ELM89xxxBC CMOS 300mA LDO Voltage regulator

■General description

ELM89xxxBC is CMOS LDO voltage regulator. There are 3 types of CE selection for ELM89 series: non-chip enable function, "L"active and "H"active. Thermal shutdown protective function and short circuit current limiter are included in the IC. The standard output voltages are 1.2V, 1.8.V, 2.5V, 3.0V, 3.3V, 5.0V; ELM89 series can also be designed as semi-customed IC within the range of 0.8V ～ 5.0V by 0.1V step.

■Features

- Output voltage range : 0.8V～5.0V (by 0.1V)
- Output current : 300mA
- Stand by current consumption : Typ. 0.1μA
- Input stability : Typ. 0.02%/V (Iout=40mA)
- Load stability : Typ. 5mV (1mA≦Iout≦100mA)
- Accuracy of output voltage : ±2.0% (Vout＞1.5V)
  ±30mV (Vout≦1.5V)
- Input-output voltage difference : Typ. 350mV (Vout=3.0V, Iout=300mA)
- Short circuit current limiter : Typ. 40mA (Vout=0V)
- Thermal shutdown protection : Typ. 165℃
- Chip enable pin : "L"active (ELM89xx2BC),
  "H"active (ELM89xx3BC)
- Package : SOT-23, SOT-25

■ Application

- Battery operated devices
- Wireless devices
- Cell phones
- Battery-operated devices
- PCs

■Maximum absolute ratings

Parameter	Symbol	Limit	Unit
Input voltage	Vin	Vss-0.3～7.0	V
$\overline{CE}$/CE Input voltage	Vce	Vss-0.3～Vin+0.3	V
Output voltage	Vout	Vss-0.3～Vin+0.3	V
Output current	Iout	600	mA
Power dissipation	Pd	200 (SOT-23) 300 (SOT-25)	mW
Operationg Temperature	Top	-40～+85	℃
Storage Temperature	Tstg	-55～+125	℃

■Selection guide

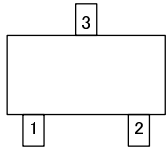
ELM89xxxBC-x

Symbol		
a,b	Output voltage	e.g. : 12: Vout=1.2V 18:Vout=1.8V 25: Vout=2.5V 30:Vout=3.0V 33: Vout=3.3V 50:Vout=5.0V
c	CE selection	1 : No CE 2 : $\overline{CE}$="L"active 3 : CE="H"active
d	Package	B : SOT-23, SOT-25
e	Product version	C
f	Taping direction	S,N : Refer to PKG file

ELM89 x x x B C - x
↑ ↑ ↑ ↑ ↑ ↑
a b c d e f

■Pin configuration

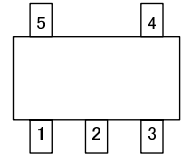
SOT-23 (TOP VIEW)



ELM89xx1BC

Pin No.	Pin name
1	VIN
2	VOUT
3	VSS

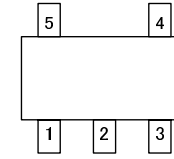
SOT-25 (TOP VIEW)



ELM89xx2BC

Pin No.	Pin name
1	VIN
2	VSS
3	$\overline{CE}$
4	NC
5	VOUT

SOT-25 (TOP VIEW)

