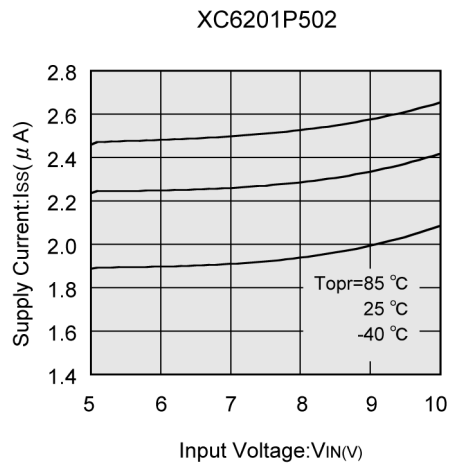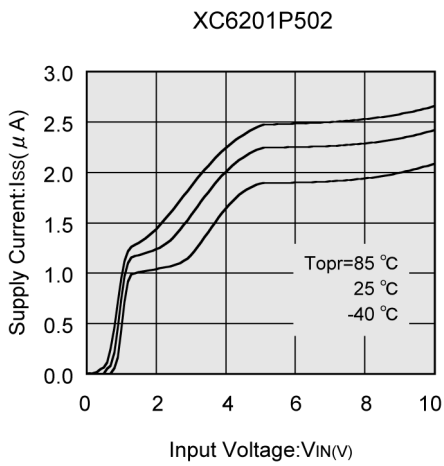
■TYPICAL PERFORMANCE CHARACTERISTICS (Continued)

(5) Output Voltage vs. Ambient Temperature

XC6201P132

V_{IN}=2.3V
C_{IN}=1.0μF, C_L=2.2μF(tantalum)

Output Voltage:V_{OUT}(V) vs. Ambient Temperature:Topr(°C)

I_{OUT}=0mA
1mA
10mA
40mA

XC6201P182

V_{IN}=2.8V
C_{IN}=C_L=1.0μF(tantalum)

Output Voltage:V_{OUT}(V) vs. Ambient Temperature:Topr(°C)

I_{OUT}=0mA
1mA
10mA
40mA

XC6201P272

V_{IN}=3.7V
C_{IN}=C_L=1.0μF(tantalum)

Output Voltage:V_{OUT}(V) vs. Ambient Temperature:Topr(°C)

I_{OUT}=0mA
1mA
10mA
40mA

XC6201P332

V_{IN}=4.3V
C_{IN}=C_L=1.0μF(tantalum)

Output Voltage:V_{OUT}(V) vs. Ambient Temperature:Topr(°C)

I_{OUT}=0mA
1mA
10mA
40mA

XC6201P502

V_{IN}=6.0V
C_{IN}=C_L=1.0μF(tantalum)

Output Voltage:V_{OUT}(V) vs. Ambient Temperature:Topr(°C)

