XC6217 Series

High Speed "Green Operation" LDO Voltage Regulators

◆Regulators with Green Operation (GO) Function
◆Output Voltage Range: 0.8V ~ 4.0V
◆Output Current: 200mA <Up to 250mA (TYP.)>
◆Low ESR Capacitor Compatible
◆High Ripple Rejection, Low Output Noise
◆CL High-Speed Auto-Discharge (XC6217B/D)
◆Ultra Small Package: USP-4D

■APPLICATIONS

●Cellular phones
●Cordless phones
●Wireless communication equipment
●Portable games
●Cameras, VCRs
●Portable AV equipment
●PDAs

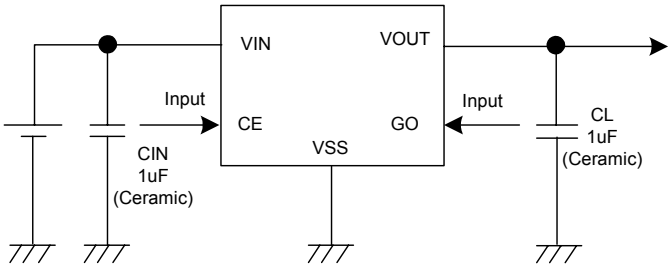
■GENERAL DESCRIPTION

The XC6217 series are precise, low noise, high speed, low dropout regulators with green operation (GO) function. They are fabricated using Torex's CMOS process. Performance features of the series include high ripple rejection and low dropout voltage, and the series include a reference voltage source, an error amplifier, a current limiter, and a phase compensation circuit.
GO provides high speed operation, low power consumption and high efficiencies by automatically switching between a high speed mode (HS) and a power save mode (PS) depending upon the load current level. The switching point of the GO to the output current is being fixed inside the IC. When only high-speed operation is required, it can be fixed by inputting a high level signal to the GO pin, thus providing operating conditions with the most suitable level of supply current for the application.
The CE function enables the output to be turned off resulting in greatly reduced power consumption. In this state, with the XC6217B/D series, the IC turns on the internal switch located between the V_{OUT} and V_{SS} pins. This short enables the electric charge at the output capacitor (C_L) to be discharged via the internal auto-discharge resistance, and as a result the V_{OUT} pin quickly returns to the V_{SS} level. The series' output stabilization capacitor (C_L) is also compatible with low ESR ceramic capacitors.
Output voltage is selectable in 50mV increments within a range of 0.8V~4.0V, using laser trimming technologies.
The current limiter's foldback circuit also operates as a short circuit protection for the output current limiter and the output pin.

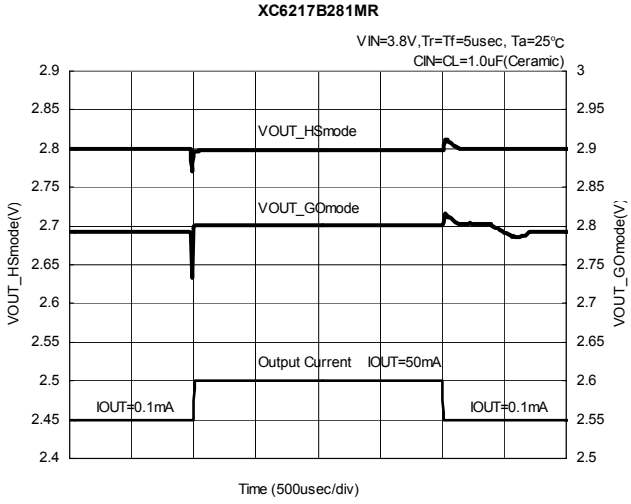
■FEATURES

Output Current	: 200mA <Up to 250mA (TYP.)>
Dropout Voltage	: 80mV@ I_{OUT}=100mA, $V_{OUT(T)}$=3.0V
Operating Voltage Range	: 1.6V ~ 6.0V (0.8V≦$V_{OUT(T)}$≦1.55V : 1.8V ~ 6.0V (1.6V≦$V_{OUT(T)}$≦4.0V
Output Voltage Setting Range	: 0.8V~4.0V (50mV increments)
Accuracy	: ±2% (HS: V_{OUT}≧2.0V) ±30mV (HS: V_{OUT}≦1.95V) +2.5%, -3.5% (PS: V_{OUT} ≧2.6V) +3.5%, -4.5% (PS:1.6≦V_{OUT}≦2.55V) +70mV, -90mV (PS:0.8≦V_{OUT}≦1.55V)
Low Power Consumption	: 4.5μA (TYP.) when PS mode 25μA (TYP.) when HS mode
Standby Current	: Less than 0.1μA
High Ripple Rejection	: 70dB @ 1kHz (When HS mode)
Operating Temperature Range	: -40℃~85℃
Low ESR Capacitor	: 1.0μF Ceramic capacitor compatible
Ultra Small Packages	: USP-4D, SOT-25,

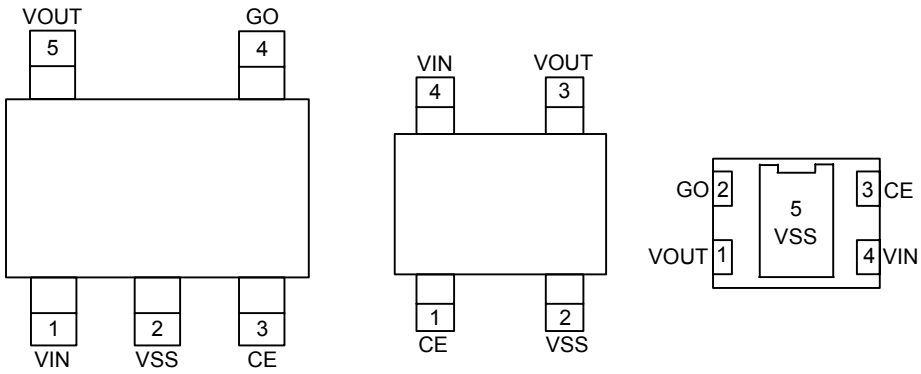
■TYPICAL APPLICATION CIRCUIT



■ TYPICAL PERFORMANCE CHARACTERISTICS



■PIN CONFIGURATION



SOT-25
(TOP VIEW)

SSOT-24
(TOP VIEW)

USP-4D
(BOTTOM VIEW)

■PIN ASSIGNMENT

PIN NUMBER			PIN NAME	FUNCTIONS
USP-4D	SOT-25	SSOT-24		
4	1	4	V_{IN}	Power Input
1	5	3	V_{OUT}	Output
2	4	-	GO	Green Operation Mode Switch
5	2	2	V_{SS}	Ground
3	3	1	CE	ON/OFF Control

* XC6217A/B type: USP-4D package
XC6217A/B type: SOT-25 package
XC6217C/D type: SSOT-24 package

■PRODUCT CLASSIFICATION

●Ordering Information

XC6217 ①②③④⑤⑥

DESIGNATOR	DESCRIPTION	SYMBOL	DESCRIPTION
①	Type of Regulator	A	: CE High Active, no CL discharge resistor
		B	: CE High Active, with CL discharge resistor
		C	: CE High Active, no CL discharge resistor, no GO pin (SSOT-24)
		D	: CE High Active, with CL discharge resistor, no GO pin (SSOT-24)
② ③	Output Voltage	08 ~ 40	: ex.) $V_{OUT}(T)$ = 3.0V → ② = 3, ③ = 0
④	Output Accuracy	2	: 100mV increments, When 0.8V≦$V_{OUT(T)}$≦1.50V in HS mode;; HS mode: $V_{OUT(T)}$±30mV PS mode: +70mV, -90mV ex.) 0.8V → ②=0, ③=8, ④=2
			: 100mV increments, When 1.6V≦$V_{OUT(T)}$≦1.9V in HS mode; HS mode: $V_{OUT(T)}$ ±30mV, PS mode: +3.5%, -4.5% ex.) 1.6V → ②=1, ③=6, ④=2
			: 100mV increments, When 2.0V≦$V_{OUT(T)}$≦2.5V; HS mode: ±2%, PS mode: +3.5%, -4.5% ex.) 2.0V → ②=2, ③=0, ④=2
			: 100mV increments, When $V_{OUT(T)}$≧2.6V; HS mode: ±2% PS mode: +2.5%, -3.5% ex.) 3.0V → ②=3, ③=0, ④=2
		A	: 50mV increments, When 0.85V≦V_{OUT}(T)≦1.55V; HS mode: $V_{OUT(T)}$±30mV PS mode: +70mV, -90mV ex.) 0.85V → ②=0, ③=8, ④=A
			: 50mV increments, When 1.65V≦$V_{OUT(T)}$≦1.95V; HS mode: $V_{OUT(T)}$±30mV, PS mode: +3.5%, -4.5% ex.) 1.65V → ②=1, ③=6, ④=A
			: 50mV increments, When 2.05V≦$V_{OUT(T)}$≦2.55V; HS mode: ±2%, PS mode: +3.5%, -4.5% ex.) 2.05V → ②=2, ③=0, ④=A
			: 50mV increments, When $V_{OUT(T)}$≧2.65V; HS mode: ±2% PS mode: +2.5%, -3.5% ex.) 3.05V → ②=3, ③=0, ④=A

■PRODUCT CLASSIFICATION (Continued)

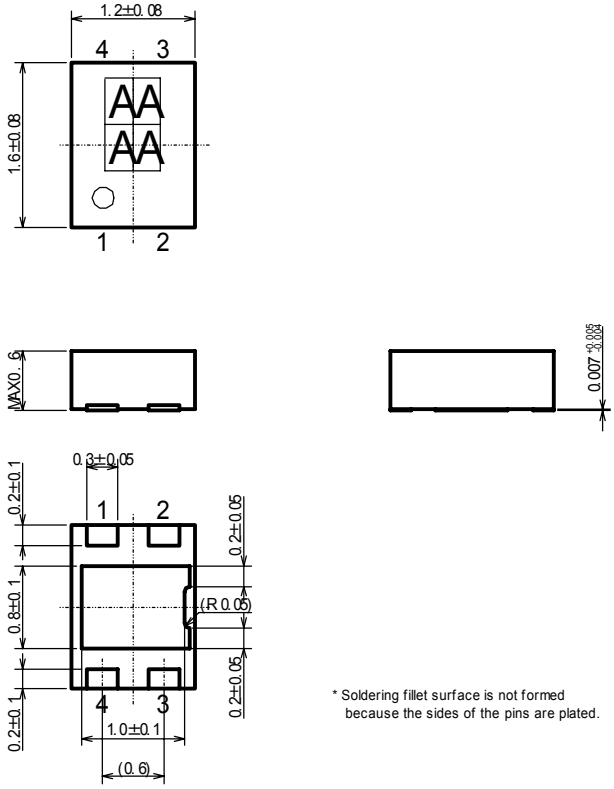
●Ordering Information (Continued)

XC6217 ①②③④⑤⑥

DESIGNATOR	DESCRIPTION	SYMBOL	DESCRIPTION
④	Output Accuracy	1	: 100mV increments, When 0.8V≦VOUT(T)≦1.50V in HS mode;; HS mode: VOUT(T)±20mV PS mode: +50mV, -70mV ex.) 0.8V → ②=0, ③=8, ④=1
			: 100mV increments, When 1.6V≦VOUT(T)≦1.9V in HS mode; HS mode: VOUT(T) ±20mV, PS mode: +2.5%, -3.5% ex.) 1.6V → ②=1, ③=6, ④=1
			: 100mV increments, When 2.0V≦VOUT(T)≦2.5V; HS mode: ±1%, PS mode: +2.5%, -3.5% ex.) 2.0V → ②=2, ③=0, ④=1
			: 100mV increments, When VOUT(T)≧2.6V; HS mode: ±1% PS mode: +1.5%, -2.5% ex.) 3.0V → ②=3, ③=0, ④=1
		B	: 50mV increments, When 0.85V≦VOUT(T)≦1.55V; HS mode: VOUT(T)±20mV PS mode: +50mV, -70mV ex.) 0.85V → ②=0, ③=8, ④=B
			: 50mV increments, When 1.65V≦VOUT(T)≦1.95V; HS mode: VOUT(T)±20mV, PS mode: +2.5%, -3.5% ex.) 1.65V → ②=1, ③=6, ④=B
			: 50mV increments, When 2.05V≦VOUT(T)≦2.55V; HS mode: ±1%, PS mode: +2.5%, -3.5% ex.) 2.05V → ②=2, ③=0, ④=B
			: 50mV increments, When VOUT(T)≧2.65V; HS mode: ±1% PS mode: +1.5%, -2.5% ex.) 3.05V → ②=3, ③=0, ④=B
⑤	Package	G	: USP-4D (XC6217A/B type)
		M	: SOT-25 (XC6217A/B type)
		N	: SSOT-24 (XC6217C/D type)
⑥	Device Orientation	R	: Embossed tape, standard feed
		L	: Embossed tape, reverse feed

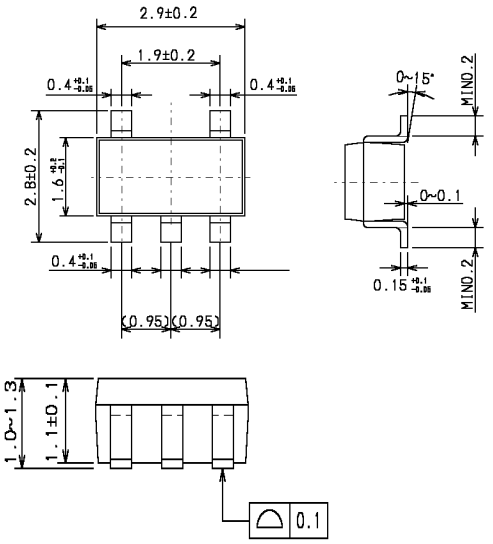
■PACKAGING INFORMATION

●USP-4D

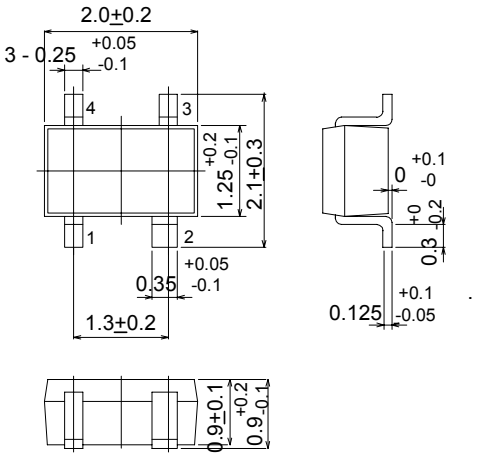


* Soldering fillet surface is not formed because the sides of the pins are plated.