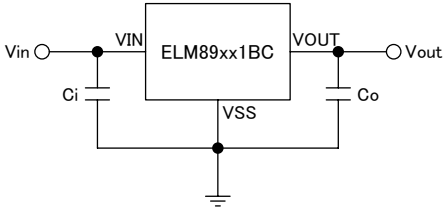


ELM89xx3BC

Pin No.	Pin name
1	VIN
2	VSS
3	CE
4	NC
5	VOUT

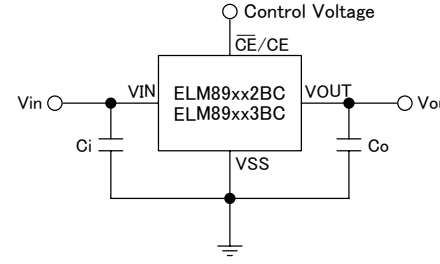
■Standard circuit

ELM89xx1BC



∗ Ci=1μF, Co=1μF or greater

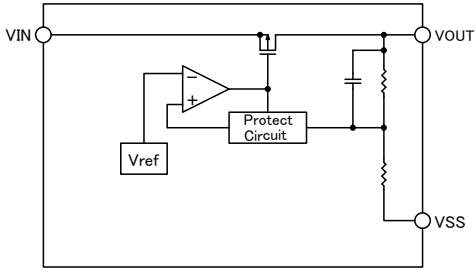
ELM89xx2BC:$\overline{CE}$, ELM89xx3BC:CE



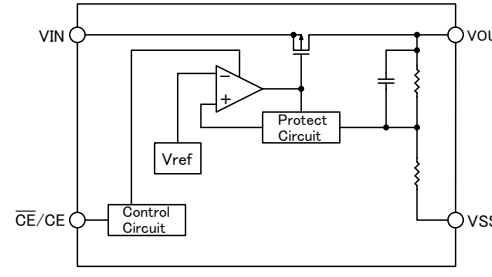
∗ Ci=1μF, Co=1μF or greater

■Block diagram

ELM89xx1BC



ELM89xx2BC:$\overline{CE}$, ELM89xx3BC:CE



■Electrical characteristics (ELM89xx1BC)

Vout=1.2V (ELM89121BC), No CE pin Top=25℃

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Output voltage	Vout	Vin=2.2V, Iout=40mA	1.170	1.200	1.230	V
Output current	Iout	Vin=2.2V	300			mA
Input stability	ΔVout/ΔVin	Iout=40mA, 2.0V≦Vin≦6.0V		0.05	0.20	%/V
Load stability	ΔVout/ΔIout	1mA≦Iout≦100mA, Vin=2.2V		5	20	mV
Input-Output voltage differential	Vdif	Iout=100mA		380	620	mV
Current consumption	Iss	Vin=2.2V, No-load		15	50	μA
Input voltage	Vin		1.4		6.0	V
Output voltage temperature coefficient	ΔVout/ΔTop	-40℃≦Top≦+85℃, Iout=40mA, Vin=2.2V		±100		ppm/℃
Short circuit current	Ilim	Vout=0V		40		mA
Ripple rejection ratio	RR	f=1kHz, Iout=40mA		60		dB
Thermal shutdown temparature	Tsd			165		℃
Output noise	Vno	BW=10Hz～100kHz		30		μVrms

Vout=1.8V (ELM89181BC), No CE pin Top=25℃

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Output voltage	Vout	Vin=2.8V, Iout=40mA	1.764	1.800	1.836	V
Output current	Iout	Vin=2.8V	300			mA
Input stability	ΔVout/ΔVIN	Iout=40mA, 2.3V≦Vin≦6.0V		0.02	0.20	%/V
Load stability	ΔVout/ΔIout	1mA≦Iout≦100mA, Vin=2.8V		5	20	mV
Input-Output voltage differential	Vdif	Iout=100mA		145	230	mV
Current consumption	Iss	Vin=2.8V, No-load		15	50	μA
Input voltage	Vin		1.4		6.0	V
Output voltage temperature coefficient	ΔVout/ΔTop	-40℃≦Top≦+85℃, Iout=40mA, Vin=2.8V		±100		ppm/℃
Short circuit current	Ilim	Vout=0V		40		mA
Ripple rejection ratio	RR	f=1kHz, Iout=40mA		60		dB
Thermal shutdown temparature	Tsd			165		℃
Output noise	Vno	BW=10Hz～100kHz		30		μVrms