I_{OUT}=0mA
1mA
10mA
40mA
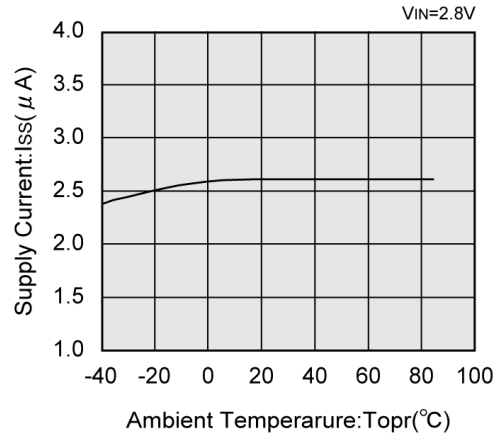
■TYPICAL PERFORMANCE CHARACTERISTICS (Continued)
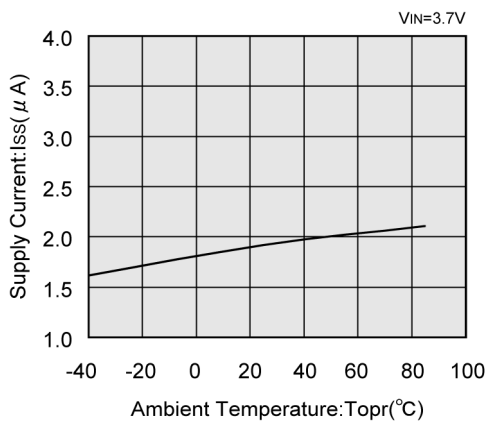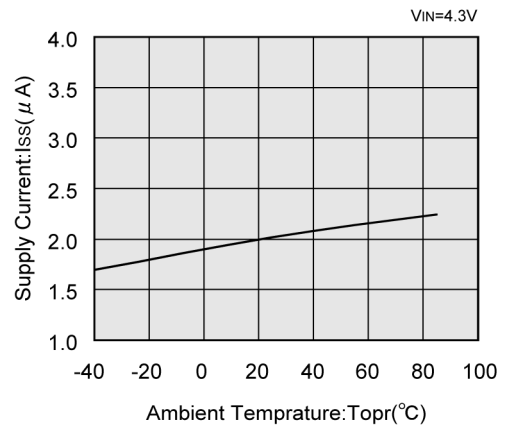
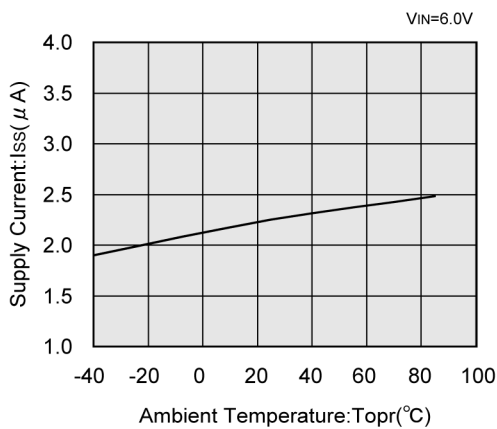(6) Supply Current vs. Ambient Temperature
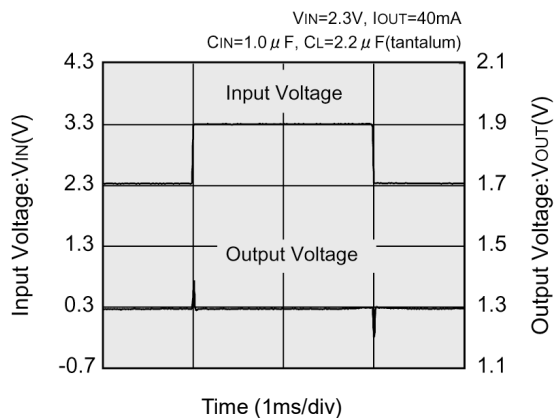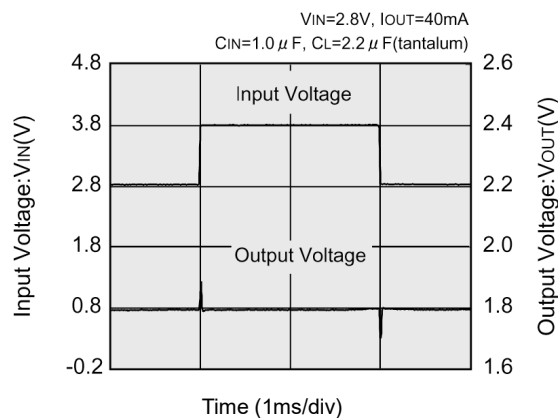
XC6201P132

XC6201P182

XC6201P272

XC6201P332

XC6201P502

■TYPICAL PERFORMANCE CHARACTERISTICS (Continued)

(7) Input Transient Response

XC6201P132

V$_{IN}$=2.3V, I$_{OUT}$=40mA
C$_{IN}$=1.0μF, C$_L$=2.2μF(tantalum)

Input Voltage

Output Voltage

Input Voltage:V$_{IN}$(V) — 4.3, 3.3, 2.3, 1.3, 0.3, -0.7
Output Voltage:V$_{OUT}$(V) — 2.1, 1.9, 1.7, 1.5, 1.3, 1.1

Time (1ms/div)

XC6201P182

V$_{IN}$=2.8V, I$_{OUT}$=40mA
C$_{IN}$=1.0μF, C$_L$=2.2μF(tantalum)

Input Voltage

Output Voltage

Input Voltage:V$_{IN}$(V) — 4.8, 3.8, 2.8, 1.8, 0.8, -0.2
Output Voltage:V$_{OUT}$(V) — 2.6, 2.4, 2.2, 2.0, 1.8, 1.6