●SOT-25 (SOT-23-5)

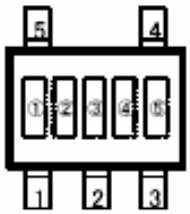


●SSOT-24



■MARKING RULE

●SOT-25



SOT-25
(TOP VIEW)

①Represents product series

MARK	PRODUCT SERIES
1	XC6217xxxxxx

②Represents type of regulators

MARK				PRODUCT SERIES
OUTPUT VOLTAGE 100mV INCREMENTS		OUTPUT VOLTAGE 50mV INCREMENTS		
0.8V~3.0V	3.1V~4.0V	0.85V~3.05V	3.15V~3.95V	
V	A	E	L	XC6217Axxxxx
X	B	F	M	XC6217Bxxxxx

③Represents output voltage

MARK	OUTPUT VOLTAGE (V)				MARK	OUTPUT VOLTAGE (V)			
0	-	3.1	-	3.15	F	1.6	-	1.65	-
1	-	3.2	-	3.25	H	1.7	-	1.75	-
2	-	3.3	-	3.35	K	1.8	-	1.85	-
3	-	3.4	-	3.45	L	1.9	-	1.95	-
4	-	3.5	-	3.55	M	2.0	-	2.05	-
5	-	3.6	-	3.65	N	2.1	-	2.15	-
6	-	3.7	-	3.75	P	2.2	-	2.25	-
7	0.8	3.8	0.85	3.85	R	2.3	-	2.35	-
8	0.9	3.9	0.95	3.95	S	2.4	-	2.45	-
9	1.0	4.0	1.05	-	T	2.5	-	2.55	-
A	1.1	-	1.15	-	U	2.6	-	2.65	-
B	1.2	-	1.25	-	V	2.7	-	2.75	-
C	1.3	-	1.35	-	X	2.8	-	2.85	-
D	1.4	-	1.45	-	Y	2.9	-	2.95	-
E	1.5	-	1.55	-	Z	3.0	-	3.05	-

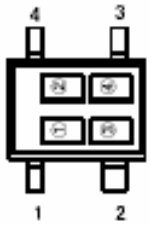
④⑤Represents production lot number

01 to 09, 10 to 99, 0A~ 0Z, 1A in order. (G, I, J, O, Q, W excepted)

Note: No character inversion used.

■MARKING RULE

●SSOT-24



SSOT-4
(TOP VIEW)

①Represents type of regulators and output voltage range

MARK				PRODUCT SERIES
OUTPUT VOLTAGE 100mV INCREMENTS		OUTPUT VOLTAGE 50mV INCREMENTS		
0.8V~3.0V	3.1V~4.0V	0.85V~3.05V	3.15V~3.95V	
1	5	2	6	XC6217Cxxxxx
3	7	4	8	XC6217Dxxxxx

②Represents decimal point of output voltage

MARK	OUTPUT VOLTAGE (V)				MARK	OUTPUT VOLTAGE (V)			
0	-	3.1	-	3.15	F	1.6	-	1.65	-
1	-	3.2	-	3.25	H	1.7	-	1.75	-
2	-	3.3	-	3.35	K	1.8	-	1.85	-
3	-	3.4	-	3.45	L	1.9	-	1.95	-
4	-	3.5	-	3.55	M	2.0	-	2.05	-
5	-	3.6	-	3.65	N	2.1	-	2.15	-
6	-	3.7	-	3.75	P	2.2	-	2.25	-
7	0.8	3.8	0.85	3.85	R	2.3	-	2.35	-
8	0.9	3.9	0.95	3.95	S	2.4	-	2.45	-
9	1.0	4.0	1.05	-	T	2.5	-	2.55	-
A	1.1	-	1.15	-	U	2.6	-	2.65	-
B	1.2	-	1.25	-	V	2.7	-	2.75	-
C	1.3	-	1.35	-	X	2.8	-	2.85	-
D	1.4	-	1.45	-	Y	2.9	-	2.95	-
E	1.5	-	1.55	-	Z	3.0	-	3.05	-

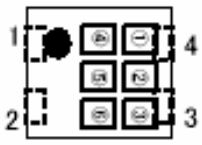
③④Represents production lot number

01 to 09, 10 to 99, 0A~ 0Z, 1A in order. (G, I, J, O, Q, W excepted)

Note: No character inversion used.

■MARKING RULE

●USP-4D



USP-4D
(TOP VIEW)

①Represents product series

MARK	PRODUCT SERIES
1	XC6217xxxxxx

②Represents type of regulators

MARK	TYPE OF REGULATORS	PRODUCT SERIES
A	CE High Active, without CL-Discharge	XC6217Axxxxx
B	CE High Active, with CL-Discharge	XC6217Bxxxxx

③Represents integer number of output voltage

ex.)

MARK	VOLTAGE (V)	PRODUCT SERIES
3	3.x	XC6217x3xxGx
5	5.x	XC6217x5xxGx

④Represents decimal point of output voltage

MARK	VOLTAGE(V)	PRODUCT SEIRES	MARK	VOLTAGE (V)	PRODUCT SEIRES
0	x.0	XC6217xx02/1Gx	A	x.05	XC6217xx0A/1Gx
1	x.1	XC6217xx12/1Gx	B	x.15	XC6217xx1A/1Gx
2	x.2	XC6217xx22/1Gx	C	x.25	XC6217xx2A/1Gx
3	x.3	XC6217xx32/1Gx	D	x.35	XC6217xx3A/1Gx
4	x.4	XC6217xx42/1Gx	E	x.45	XC6217xx4A/1Gx
5	x.5	XC6217xx52/1Gx	F	x.55	XC6217xx5A/1Gx
6	x.6	XC6217xx62/1Gx	H	x.65	XC6217xx6A/1Gx
7	x.7	XC6217xx72/1Gx	K	x.75	XC6217xx7A/1Gx
8	x.8	XC6217xx82/1Gx	L	x.85	XC6217xx8A/1Gx
9	x.9	XC6217xx92/1Gx	M	x.95	XC6217xx9A/1Gx

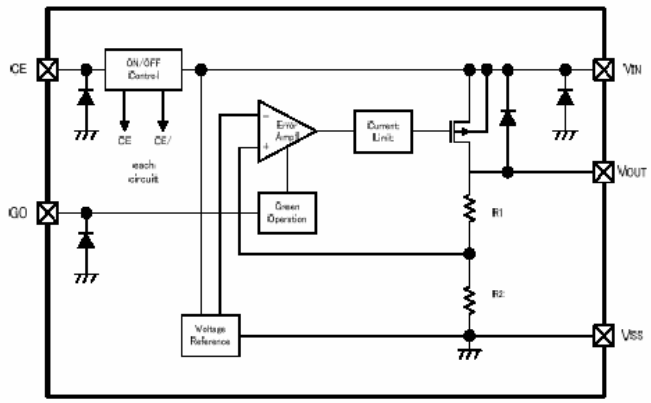
⑤⑥Represents production lot number

01 to 09, 10 to 99, 0A~ 0Z, 1A in order. (G, I, J, O, Q, W excepted)

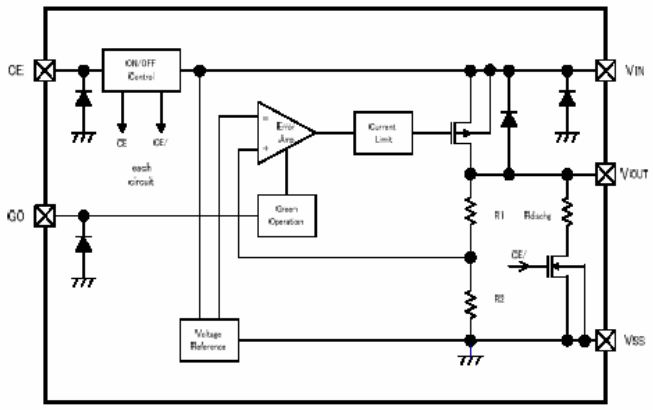
Note: No character inversion used.

■BLOCK DIAGRAMS

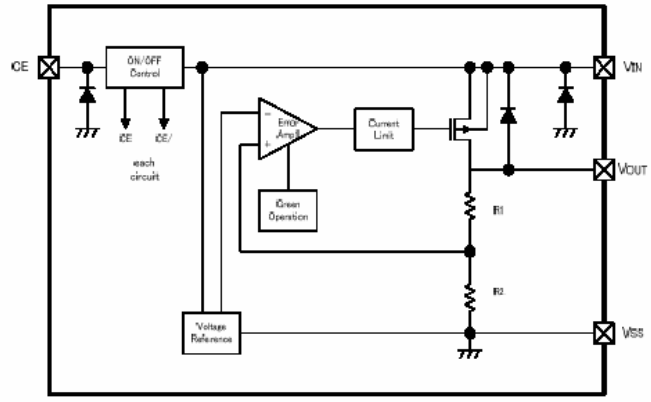
●XC6217A Series



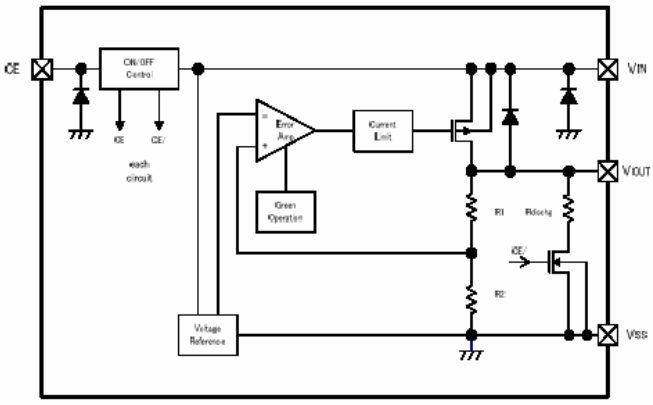
●XC6217B Series



●XC6217C Series



●XC6217D Series



*Diodes inside the circuit are an ESD protection diode and a parasitic diode.

■ABSOLUTE MAXIMUM RATINGS

Ta=25℃

PARAMETER		SYMBOL	RATINGS	UNITS
Input Voltage		VIN	VSS -0.3 ~ +6.5	V
Output Current		IOUT	400 *1	mA
Output Voltage		VOUT	VSS – 0.3 ~ VIN + 0.3	V
CE/GO Input Voltage		VCE/VGO	VSS – 0.3 ~ +6.5	V
Power Dissipation	USP-4D	Pd	120	mW
	SOT-25		250	
	SSOT-24		150	
Operational Temperature Range		Topr	- 40 ~ + 85	℃
Storage Temperature Range		Tstg	- 55 ~ +125	℃

*1: IOUT=Less than Pd / (VIN-VOUT)

■ELECTRICAL CHARACTERISTICS

●XC6217A/B series

Ta=25℃

PARAMETER	SYMBOL	CONDITIONS	MIN.	TYP.	MAX.	UNITS	CIRCUIT
Output Voltage	$V_{OUT(E)}$ (* 2)	High Speed Mode (HS), $V_{OUT(T)} \geq 2.0V$, $V_{GO}=V_{IN}$, $V_{CE}=V_{IN}$, $I_{OUT}=10mA$	x 0.98 (*3)	$V_{OUT(T)}$ (*4)	x 1.02 (*3)	V	1
		High speed mode (HS), $V_{OUT} \leqq 1.95V$, $V_{GO}=V_{IN}$, $V_{CE}=V_{IN}$, $I_{OUT}=10mA$	-0.03 (*3)		+0.03 (*3)		
		Power Save Mode (PS), $V_{OUT(T)} \geq 2.6V$, $V_{GO}=V_{IN}$, $V_{CE}=V_{IN}$, $I_{OUT}=0.1mA$	x0.965 (*3)		x1.025 (*3)		
		Power Save Mode (PS), $1.6V \leqq V_{OUT(T)} \leqq 2.55V$, $V_{GO}=V_{SS}$, $V_{CE}=V_{IN}$, $I_{OUT}=0.1mA$	x 0.955 (*3)		x 1.035 (*3)		
		Power save mode (PS), $0.8V \leqq V_{OUT(T)} \leqq 1.55V$, $V_{GO}=V_{SS}$, $V_{CE}=V_{IN}$, $I_{OUT}=0.1mA$	-0.09 (*3)		+0.07 (*3)		
Output Current	I_{OUTMAX}	$V_{GO}=V_{IN}$ (HS), $V_{CE}=V_{IN}$, $V_{IN}=V_{OUT(T)}+1.0V$, $0.8V \leqq V_{OUT(T)} \leqq 4.0V$	200	250	-	mA	1
Load Regulation	$\triangle V_{OUT}$	$V_{GO}=V_{IN}$ (HS), $V_{CE}=V_{IN}$, $0.1mA \leqq I_{OUT} \leqq 100mA$	-	10	40	mV	1
Dropout Voltage (*5)	Vdif	$V_{GO}=V_{IN}$ (HS), $V_{CE}=V_{IN}$, $I_{OUT}=100mA$	E-4			mV	1
Supply Current 1	I_{SS1}	$V_{IN}=V_{OUT(T)}+1.0V$, $V_{GO}=V_{IN}$ (HS), $I_{OUT}=0mA$	-	25	50	μA	2
Supply Current 2	I_{SS2}	$V_{IN}=V_{OUT(T)}+1.0V$ $V_{GO}=V_{IN}$ (PS), $I_{OUT}=0mA$	-	4.5	8.0	μA	2
Standby Current	I_{STBY}	$V_{IN}=6.0V$, $V_{CE}=V_{SS}$	-	0.01	0.10	μA	2
Line Regulation	$\frac{\triangle V_{OUT}}{\triangle V_{IN} \cdot V_{OUT}}$	$V_{OUT(T)}+0.5V \leqq V_{IN} \leqq 6.0V$: $V_{OUT(T)} \geqq 1.1V$ $V_{GO}=V_{IN}$ (HS), $V_{CE}=V_{IN}$, $I_{OUT}=10mA$	-	0.01	0.20	%/V	1
		$1.6V \leqq V_{IN} \leqq 6.0V$: $V_{OUT(T)} \leqq 1.05V$ $V_{GO}=V_{IN}$ (HS), $V_{CE}=V_{IN}$, $I_{OUT}=10mA$					
Input Voltage	V_{IN}	$0.8V \leqq V_{OUT(T)} \leqq 1.55V$	1.6	-	6.0	V	1
		$1.6V \leqq V_{OUT(T)} \leqq 4.0V$	1.8	-	6.0		
Output Voltage Temperature Characteristics	$\frac{\triangle V_{OUT}}{\triangle Ta \cdot V_{OUT}}$	$V_{GO}=V_{IN}$ (HS), $V_{CE}=V_{IN}$, $I_{OUT}=30mA$, $-40℃ \leq Ta \leq 85℃$	-	±100	-	ppm/℃	1
Ripple Rejection Rate	PSRR	$V_{IN}=\{V_{OUT(T)}+1.0\}V_{DC}+0.5Vp\text{-}pAC$: $0.85V \leqq V_{OUT(T)} \leqq 4.0V$ $V_{GO}=V_{IN}$ (HS), $V_{CE}=V_{IN}$ $I_{OUT}=30mA$, $f=1kHz$	-	70	-	dB	3
		$V_{IN}=1.85V_{DC}+0.5Vp\text{-}pAC$, $V_{OUT(T)} \leqq 0.8V$, $V_{GO}=V_{IN}$ (HS), $V_{CE}=V_{IN}$, $I_{OUT}=30mA$, $f=1kHz$					
Limit Current	I_{lim}	$V_{GO}=V_{IN}$ (HS), $V_{CE}=V_{IN}$	200	250	-	mA	1
Short Current	I_{short}	$V_{GO}=V_{IN}$ (HS), $V_{CE}=V_{IN}$ V_{OUT} is short-circuited at the V_{SS} level.	-	30	-	mA	1