Vout=2.5V (ELM89251BC), No CE pin

Top=25℃

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Output voltage	Vout	Vin=3.5V, Iout=40mA	2.450	2.500	2.550	V
Output current	Iout	Vin=3.5V	300			mA
Input stability	ΔVout/ΔVin	Iout=40mA, 3.0V≦Vin≦6.0V		0.02	0.20	%/V
Load stability	ΔVout/ΔIout	1mA≦Iout≦100mA, Vin=3.5V		5	20	mV
Input-Output voltage differential	Vdif	Iout=100mA		120	190	mV
Current consumption	Iss	Vin=3.5V, No-load		15	50	μA
Input voltage	Vin		1.4		6.0	V
Output voltage temperature coefficient	ΔVout/ΔTop	-40℃≦Top≦+85℃, Iout=40mA, Vin=3.5V		±100		ppm/℃
Short circuit current	Ilim	Vout=0V		40		mA
Ripple rejection ratio	RR	f=1kHz, Iout=40mA		60		dB
Thermal shutdown temparature	Tsd			165		℃
Output noise	Vno	BW=10Hz～100kHz		30		μVrms

Vout=3.0V (ELM89301BC), No CE pin

Top=25℃

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Output voltage	Vout	Vin=4.0V, Iout=40mA	2.940	3.000	3.060	V
Output current	Iout	Vin=4.0V	300			mA
Input stability	ΔVout/ΔVin	Iout=40mA, 3.5V≦Vin≦6.0V		0.02	0.20	%/V
Load stability	ΔVout/ΔIout	1mA≦Iout≦100mA, Vin=4.0V		5	20	mV
Input-Output voltage differential	Vdif	Iout=100mA		110	175	mV
Current consumption	Iss	Vin=4.0V, No-load		15	50	μA
Input voltage	Vin		1.4		6.0	V
Output voltage temperature coefficient	ΔVout/ΔTop	-40℃≦Top≦+85℃, Iout=40mA, Vin=4.0V		±100		ppm/℃
Short circuit current	Ilim	Vout=0V		40		mA
Ripple rejection ratio	RR	f=1kHz, Iout=40mA		60		dB
Thermal shutdown temparature	Tsd			165		℃
Output noise	Vno	BW=10Hz～100kHz		30		μVrms

Vout=3.3V (ELM89331BC), No CE pin

Top=25℃

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Output voltage	Vout	Vin=4.3V, Iout=40mA	3.234	3.300	3.366	V
Output current	Iout	Vin=4.3V	300			mA
Input stability	ΔVout/ΔVin	Iout=40mA, 3.8V≦Vin≦6.0V		0.02	0.20	%/V
Load stability	ΔVout/ΔIout	1mA≦Iout≦100mA, Vin=4.3V		5	20	mV
Input-Output voltage differential	Vdif	Iout=100mA		110	175	mV
Current consumption	Iss	Vin=4.3V, No-load		15	50	μA
Input voltage	Vin		1.4		6.0	V
Output voltage temperature coefficient	ΔVout/ΔTop	-40℃≦Top≦+85℃, Iout=40mA, Vin=4.3V		±100		ppm/℃
Short circuit current	Ilim	Vout=0V		40		mA
Ripple rejection ratio	RR	f=1kHz, Iout=40mA		60		dB
Thermal shutdown temparature	Tsd			165		℃
Output noise	Vno	BW=10Hz～100kHz		30		μVrms

Vout=5.0V (ELM89501BC), No CE pin

Top=25℃

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Output voltage	Vout	Vin=6.0V, Iout=40mA	4.900	5.000	5.100	V
Output current	Iout	Vin=6.0V	300			mA
Input stability	ΔVout/ΔVin	Iout=40mA, 5.5V≦Vin≦6.0V		0.02	0.20	%/V
Load stability	ΔVout/ΔIout	1mA≦Iout≦100mA, Vin=6.0V		5	20	mV
Input-Output voltage differential	Vdif	Iout=100mA		100	160	mV
Current consumption	Iss	Vin=6.0V, No-load		15	50	μA
Input voltage	Vin		1.4		6.0	V
Output voltage temperature coefficient	ΔVout/ΔTop	-40℃≦Top≦+85℃, Iout=40mA, Vin=6.0V		±100		ppm/℃
Short circuit current	Ilim	Vout=0V		40		mA
Ripple rejection ratio	RR	f=1kHz, Iout=40mA		60		dB
Thermal shutdown temparature	Tsd			165		℃
Output noise	Vno	BW=10Hz～100kHz		30		μVrms