Time (1ms/div)

XC6201P272

V$_{IN}$=3.7V, I$_{OUT}$=40mA
C$_{IN}$=1.0μF, C$_L$=2.2μF(tantalum)

Input Voltage

Output Voltage

Input Voltage:V$_{IN}$(V) — 5.7, 4.7, 3.7, 2.7, 1.7, 0.7
Output Voltage:V$_{OUT}$(V) — 3.5, 3.3, 3.1, 2.9, 2.7, 2.5

Time (1ms/div)

XC6201P332

V$_{IN}$=4.3V, I$_{OUT}$=40mA
C$_{IN}$=C$_L$=1.0μF(tantalum)

Input Voltage

Output Voltage

Input Voltage:V$_{IN}$(V) — 6.3, 5.3, 4.3, 3.3, 2.3, 1.3
Output Voltage:V$_{OUT}$(V) — 4.1, 3.9, 3.7, 3.5, 3.3, 3.1

Time (1ms/div)

XC6201P502

V$_{IN}$=6.0V, I$_{OUT}$=40mA
C$_{IN}$=C$_L$=1.0μF(tantalum)

Input Voltage

Output Voltage

Input Voltage:V$_{IN}$(V) — 8.0, 7.0, 6.0, 5.0, 4.0, 3.0
Output Voltage:V$_{OUT}$(V) — 5.8, 5.6, 5.4, 5.2, 5.0, 4.8

Time (1ms/div)

■TYPICAL PERFORMANCE CHARACTERISTICS (Continued)

(8) Load Transient Response

XC6201P132

V_{IN}=2.3V
C_{IN}=1.0 μ F, C_L=2.2 μ F(tantalum)

Output Voltage:V_{OUT}(V) / Output Current:I_{OUT}(mA)

Output Voltage

Output Current

Time (2ms/div)

XC6201P182

V_{IN}=2.8V
C_{IN}=1.0 μ F, C_L=2.2 μ F(tantalum)

Output Voltage:V_{OUT}(V) / Output Current:I_{OUT}(mA)

Output Voltage

Output Current

Time (2ms/div)

XC6201P272

V_{IN}=3.7V
C_{IN}=C_L=1.0 μ F(tantalum)

Output Voltage:V_{OUT}(V) / Output Current:I_{OUT}(mA)

Output Voltage

Output Current

Time (2ms/div)

XC6201P332

V_{IN}=4.3V
C_{IN}=C_L=1.0 μ F(tantalum)

Output Voltage:V_{OUT}(V) / Output Current:I_{OUT}(mA)

Output Voltage

Output Current

Time (2ms/div)

XC6201P502

V_{IN}=6.0V
C_{IN}=C_L=1.0 μ F(tantalum)

Output Voltage:V_{OUT}(V) / Output Current:I_{OUT}(mA)

Output Voltage

Output Current

Time (2ms/div)
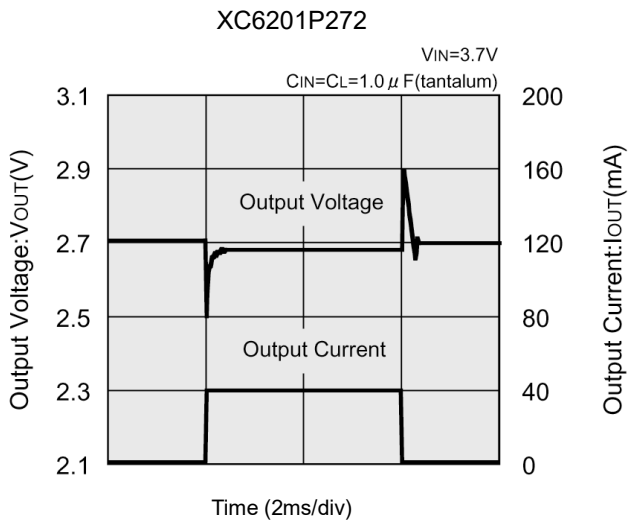
■TYPICAL PERFORMANCE CHARACTERISTICS (Continued)

(9) Ripple Rejection Rate

XC6201P132

VIN=2.3VDC+1.0Vp-pAC
IOUT=40mA, CL=2.2μF(tantalum)