■ELECTRICAL CHARACTERISTICS (Continued)

●XC6217A/B series (Continued)

Ta=25℃

PARAMETER	SYMBOL	CONDITIONS	MIN.	TYP.	MAX.	UNITS	CIRCUIT
PS Switching Current	I_{GOR}	V_{CE}=V_{IN}, V_{GO}=V_{SS} (GO mode), I_{OUT}: heavy to light load	0.5	-	-	mA	4
HS Switching Current	I_{GO}	V_{CE}=V_{IN}, V_{GO}=V_{SS} (GO mode), I_{OUT}: light to heavy load	-	-	8.0	mA	4
Switch Current Hysteresis Range	I_{GOhys}	I_{GOhys}=I_{GO}- I_{GOR}	-	3.5	-	mA	4
PS Switching Delay Time	T_{DPS}	V_{IN}=CE=$V_{OUT(T)}$+1.0V, V_{GO}=V_{SS} (GO mode), Time until HS mode is changed-over to PS mode by I_{GOR}	E-5			μsec	4
CE High Level Voltage	V_{CEH}		1.2	-	6.0	V	4
GO High Level Voltage	V_{GOH}	V_{CE}=V_{IN}, I_{SS} Search, I_{OUT}=0mA	1.2	-	6.0	V	4
CE Low Level Voltage	V_{CEL}		-	-	0.3	V	4
GO Low Level Voltage	V_{GOL}	V_{CE}=V_{IN}, I_{SS} Search, I_{OUT}=0mA	-	-	0.3	V	4
CE High Level Current	I_{CEH}	V_{GO}=V_{IN}, V_{CE}=V_{IN}	-0.1	-	0.1	μA	4
GO High Level Current	I_{GOH}	V_{GO}=V_{IN}, V_{CE}=V_{IN}	-0.1	-	0.1	μA	4
CE Low Level Current	I_{CEL}	V_{CE}=V_{SS}, V_{GO}=V_{SS}	-0.1	-	0.1	μA	4
GO Low Level Current	I_{GOL}	V_{CE}=V_{SS}, V_{GO}=V_{SS}	-0.1	-	0.1	μA	4
CL Auto-Discharge Resistance (* 8)	R_{dischg}	V_{IN}=6.0V, $V_{OUT(T)}$=4.0V, V_{CE}=V_{GO}=V_{SS}	-	780	-	Ω	1

NOTE:

* 1: Unless otherwise stated regarding input voltage conditions, V_{IN}=V_{OUT}(T)＋1.0V.
* 2: V_{OUT} (E) = Effective output voltage (Refer to the voltage chart E-0 to E-3)
  (I.e. the output voltage when HS mode and an amply stabilized "V_{OUT} (T)＋1.0V" is provided at the V_{IN} pin while maintaining a certain I_{OUT} value.)
* 3: The rated value of the setting output voltage $V_{OUT(E)}$ is shown in voltage chart E-0 to E-3)
  For the 1% accuracy products, please contact Torex sales person.
* 4: V_{OUT} (T) = Specified output voltage
* 5: Vdif={V_{IN}1(*7)-V_{OUT}1(*6)}
* 6: V_{OUT}1=A voltage equal to 98% of the output voltage whenever an amply stabilized I_{OUT} {V_{OUT}(T)+1.0V} is input in the HS mode.
* 7: V_{IN}1=The input voltage when V_{OUT}1 appears as input voltage is gradually decreased.
* 8: For the XC6217B series only. The XC6217A series discharges by resistors R1 and R2 only as shown in the block diagrams.

■ELECTRICAL CHARACTERISTICS (Continued)

●XC6217C/D series

Ta=25℃

PARAMETER	SYMBOL	CONDITIONS	MIN.	TYP.	MAX.	UNITS	CIRCUIT
Output Voltage	$V_{OUT(E)}$ (* 2)	High Speed Mode (HS), $V_{OUT(T)}$≧2.0V, V_{CE}= V_{IN}, I_{OUT}=10mA	x 0.98 (*3)	$V_{OUT(T)}$ (*4)	x 1.02 (*3)	V	1
		High Speed Mode(HS), $V_{OUT(T)}$≦1.95V, V_{CE}=V_{IN}, I_{OUT}=10mA	-0.03 (*3)		+0.03 (*3)		
		Power Save Mode (PS), $V_{OUT(T)}$≧2.6V, V_{CE}= V_{IN}, I_{OUT}=0.1mA	x0.965 (*3)		x1.025 (*3)		
		Power Save Mode (PS), 1.6V≦$V_{OUT(T)}$≦2.55V, V_{CE}=V_{IN}, I_{OUT}=0.1mA	x 0.955 (*3)		x 1.035 (*3)		
		Power Save Mode(PS), 0.8V≦$V_{OUT(T)}$≦1.55V V_{CE}=V_{IN}, I_{OUT}=0.1mA	-0.09 (*3)		+0.07 (*3)		
Output Current	I_{OUTMAX}	V_{CE}=V_{IN}, V_{IN}=$V_{OUT(T)}$+1.0V, 0.8V≦$V_{OUT(T)}$≦4.0V	200	250-	-	mA	1
Load Regulation	△V_{OUT}	V_{CE}=V_{IN}, 8mA≦I_{OUT}≦100mA	-	10	40	mV	1
Dropout Voltage (*5)	Vdif	V_{CE}=V_{IN}, I_{OUT}=100mA	E-4			mV	1
Supply Current 1	I_{SS1}	V_{IN}=$V_{OUT(T)}$+1.0V, I_{OUT}=8mA	-	25	50	μA	2
Supply Current 2	I_{SS2}	V_{IN}=$V_{OUT(T)}$+1.0V, I_{OUT}=0mA	-	4.5	8.0	μA	2
Standby Current	I_{STBY}	V_{IN}=6.0V, V_{CE}=V_{SS}	-	0.01	0.10	μA	2
Line Regulation	$\frac{\triangle V_{OUT}}{\triangle V_{IN} \cdot V_{OUT}}$	$V_{OUT(T)}$+0.5V≦V_{IN}≦6.0V : $V_{OUT(T)}$≧1.1V V_{CE}=V_{IN}, I_{OUT}=10mA	-	0.01	0.20	%/V	1
		1.6V≦V_{IN}≦6.0V : $V_{OUT(T)}$≦1.05V V_{CE}=V_{IN}, I_{OUT}=10mA					
Input Voltage	V_{IN}	0.8V≦$V_{OUT(T)}$≦1.55V	1.6	-	6.0	V	1
		1.6V≦$V_{OUT(T)}$≦4.0V	1.8	-	6.0		
Output Voltage Temperature Characteristics	$\frac{\triangle V_{OUT}}{\triangle Ta \cdot V_{OUT}}$	V_{CE}=V_{IN}, I_{OUT}=30mA, -40℃≦Ta≦85℃	-	±100	-	ppm/℃	1
Ripple Rejection Rate	PSRR	V_{IN}={$V_{OUT(T)}$+1.0}V_{DC}+0.5Vp-pAC : 0.85V≦$V_{OUT(T)}$≦4.0V V_{CE}=V_{IN}, I_{OUT}=30mA, f=1kHz	-	70	-	dB	3
		V_{IN}=1.85V_{DC}+0.5Vp-pAC : $V_{OUT(T)}$≦0.8V V_{CE}=V_{IN}, I_{OUT}=30mA, f=1kHz					
Limit Current	I_{lim}	V_{CE}=V_{IN}	200	250	-	mA	1
Short Current	I_{short}	V_{CE}=V_{IN} V_{OUT} is short-circuited at the V_{SS} level.	-	30	-	mA	1

■ELECTRICAL CHARACTERISTICS (Continued)

●XC6217C/D series (Continued)

Ta=25℃

PARAMETER	SYMBOL	CONDITIONS	MIN.	TYP.	MAX.	UNITS	CIRCUIT
PS Switching Current	I_{GOR}	V_{CE}=V_{IN}, I_{OUT}: heavy to light load	0.5	-	-	mA	4
HS Switching Current	I_{GO}	V_{CE}=V_{IN}, I_{OUT}: light to heavy load	-	-	8.0	mA	4
Switch Current Hysteresis Range	I_{GOhys}	I_{GOhys}=I_{GO}- I_{GOR}	-	3.5	-	mA	4
PS Switching Delay Time	T_{DPS}	V_{IN}=CE=$V_{OUT(T)}$+1.0V, Time until HS mode is changed-over to PS mode by I_{GOR}		E-5		μsec	4
CE High Level Voltage	V_{CEH}		1.2	-	6.0	V	4
CE Low Level Voltage	V_{CEL}		-	-	0.3	V	4
CE High Level Current	I_{CEH}	V_{CE}=V_{SS}	-0.1	-	0.1	μA	4
CE Low Level Current	I_{CEL}	V_{CE}=V_{SS}	-0.1	-	0.1	μA	4
CL Auto-Discharge Resistance (* 8)	R_{dischg}	V_{IN}=6.0V, $V_{OUT(T)}$=4.0V, V_{CE}=V_{SS}	-	780	-	Ω	1

NOTE:

* 1: Unless otherwise stated regarding input voltage conditions, V_{IN}=V_{OUT}(T)＋1.0V.
* 2: V_{OUT} (E) = Effective output voltage (Refer to the voltage chart E-0 to E-3 chart)
  (I.e. the output voltage when HS mode and an amply stabilized "V_{OUT} (T)＋1.0V" is provided at the V_{IN} pin while maintaining a certain I_{OUT} value.)
* 3: The rated value of the setting output voltage $V_{OUT(E)}$ is shown in the voltage chart E-0 to E-3.
  For the 1% accuracy products, please contact Torex sales person.
* 4: V_{OUT} (T) = Specified output voltage
* 5: Vdif={V_{IN}1(*7)-V_{OUT}1(*6)}
* 6: V_{OUT}1=A voltage equal to 98% of the output voltage whenever an amply stabilized I_{OUT} {V_{OUT}(T)+1.0V} is input in the HS mode.
* 7: V_{IN}1=The input voltage when V_{OUT}1 appears as input voltage is gradually decreased.
* 8: For the XC6217D series only. The XC6217C series discharges by resistors R1 and R2 only as shown in the block diagrams.

■OUTPUT VOLTAGE CHART

SYMBOL	E-0		E-1		E-2		E-3	
SETTING OUTPUT VOLTAGE (V)	OUTPUT VOLTAGE (HS MODE) Standard ±2% (V)		OUTPUT VOLTAGE (PS MODE) Standard (V)		OUTPUT VOLTAGE (HS MODE) High Accuracy ±1% (V)		OUTPUT VOLTAGE (PS MODE) High Accuracy (V)	
$V_{OUT(T)}$	$V_{OUT(E)}$		$V_{OUT(E)}$		$V_{OUT(E)}$		$V_{OUT(E)}$	
	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.
0.80	0.7700	0.8300	0.7100	0.8700	0.7800	0.8200	0.7300	0.8500
0.85	0.8200	0.8800	0.7600	0.9200	0.8300	0.8700	0.7800	0.9000
0.90	0.8700	0.9300	0.8100	0.9700	0.8800	0.9200	0.8300	0.9500
0.95	0.9200	0.9800	0.8600	1.0200	0.9300	0.9700	0.8800	1.0000
1.00	0.9700	1.0300	0.9100	1.0700	0.9800	1.0200	0.9300	1.0500
1.05	1.0200	1.0800	0.9600	1.1200	1.0300	1.0700	0.9800	1.1000
1.10	1.0700	1.1300	1.0100	1.1700	1.0800	1.1200	1.0300	1.1500
1.15	1.1200	1.1800	1.0600	1.2200	1.1300	1.1700	1.0800	1.2000
1.20	1.1700	1.2300	1.1100	1.2700	1.1800	1.2200	1.1300	1.2500
1.25	1.2200	1.2800	1.1600	1.3200	1.2300	1.2700	1.1800	1.3000
1.30	1.2700	1.3300	1.2100	1.3700	1.2800	1.3200	1.2300	1.3500
1.35	1.3200	1.3800	1.2600	1.4200	1.3300	1.3700	1.2800	1.4000
1.40	1.3700	1.4300	1.3100	1.4700	1.3800	1.4200	1.3300	1.4500
1.45	1.4200	1.4800	1.3600	1.5200	1.4300	1.4700	1.3800	1.5000
1.50	1.4700	1.5300	1.4100	1.5700	1.4800	1.5200	1.4300	1.5500
1.55	1.5200	1.5800	1.460	1.6200	1.5300	1.5700	1.4800	1.6000
1.60	1.5700	1.6300	1.5280	1.6560	1.5800	1.6200	1.5440	1.6400
1.65	1.6200	1.6800	1.5758	1.7078	1.6300	1.6700	1.5923	1.6913
1.70	1.6700	1.7300	1.6235	1.7595	1.6800	1.7200	1.6405	1.7425
1.75	1.7200	1.7800	1.6713	1.8113	1.7300	1.770	1.6888	1.7938
1.80	1.7700	1.8300	1.7190	1.8630	1.7800	1.8200	1.7370	1.8450
1.85	1.8200	1.8800	1.7668	1.9148	1.8300	1.8700	1.7853	1.8963
1.90	1.8700	1.9300	1.8145	1.9665	1.8800	1.9200	1.8335	1.9475
1.95	1.9200	1.9800	1.8623	2.0183	1.9300	1.9700	1.8818	1.9998
2.00	1.9600	2.0400	1.9100	2.0700	1.9800	2.0200	1.9300	2.0500
2.05	2.0090	2.0910	1.9578	2.1218	2.0295	2.0705	1.9783	2.1013
2.10	2.0850	2.1420	2.0055	2.1735	2.0790	2.1210	2.0265	2.1525
2.15	2.1070	2.1930	2.0533	2.2253	2.1285	2.1715	2.0748	2.2038
2.20	2.1560	2.2440	2.1010	2.2770	2.1780	2.2220	2.1230	2.2550
2.25	2.2050	2.2950	2.1488	2.3288	2.2275	2.2725	2.1713	2.3063
2.30	2.2540	2.3460	2.1965	2.3805	2.2770	2.3230	2.2195	2.3575
2.35	2.3030	2.3970	2.2443	2.4323	2.3265	2.3735	2.2678	2.4088
2.40	2.3520	2.4480	2.2920	2.4840	2.3760	2.4240	2.3160	2.4600
2.45	2.4010	2.4990	2.3398	2.5358	2.4255	2.4745	2.3646	2.5113
2.50	2.4500	2.5500	2.3875	2.5875	2.4750	2.5250	2.4125	2.5625
2.55	2.4990	2.6010	2.4353	2.6393	2.5245	2.5755	2.4608	2.6138
2.60	2.5480	2.6520	2.5090	2.6650	2.5740	2.6260	2.5350	2.6390
2.65	2.5970	2.7030	2.5573	2.7163	2.6235	2.6765	2.5838	2.6898
2.70	2.6460	2.7540	2.6055	2.7675	2.6730	2.7270	2.6325	2.7405
2.75	2.6950	2.8050	2.6538	2.8188	2.7225	2.7775	2.6813	2.7913
2.80	2.7440	2.8560	2.7020	2.8700	2.7720	2.8280	2.7300	2.8420
2.85	2.7930	2.9070	2.7503	2.9213	2.8215	2.8785	2.7788	2.8928
2.90	2.8420	2.9580	2.7985	2.9725	2.8710	2.9290	2.8275	2.9435
2.95	2.8910	3.0090	2.8468	3.0238	2.9205	2.9795	2.8763	2.9943

■OUTPUT VOLTAGE CHART (Continued)

SYMBOL	E-0		E-1		E-2		E-3	
SETTING OUTPUT VOLTAGE (V)	OUTPUT VOLTAGE (HS MODE) Standard ±2% (V)		OUTPUT VOLTAGE (PS MODE) Standard (V)		OUTPUT VOLTAGE (HS MODE) High Accuracy ±1% (V)		OUTPUT VOLTAGE (PS MODE) High Accuracy (V)	
$V_{OUT(T)}$	$V_{OUT(E)}$		$V_{OUT(E)}$		$V_{OUT(E)}$		$V_{OUT(E)}$	
	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.
3.00	2.9400	3.0600	2.8950	3.0750	2.9700	3.0300	2.9250	3.0450
3.05	2.8990	3.1100	2.9433	3.1263	3.0195	3.0805	2.9738	3.0958
3.10	3.0380	3.1620	2.9915	3.1775	3.0690	3.1310	3.0225	3.1465
3.15	3.0870	3.2130	3.0398	3.2288	3.1185	3.1815	3.0713	3.1973
3.20	3.1360	3.2640	3.0880	3.2800	3.1680	3.2320	3.1200	3.2480
3.25	3.1850	3.3150	3.1363	3.3313	3.2175	3.2825	3.1688	3.2988
3.30	3.2340	3.3660	3.1845	3.3825	3.2670	3.3330	3.2175	3.3495
3.35	3.2830	3.4170	3.2328	3.4338	3.3165	3.3835	3.2663	3.4003
3.40	3.3320	3.4680	3.2810	3.4850	3.3660	3.4340	3.3150	3.4510
3.45	3.3810	3.5190	3.3293	3.5363	3.4155	3.4845	3.3638	3.5018
3.50	3.4300	3.570	3.3775	3.5875	3.4650	3.5350	3.4125	3.5525
3.55	3.4790	3.6210	3.4258	3.6388	3.5145	3.5855	3.4613	3.6033
3.60	3.5280	3.6720	3.4740	3.6900	3.5640	3.6360	3.5100	3.6540
3.65	3.5770	3.7230	3.5223	3.7413	3.6135	3.6855	3.5588	3.7048
3.70	3.6260	3.7740	3.5705	3.7925	3.6630	3.7370	3.6075	3.7555
3.75	3.6750	3.8250	3.6188	3.8438	3.7125	3.7875	3.6563	3.8063
3.80	3.7240	3.8760	3.6670	3.8950	3.7620	3.8380	3.7050	3.8570
3.85	3.7730	3.9270	3.7153	3.9463	3.8115	3.8885	3.7538	3.9078
3.90	3.8220	3.9780	3.7635	3.9975	3.8610	3.9390	3.8025	3.9585
3.95	3.8710	4.0290	3.8118	4.0488	3.9105	3.9895	3.8513	4.0093
4.00	3.9200	4.0800	3.8600	4.1000	3.9600	4.0400	3.9000	4.0600

■DROPOUT VOLTAGE CHART

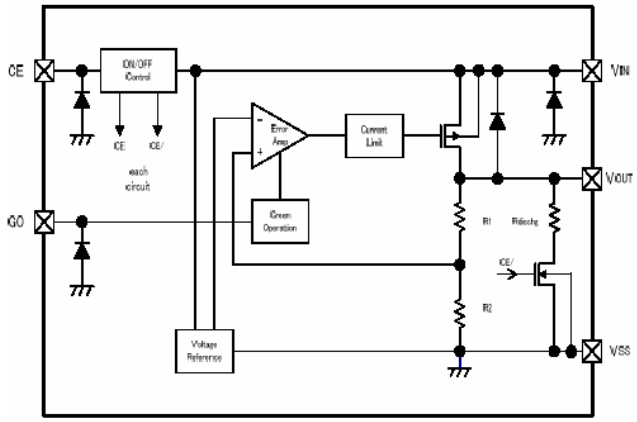
SYMBOL	E-4		E-5
SETTING OUTPUT VOLTAGE (V)	DROPOUT VOLTAGE Vdif (mV)		PS SWITCHING DELAY TIME (GO MODE) (usc)
VOUT(T)	Vdif		TDPS
	TYP.	MAX.	MAX
0.80	500	850	850
0.85			
0.90	410	720	
0.95			
1.00	330	650	
1.05			
1.10			
1.15			
1.20	230	410	
1.30			
1.35			
1.40	200	360	
1.45			
1.50	160	290	
1.55			
1.60	160	250	850
1.65			
1.70			
1.75			
1.80	125	210	
1.85			
1.90			
1.95			
2.00	115	195	
2.05			
2.10			
2.15			
2.20			
2.25			
2.30			
2.35			
2.40			
2.45			
2.50	95	170	
2.55			
2.60			1200
2.65			
2.70			
2.75			
2.80			
2.85			
2.90			
2.95			

SYMBOL	E-4		E-5
SETTING OUTPUT VOLTAGE (V)	DROPOUT VOLTAGE Vdif (mV)		PS SWITCHING DELAY TIME (GO MODE) (usc)
VOUT(T)	Vdif		TDPS
	TYP.	MAX.	MAX
3.00	80	140	1200
3.05			
3.10			
3.15			
3.20			
3.25			
3.30			
3.35			
3.40			
3.45			
3.50			
3.55			
3.60			
3.65			
3.70			
3.75			
3.80			
3.85			
3.90			
3.95			
4.00			

■OPERATIONAL EXPLANATION

<Output Voltage Control>

The voltage divided by resistors R1 & R2 is compared with the internal reference voltage by the error amplifier. The P-channel MOSFET, which is connected to the VOUT pin, is then driven by the subsequent output signal. The output voltage at the VOUT pin is controlled & stabilized by a system of negative feedback. The current limit circuit and short protect circuit operate in relation to the level of output current. The GO function monitors the output current and switches a supply current to two values according to the level of output current. Further, the IC's internal circuitry can be shutdown via the CE pin's signal.



<Green Operation>

XC6217A and B series can be set as a fixed high-speed mode or a green operation (GO) mode via a signal to the green operation (GO) pin. Under the condition that the GO pin becomes low level, the IC operates in the GO mode and the IC operates in the fixed high-speed mode when the GO pin is at high level. The GO mode enables the IC to switch automatically the supply current to the high speed (HS) mode or the power save (PS) mode according to the level of output current. While having both high-speed operation and low supply current state, the series can acquire high efficiency. At the HS/PS automatic switching mode (GO mode), the switching point of the HS mode and the PS mode is being fixed inside the IC. When the output current becomes IGOR 0.5mA (MIN.) or below, the mode changes automatically to the PS mode after the delay time of hundreds μsec(s), and it can reduce supply current in light load. Also when the output current becomes IGO 8mA (MAX.) or more, the mode changes automatically to the HS mode and the IC becomes high speed operation.

<Low ESR capacitor>

With the XC6217 series, a stable output voltage is achievable even if used with low ESR capacitors, as a phase compensation circuit is built-in. Values required for the phase compensation are as the chart below. In order to ensure the stable phase compensation while avoiding run-out of values, please use the capacitor which does not depend on bias or temperature too much. For a stable power input, please connect an input capacitor (CIN) of 1.0 μF between the VIN pin and the VSS pin.

SETTING OUTPUT VOLTAGE (V)	OUTPUT CAPACITOR VALUE
0.8 ~ 1.15	More than CL=4.7uF
1.2 ~ 1.35	More than CL=2.2uF
1.4 ~ 4.0	More than CL=1.0uF

<CL Auto-Discharge Function>

XC6217B/D series can quickly discharge the electric charge at the output capacitor (CL), when a low signal to the CE pin, which enables a whole IC circuit put into OFF state, is inputted via the N-channel transistor located between the VOUT pin and the VSS pin (cf. BLOCK DIAGRAM). The CL auto-discharge resistance value is fixed to 780Ω (VIN=6.0V, VOUT=4.0V at typical). The discharge time of the output capacitor (CL) is set by the CL auto-discharge resistance (R) and the output capacitor (CL). By setting time constant of a CL auto-discharge resistance value [Rdischg] and an output capacitor value (CL) as τ (τ =C x Rdischg), the output voltage after discharge via the N channel transistor is calculated by the following formulas.

$V = V_{OUT(E)} \times e^{-t/\tau}$, or $t = \tau \, In (V / V_{OUT(E)})$

(V : Output voltage after discharge, VOUT(E) : Output voltage, t: Discharge time,
τ : CL auto-discharge resistance Rdischg × Output capacitor (CL) value C)

■OPERATIONAL EXPLANATION (Continued)

<Current Limiter, Short-Circuit Protection>

The XC6217 series' foldback circuit operates as an output current limiter and a short protection of the output pin. When the load current reaches the current limit level, the fixed current limiter circuit operates and output voltage drops. As a result of this drop in output voltage, the foldback circuit operates, output voltage drops further and output current decreases. When the output pin is shorted to the V_{SS} level, a current of about 30mA flows.

<CE Pin>

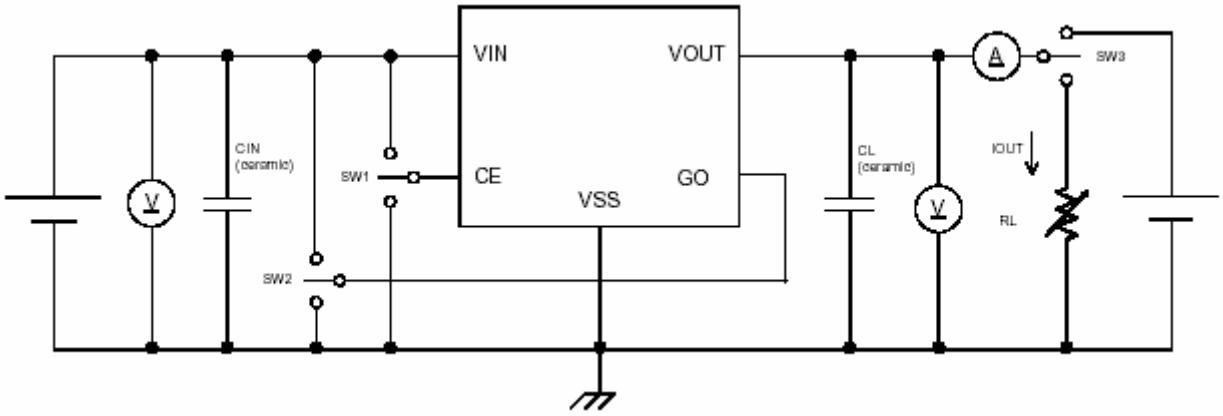
The IC's internal circuitry can be shutdown via the signal from the CE pin with the XC6217 series. In shutdown mode, output at the V_{OUT} pin will be pulled down to the V_{SS} level via R1 & R2. However, as for the XC6217B/D series, the C_L auto-discharge resistor is connected in parallel to R1 and R2 while the power supply is applied to the V_{IN} pin. Therefore, time until the V_{OUT} pin reaches the V_{SS} level becomes short. The output voltage becomes unstable, when the CE pin is open. If this IC is used with the correct output voltage for the CE pin, the 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 when medium voltage is input.