XC6201P182

VIN=2.8VDC+1.0Vp-pAC
IOUT=40mA, CL=1.0μF(tantalum)

XC6201P272

VIN=3.7VDC+1.0Vp-pAC
IOUT=40mA, CL=1.0μF(tantalum)

XC6201P332

VIN=4.3VDC+1.0Vp-pAC
IOUT=40mA, CL=1.0μF(tantalum)

XC6201P502

VIN=6.0VDC+1.0Vp-pAC
IOUT=40mA, CL=1.0μF(tantalum)

(10) Output Noise Density

XC6201P302

VIN=4.0V
IOUT=40mA, CL=1.0μF(tantalum)

XC6201 Series
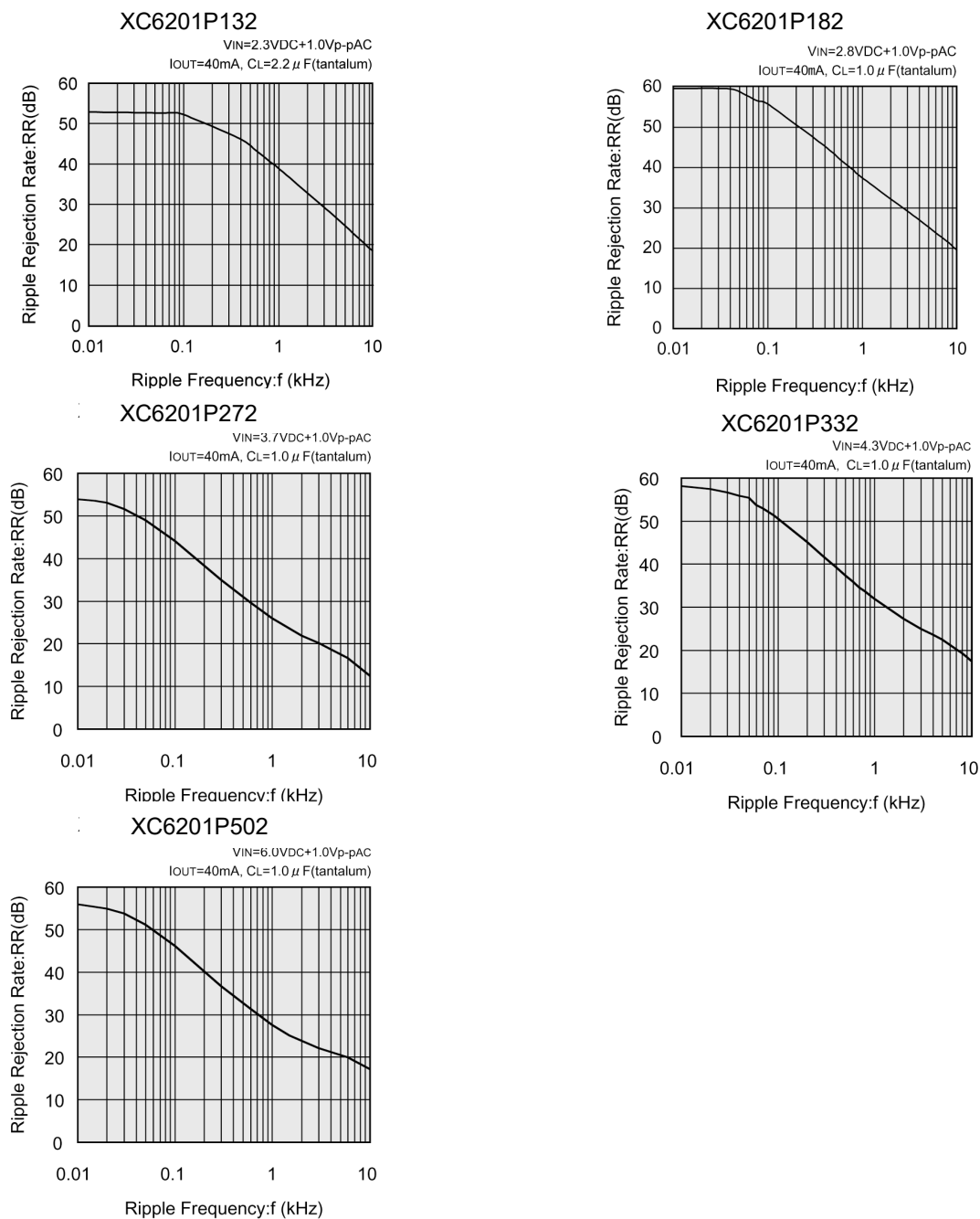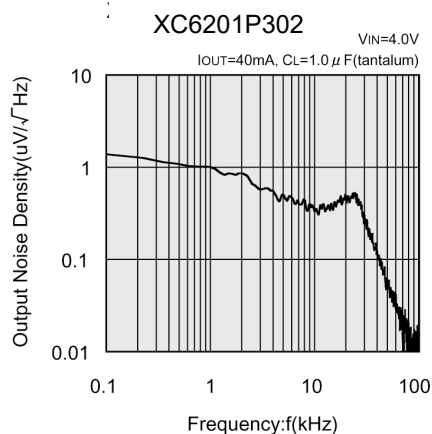
■PACKAGING INFORMATION