■NOTES ON USE

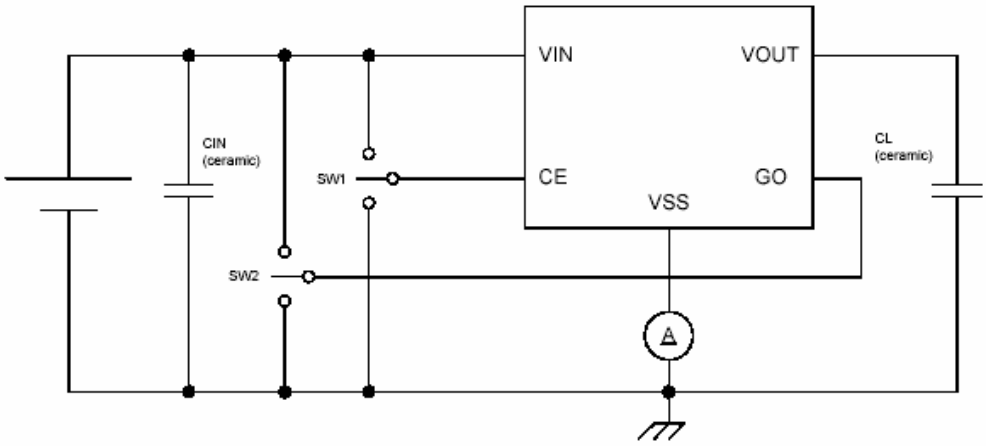
1. Please use this IC within the stated absolute maximum ratings. The IC is liable to malfunction should the ratings be exceeded.
2. Where wiring impedance is high, operations may become unstable due to noise and/or phase lag depending on output current. Please strengthen V_{IN} and V_{SS} wiring in particular.
3. Please wire the input capacitor (C_{IN}) and the output capacitor (C_L) as close to the IC as possible.

■TEST CIRCUITS

Circuit 1: Output Voltage, Output Current, Dropout Voltage, Input/Operating Voltage, Line Regulation, Load Regulation, Current Limit, Short Current, CL Discharge Resistance

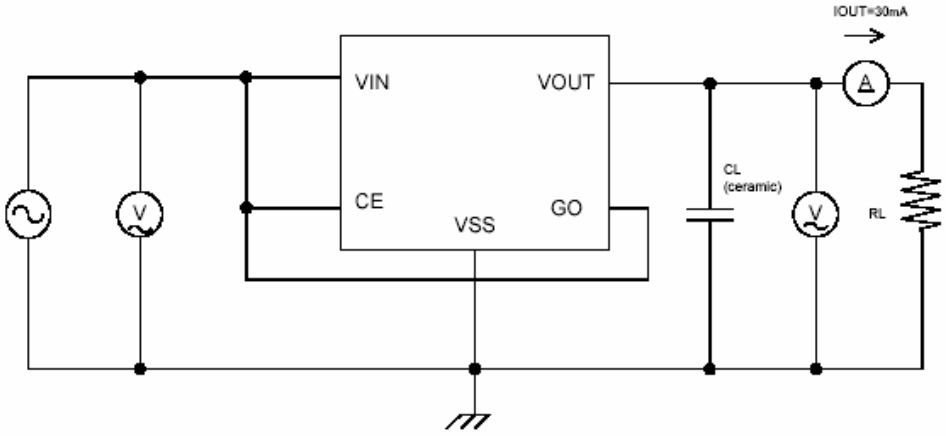


Circuit 2: Supply Current, Standby Current



*No GO pin with the XC6217C/D types.

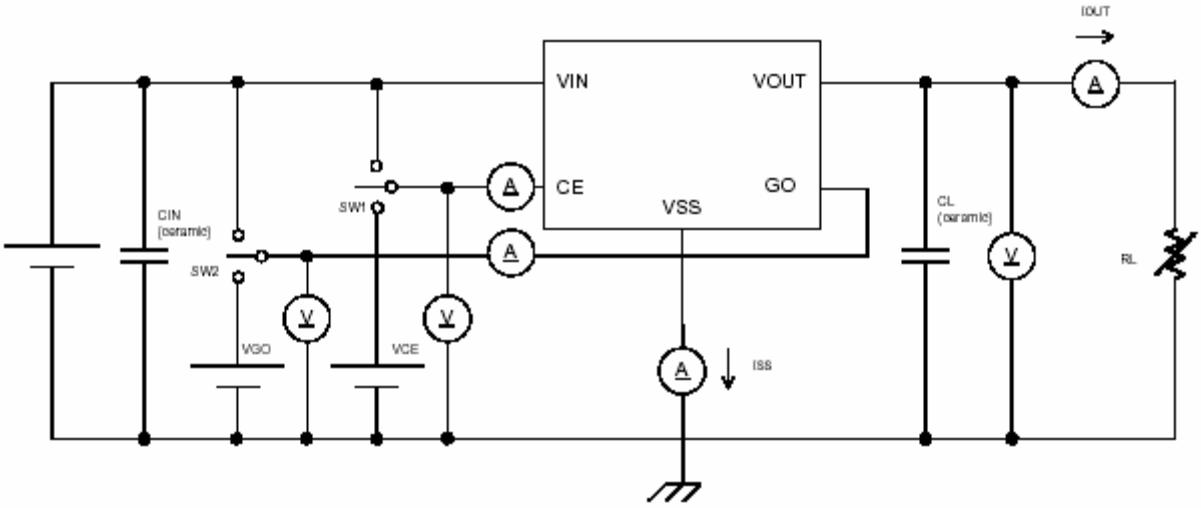
Circuit 3: Ripple Rejection Rate



*No GO pin with the XC6217C/D types.

■TEST CIRCUITS (Continued)

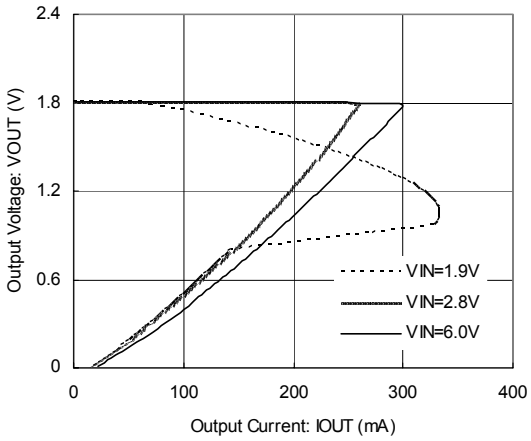
Circuit 4: HS/PS Switching Current, PS Switching Delay Time, CE/GO “H” “L” Level Voltage, CE/GO “H” “L” Level Current



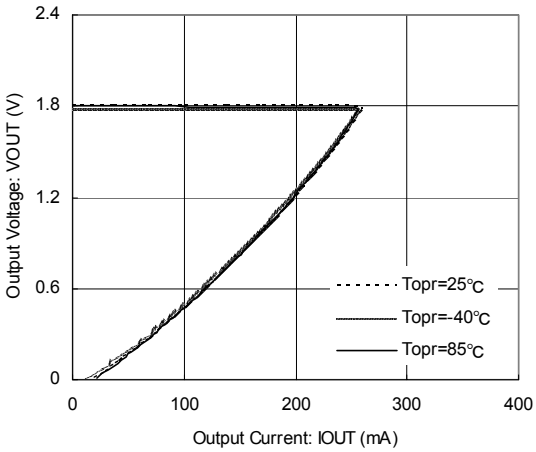
■TYPICAL PERFORMANCE CHARACTERISTICS

(1) Output Voltage vs. Output Current

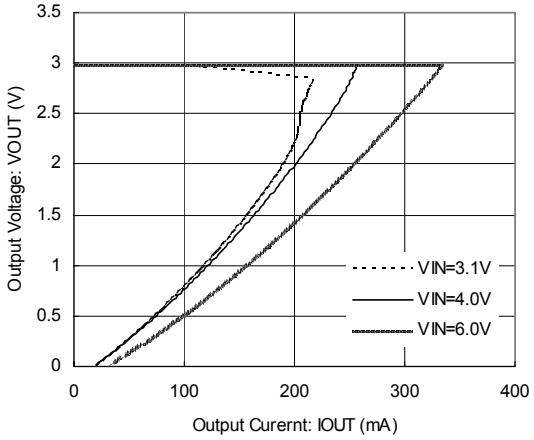
XC6217x182 High Speed Mode



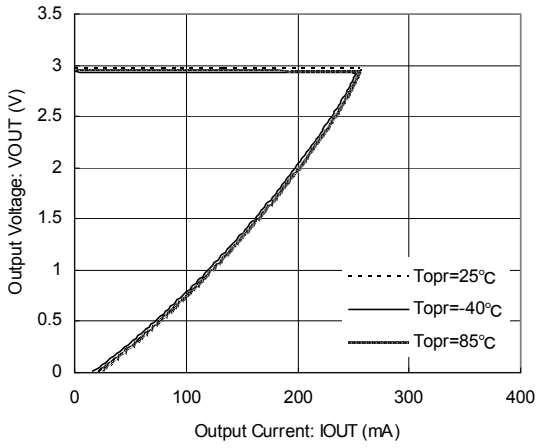
XC6217x182 High Speed Mode



XC6217x302 High Speed Mode



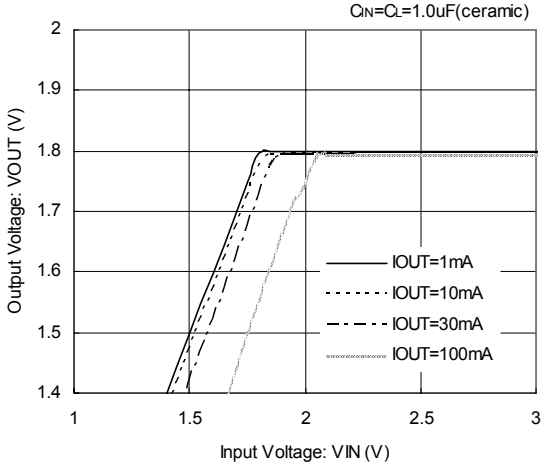
XC6217x302 High Speed Mode



(2) Output Voltage vs. Input Voltage

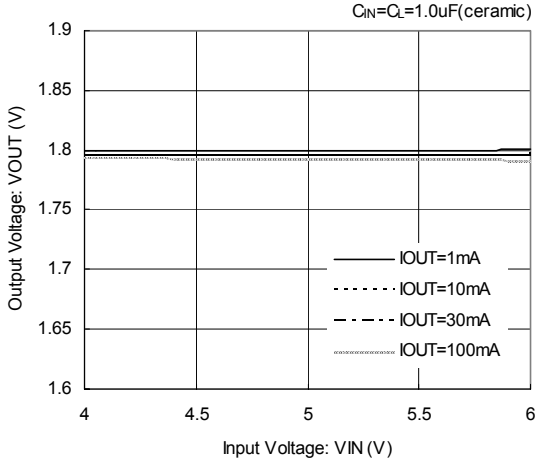
XC6217x182 High Speed Mode

CE=V_{IN}, GO=V_{IN}(A/B Type), Topr=25°C
C_{IN}=C_L=1.0uF(ceramic)



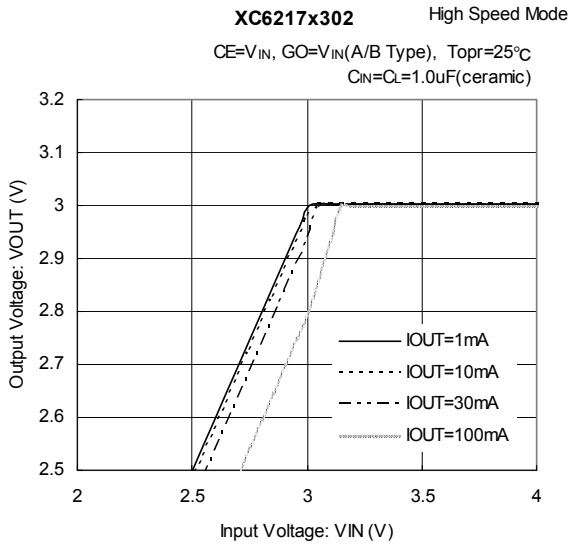
XC6217x182 High Speed Mode

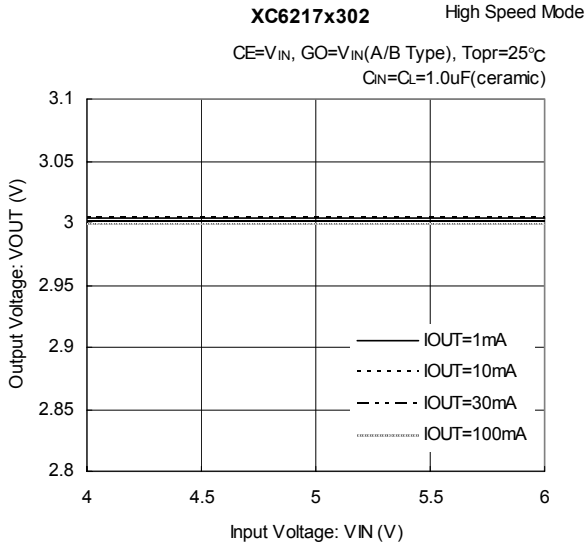
CE=V_{IN}, GO=V_{IN}(A/B Type), Topr=25°C
C_{IN}=C_L=1.0uF(ceramic)



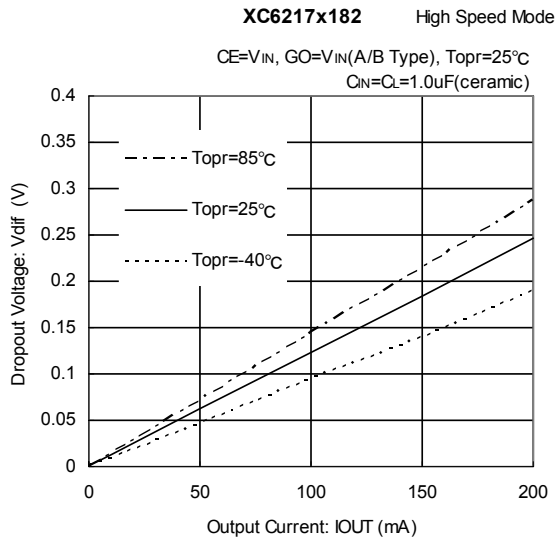
■TYPICAL PERFORMANCE CHARACTERISTICS (Continued)

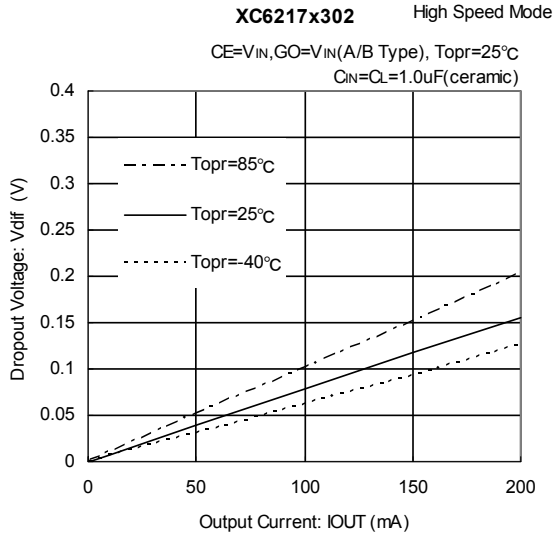
(2) Output Voltage vs. Input Voltage (Continued)



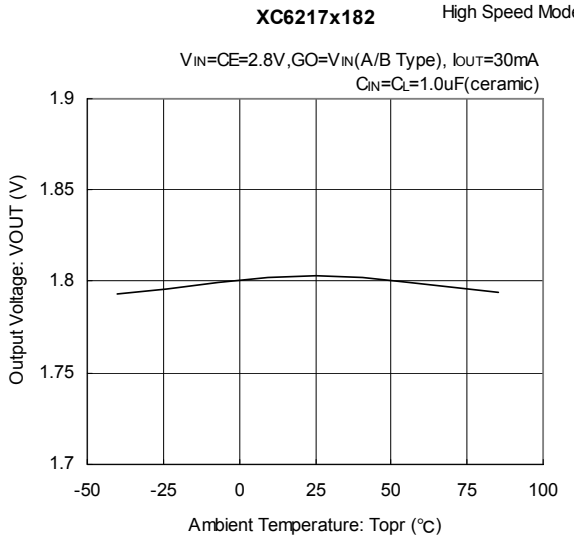


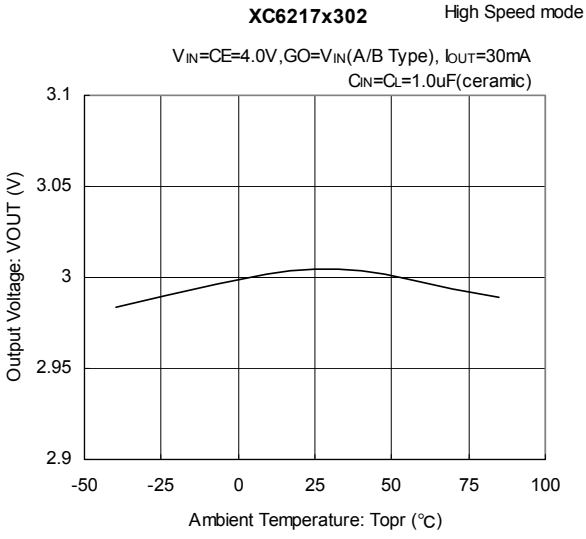
(3) Dropout Voltage vs. Output Current





(4) Output Voltage vs. Ambient Temperature

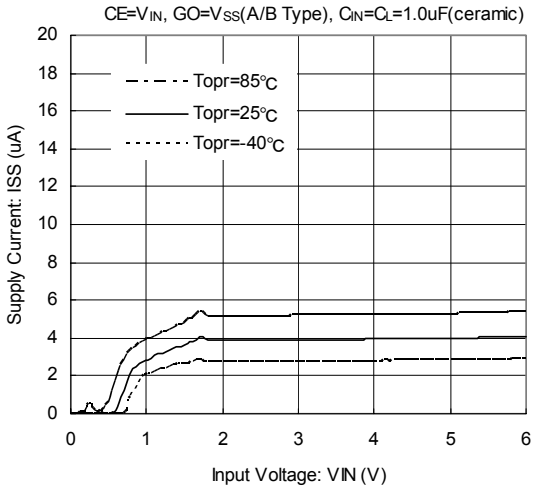




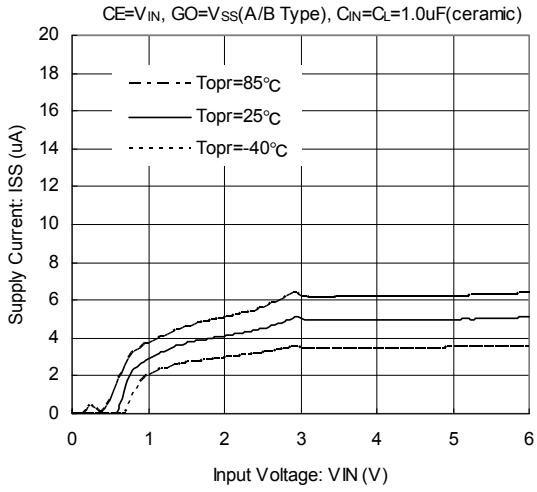
■TYPICAL PERFORMANCE CHARACTERISTICS (Continued)

(5) Supply Current vs. Input Voltage

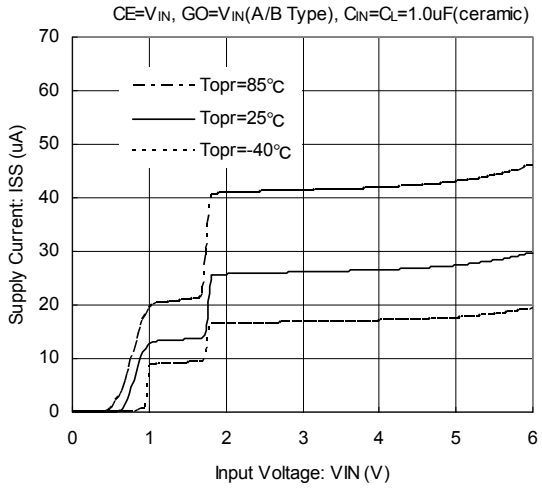
XC6217x182 Power Save Mode



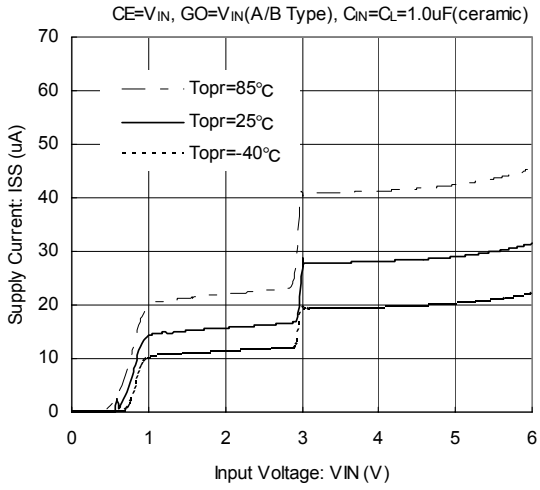
XC6217x302 Power Save Mode



XC6217x182 High Speed Mode

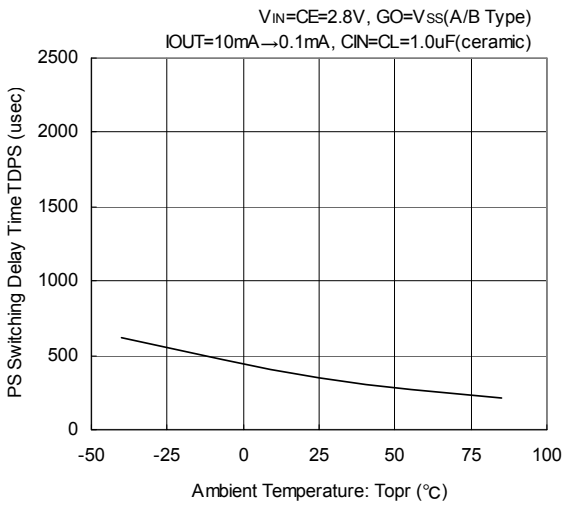


XC6217x302 High Speed Mode

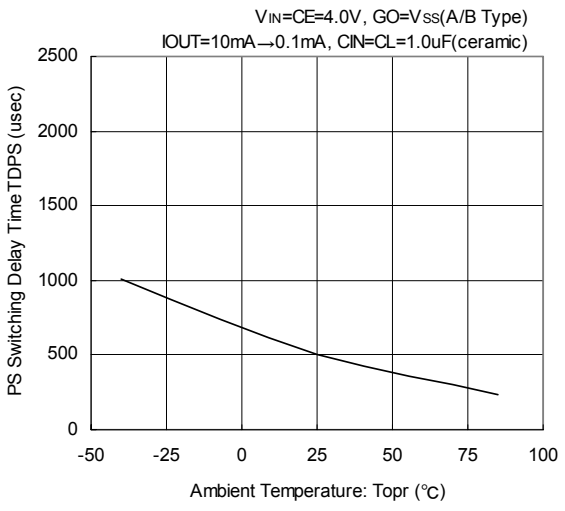


(6) PS Switching Delay Time vs. Ambient Temperature

XC6217x182 GO Mode

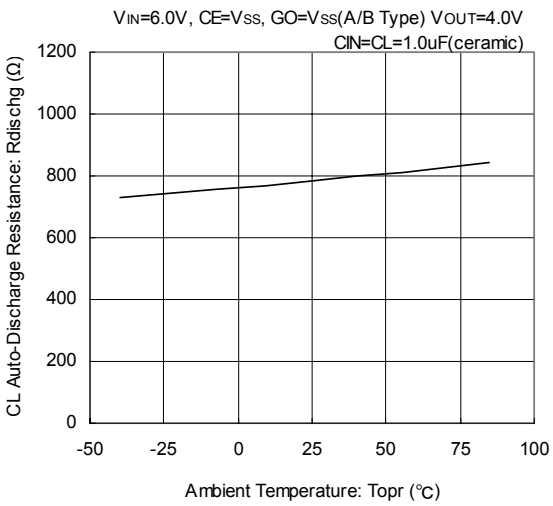


XC6217x302 GO Mode

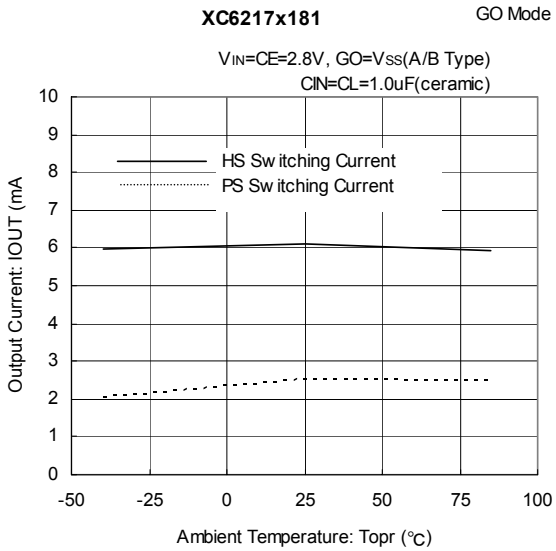


■TYPICAL PERFORMANCE CHARACTERISTICS (Continued)

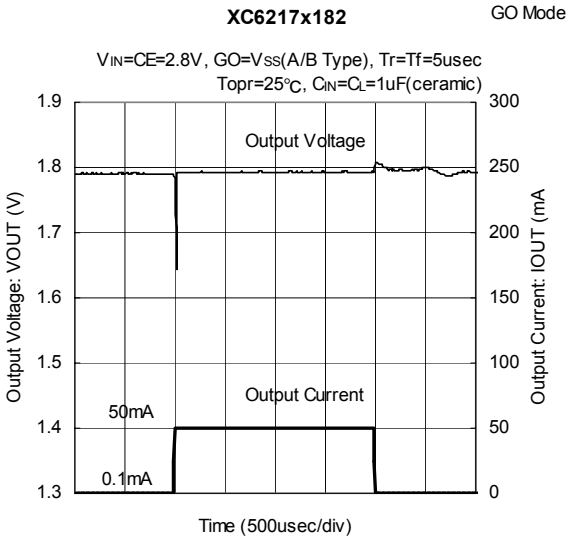
(7) CL Auto-Discharge Resistance vs. Ambient Temperature

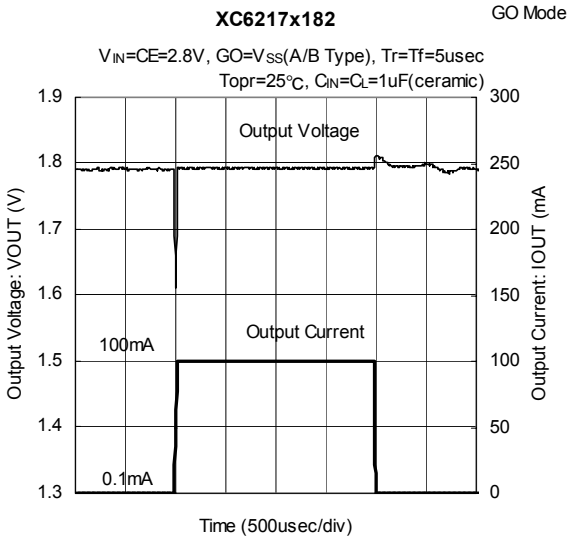


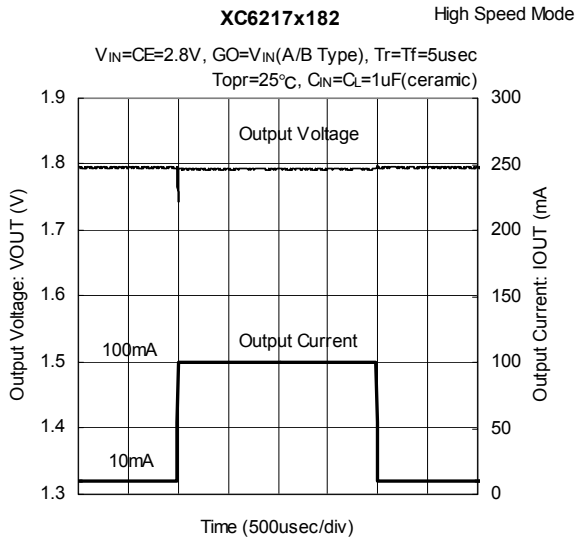
(8) PS/HS Switching Current vs. Ambient Temperature