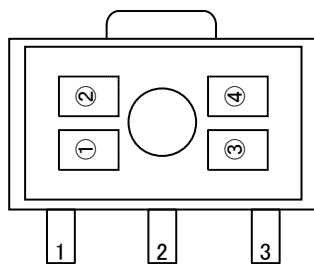For the latest package information go to, www.torexsemi.com/technical-support/packages

PACKAGE	OUTLINE / LAND PATTERN	THERMAL CHARACTERISTICS
SOT-25	SOT-25 PKG	SOT-25 Power Dissipation
SOT-89	SOT-89 PKG	SOT-89 Power Dissipation
USP-6B	USP-6B PKG	USP-6B Power Dissipation

■MARKING RULE
● SOT-89, SOT-25

SOT-89
(TOP VIEW)
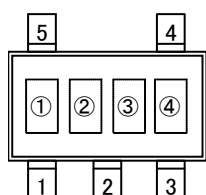
SOT-25
(TOP VIEW)

① represents the product series

MARK	PRODUCT SERIES
1	XC6201xxxxxx

② represents type of regulator

MARK		PRODUCT SERIES
Voltage= 0.1 ~ 3.0V	Voltage= 3.1 ~ 6.0V	
5	6	XC6201Pxxxxx
8	9	XC6201TxxxPx

③ represents output voltage

MARK	OUTPUT VOLTAGE (V)			MARK	OUTPUT VOLTAGE (V)		
0	–	3.1	–	F	1.6	4.6	–
1	–	3.2	–	H	1.7	4.7	–
2	–	3.3	–	K	1.8	4.8	–
3	–	3.4	–	L	1.9	4.9	–
4	–	3.5	–	M	2.0	5.0	–
5	–	3.6	–	N	2.1	5.1	–
6	–	3.7	–	P	2.2	5.2	–
7	–	3.8	–	R	2.3	5.3	–
8	–	3.9	–	S	2.4	5.4	–
9	–	4.0	–	T	2.5	5.5	–
A	–	4.1	–	U	2.6	5.6	–
B	–	4.2	–	V	2.7	5.7	–
C	1.3	4.3	–	X	2.8	5.8	–
D	1.4	4.4	–	Y	2.9	5.9	–
E	1.5	4.5	–	Z	3.0	6.0	–

④ represents assembly lot number
   0 to 9, A to Z repeated (G, I, J, O, Q, W excluded)

■ MARKING RULE (Continued)

● USP-6B
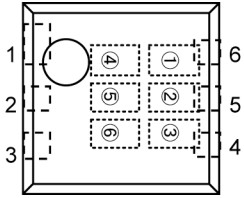
USP-6B
(TOP VIEW)

①② represents product series

③ represents type of regulator

MARK	TYPE	PRODUCT SERIES
P	3pin Regulator	XC6201PxxxDx
T	V_{IN}=7V(Rated)	XC6201TxxxDx

④⑤ represents output voltage

MARK		VOLTAGE (V)	PRODUCT SERIES
④	⑤		
3	3	3.3	XC6201x33xDx
5	0	5.0	XC6201x50xDx

⑥ represents assembly lot number
　0 to 9, A to Z repeated (G, I, J, O, Q, W excluded)
　Note: No character inversion used.

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