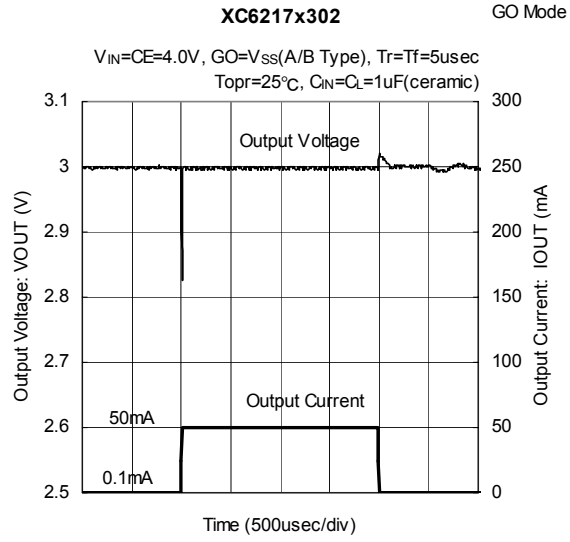


(9) Load Transient Response





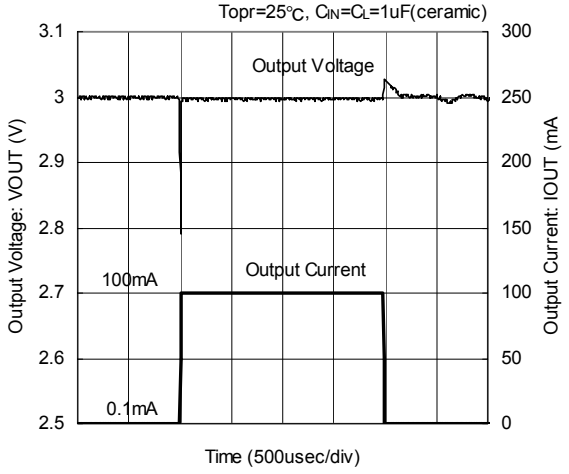




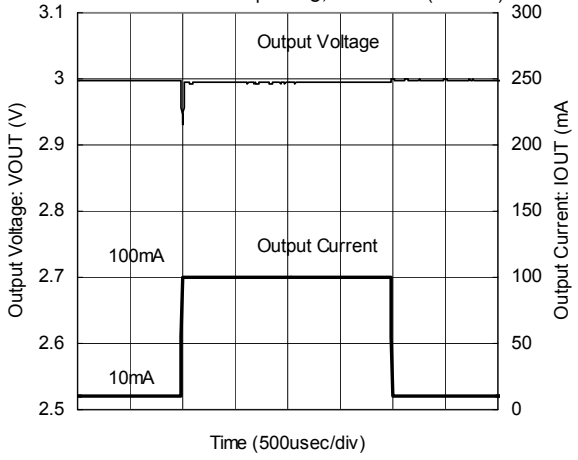
■TYPICAL PERFORMANCE CHARACTERISTICS (Continued)

(9) Load Transient Response

XC6217x302 GO Mode

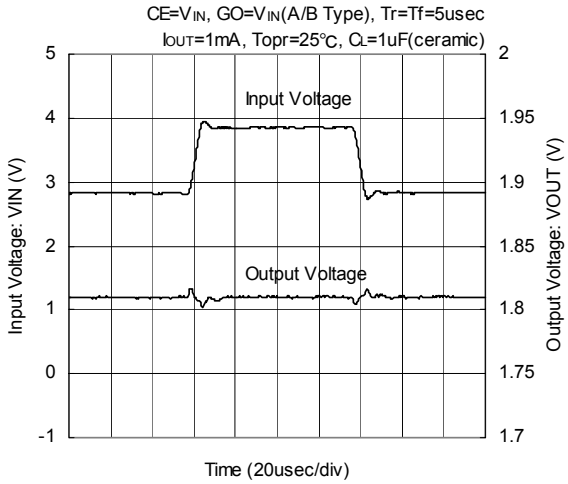


XC6217x302 High Speed Mode

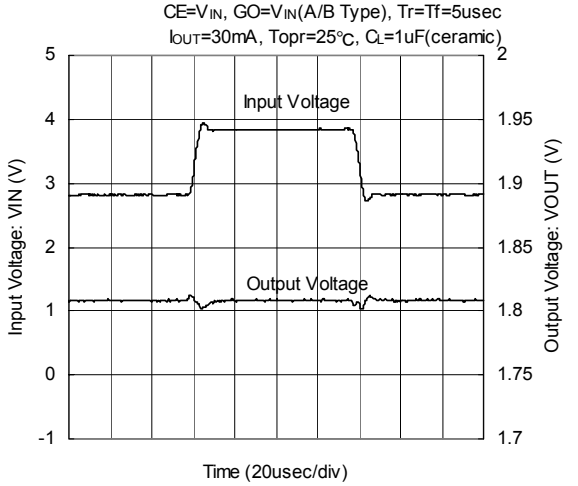


(10) Line Transient Response

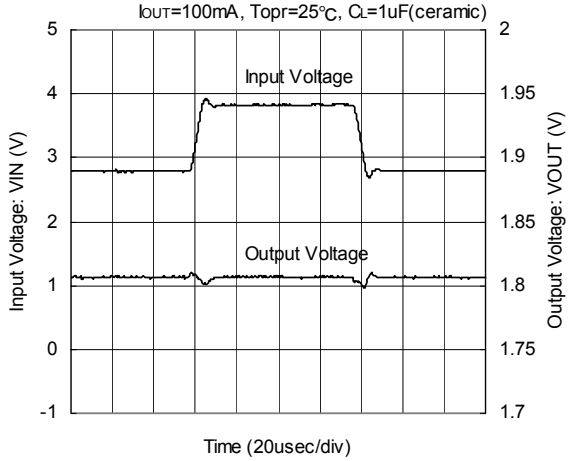
XC6217x182 High Speed Mode



XC6217x182 High Speed Mode



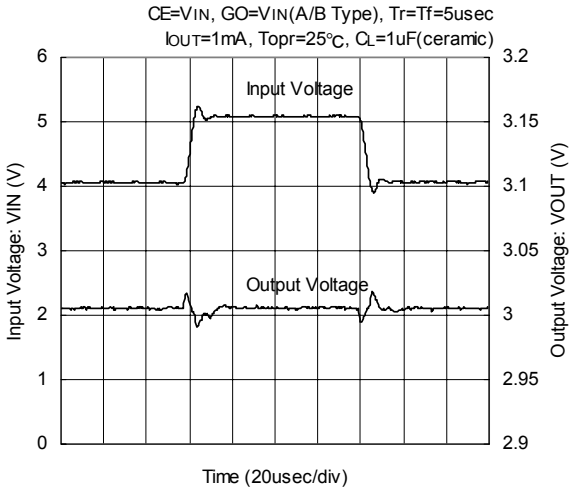
XC6217x182 High Speed Mode



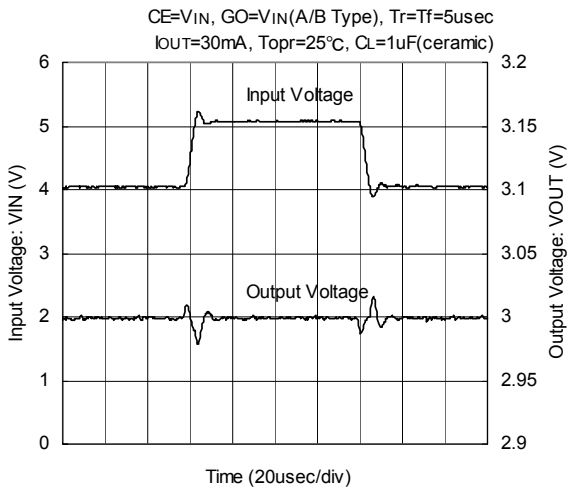
■TYPICAL PERFORMANCE CHARACTERISTICS (Continued)

(10) Line Transient Response

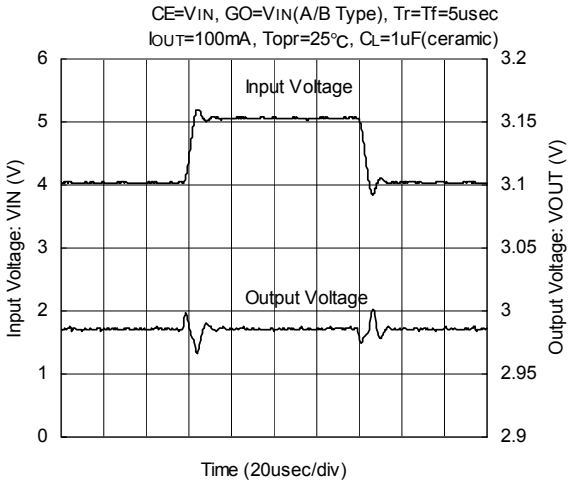
XC6217x302 High Speed Mode



XC6217x302 High Speed Mode

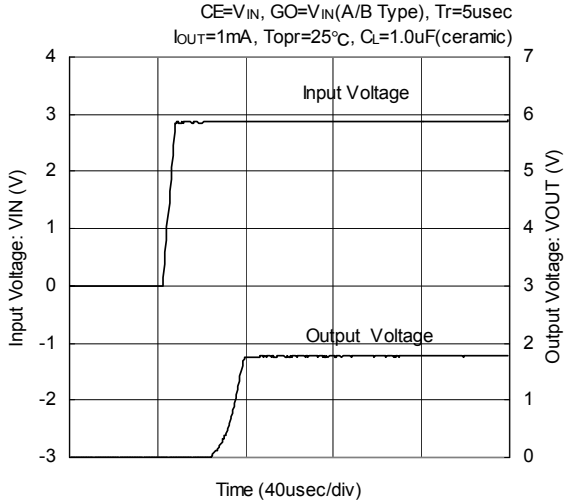


XC6217x302 High Speed Mode

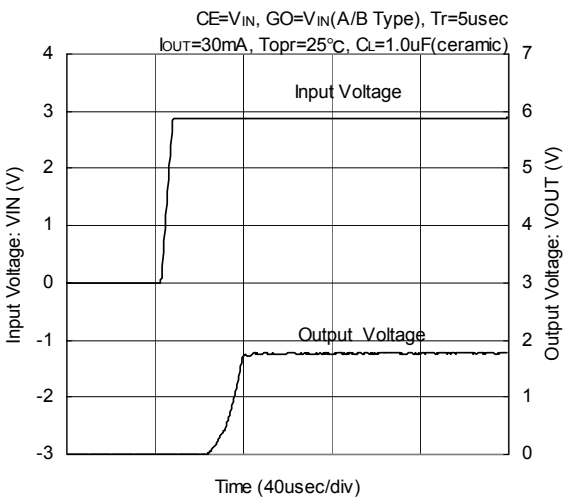


(11) Turn-On Response

XC6217x182xx High Speed Mode



XC6217x182xx High Speed Mode

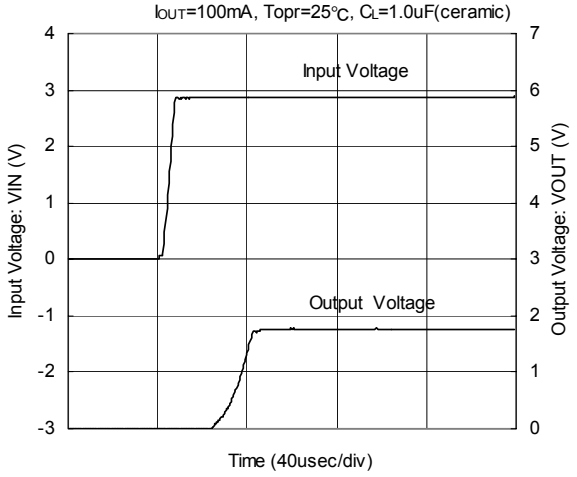


■TYPICAL PERFORMANCE CHARACTERISTICS (Continued)

(11) Turn-On Response (Continued)

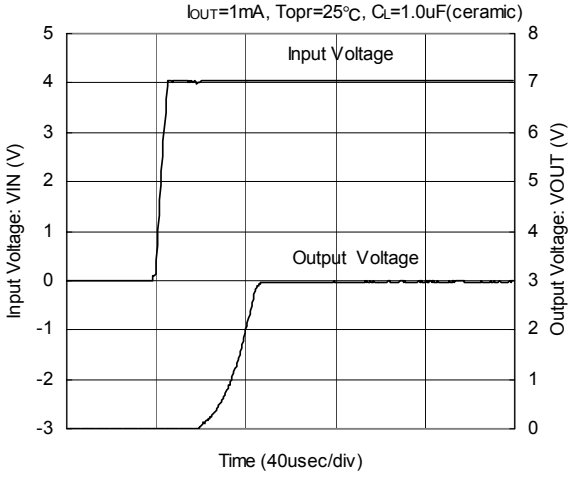
XC6217x182xx High Speed Mode

CE=V_{IN}, GO=V_{IN}(A/B Type), Tr=5usec
I_{OUT}=100mA, Topr=25℃, C_L=1.0uF(ceramic)



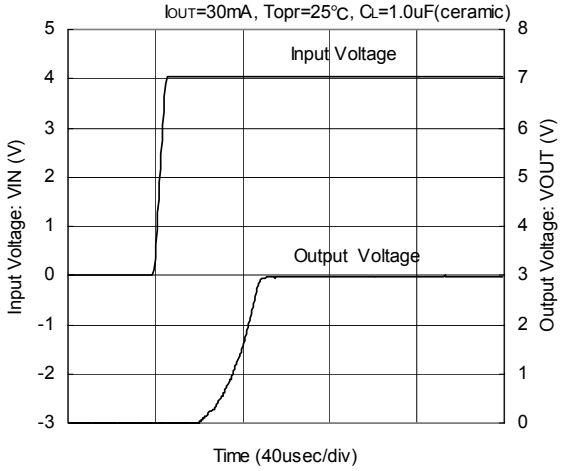
XC6217x302xx High Speed Mode

CE=V_{IN}, GO=V_{IN}(A/B Type), Tr=5usec
I_{OUT}=1mA, Topr=25℃, C_L=1.0uF(ceramic)



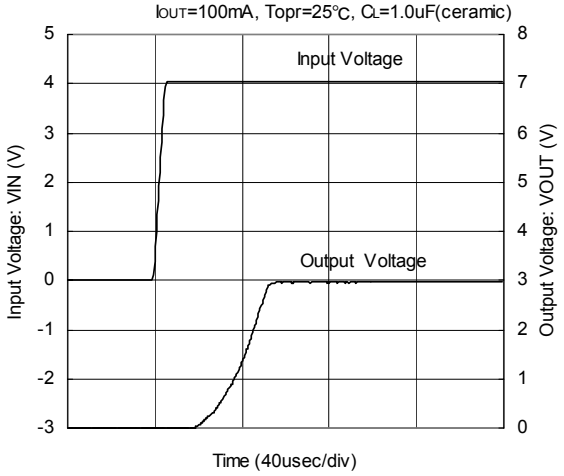
XC6217x302xx High Speed Mode

CE=V_{IN}, GO=V_{IN}(A/B Type), Tr=5usec
I_{OUT}=30mA, Topr=25℃, C_L=1.0uF(ceramic)



XC6217x302xx High Speed Mode

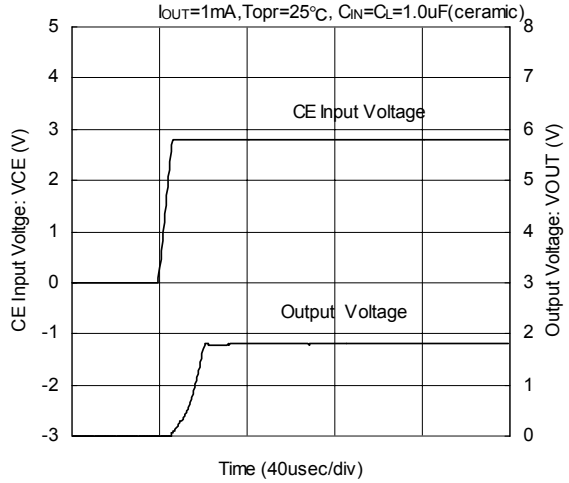
CE=V_{IN}, GO=V_{IN}(A/B Type), Tr=5usec
I_{OUT}=100mA, Topr=25℃, C_L=1.0uF(ceramic)



(12) CE Turn-On Response

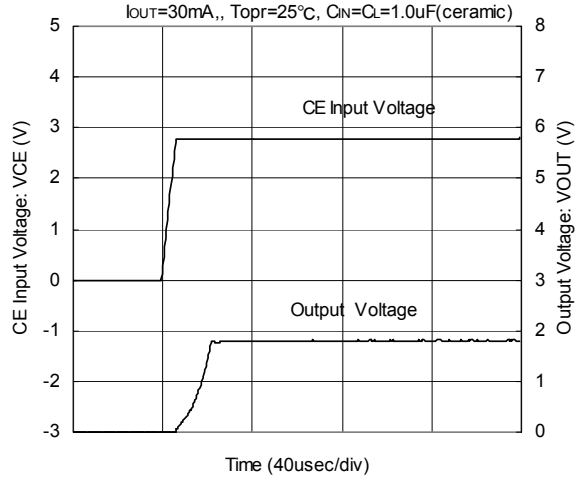
XC6217x182 High Speed Mode

V_{IN}=2.8V, GO=V_{IN}(A/B Type), Tr=5usec
I_{OUT}=1mA,Topr=25℃, C_{IN}=C_L=1.0uF(ceramic)



XC6217x182 High Speed Mode

V_{IN}=2.8V, GO=V_{IN}(A/B Type), Tr=5usec
I_{OUT}=30mA,, Topr=25℃, C_{IN}=C_L=1.0uF(ceramic)

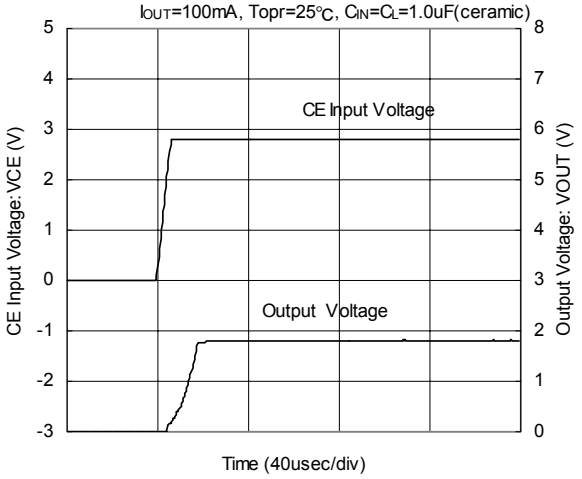


■TYPICAL PERFORMANCE CHARACTERISTICS (Continued)

(12) CE Turn-On Response (Continued)

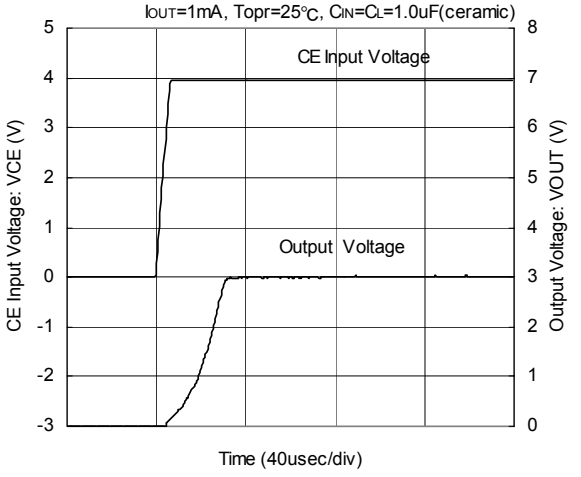
XC6217x182 High Speed Mode

V_{IN}=2.8V, GO=V_{IN}(A/B Type), Tr=5usec
I_{OUT}=100mA, Topr=25°C, C_{IN}=C_L=1.0uF(ceramic)



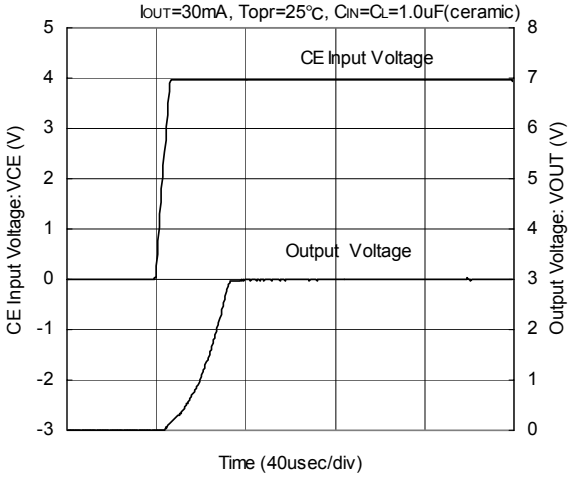
XC6217x302 High Speed Mode

V_{IN}=4.0V, GO=V_{IN}(A/B Type), Tr=5usec
I_{OUT}=1mA, Topr=25°C, C_{IN}=C_L=1.0uF(ceramic)



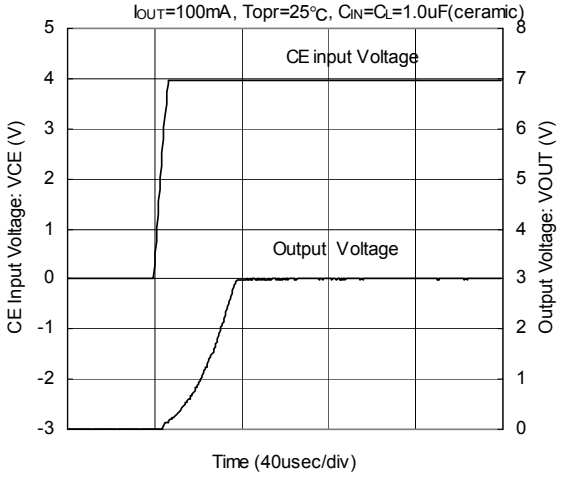
XC6217x302 High Speed Mode

V_{IN}=4.0V, GO=V_{IN}(A/B Type), Tr=5usec
I_{OUT}=30mA, Topr=25°C, C_{IN}=C_L=1.0uF(ceramic)



XC6217x302 High Speed Mode

V_{IN}=4.0V, GO=V_{IN}(A/B Type), Tr=5usec
I_{OUT}=100mA, Topr=25°C, C_{IN}=C_L=1.0uF(ceramic)

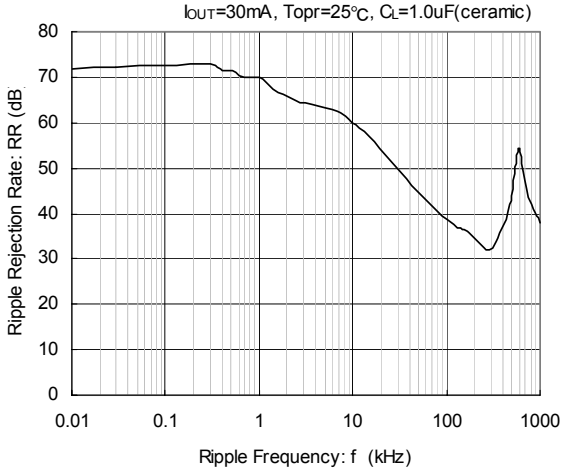


■TYPICAL PERFORMANCE CHARACTERISTICS (Continued)

(13) Ripple Rejection Rate

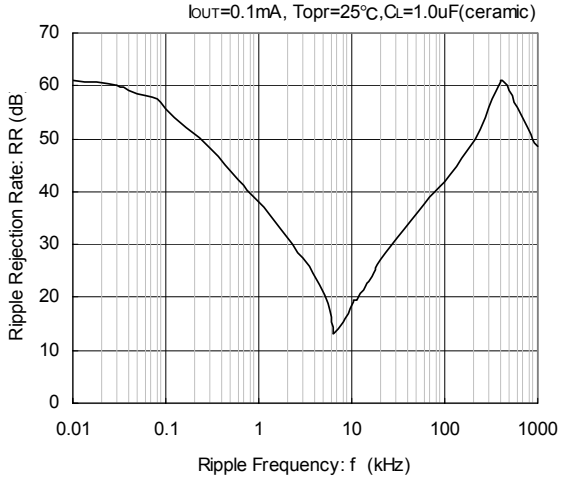
XC6217x182 High Speed Mode

V_{IN}=CE=2.8V_{DC}+0.5Vp-p_{AC}, GO=V_{IN}(A/B Type)
I_{OUT}=30mA, Topr=25℃, C_L=1.0uF(ceramic)



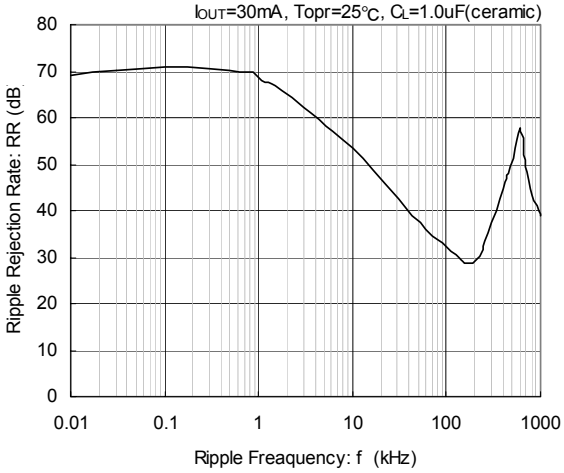
XC6217x182 Power Save Mode

V_{IN}=CE=2.8V_{DC}+0.5Vp-p_{AC}, GO=V_{SS}(A/B Type)
I_{OUT}=0.1mA, Topr=25℃, C_L=1.0uF(ceramic)



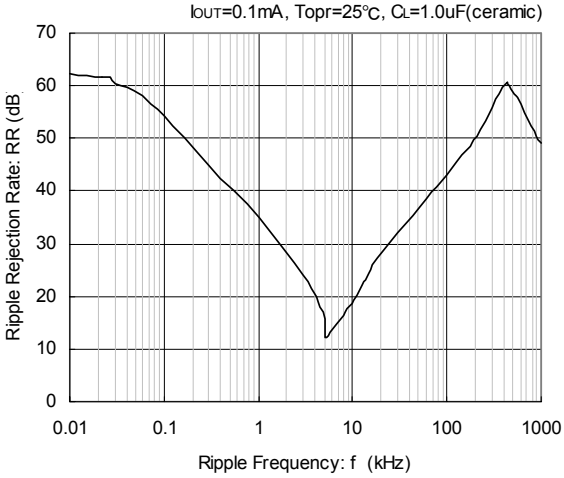
XC6217x302 High Speed Mode

V_{IN}=CE=4.0V_{DC}+0.5Vp-p_{AC}, GO=V_{SS}(A/B Type)
I_{OUT}=30mA, Topr=25℃, C_L=1.0uF(ceramic)



XC6217x302 Power Save Mode

V_{IN}=CE=4.0V_{DC}+0.5Vp-p_{AC}, GO=V_{SS}(A/B Type)
I_{OUT}=0.1mA, Topr=25℃, C_L=1.0uF(ceramic)



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