■Electrical characteristics (ELM89xx2BC)

Vout=1.8V (ELM89182BC), $\overline{CE}$="L"active Top=25℃

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Output voltage	Vout	Vin=2.8V, Iout=40mA	1.764	1.800	1.836	V
Output current	Iout	Vin=2.8V	300			mA
Input stability	ΔVout/ΔVin	Iout=40mA, 2.3V≦Vin≦6.0V		0.02	0.20	%/V
Load stability	ΔVout/ΔIout	1mA≦Iout≦100mA, Vin=2.8V		5	20	mV
Input-Output voltage differential	Vdif	Iout=100mA		145	230	mV
Current consumption	Iss	Vin=2.8V, No-load		15	50	μA
Stand-by current consumption	Istandby	Vin=Vce=2.8V			0.5	μA
Input voltage	Vin		1.4		6.0	V
$\overline{CE}$ input voltage High	Vceh	Vin=6.0V	1.8		Vin	V
$\overline{CE}$ input voltage Low	Vcel	Vin=1.4V	0.0		0.2	V
$\overline{CE}$ input current High	Iceh	Vce=Vin=6.0V	−0.2	0.0	0.2	μA
$\overline{CE}$ input current Low	Icel	Vce=Vss, Vin=6.0V	−0.2	0.0	0.2	
Output voltage temperature coefficient	ΔVout/ΔTop	−40℃≦Top≦+85℃, Iout=40mA, Vin=2.8V		±100		ppm/℃
Short circuit current	Ilim	Vout=0V		40		mA
Ripple rejection ratio	RR	f=1kHz, Iout=40mA		60		dB
Thermal shutdown temparature	Tsd			165		℃
Output noise	Vno	BW=10Hz～100kHz		30		μVrms

■Electrical characteristics (ELM89xx3BC)

Vout=1.2V (ELM89123BC), CE="H"active Top=25℃

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Output voltage	Vout	Vin=2.2V, Iout=40mA	1.170	1.200	1.230	V
Output current	Iout	Vin=2.2V	300			mA
Input stability	ΔVout/ΔVin	Iout=40mA, 2.0V≦Vin≦6.0V		0.05	0.20	%/V
Load stability	ΔVout/ΔIout	1mA≦Iout≦100mA, Vin=2.2V		5	20	mV
Input-Output voltage differential	Vdif	Iout=100mA		380	620	mV
Current consumption	Iss	Vin=2.2V, No-load		15	50	μA
Stand-by current consumption	Istandby	Vin=2.2V, Vce=0			0.5	μA
Input voltage	Vin		1.4		6.0	V
CE input voltage High	Vceh	Vin=6.0V	1.8		Vin	V
CE input voltage Low	Vcel	Vin=1.4V	0.0		0.2	V
CE input current High	Iceh	Vce=Vin=6.0V	−0.2	0.0	0.2	μA
CE input current Low	Icel	Vce=Vss, Vin=6.0V	−0.2	0.0	0.2	
Output voltage temperature coefficient	ΔVout/ΔTop	−40℃≦Top≦+85℃, Iout=40mA, Vin=2.2V		±100		ppm/℃
Short circuit current	Ilim	Vout=0V		40		mA
Ripple rejection ratio	RR	f=1kHz, Iout=40mA		60		dB
Thermal shutdown temparature	Tsd			165		℃
Output noise	Vno	BW=10Hz～100kHz		30		μVrms

Vout=1.8V (ELM89183BC), CE="H"active Top=25℃

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Output voltage	Vout	Vin=2.8V, Iout=40mA	1.764	1.800	1.836	V
Output current	Iout	Vin=2.8V	300			mA
Input stability	ΔVout/ΔVin	Iout=40mA, 2.3V≦Vin≦6.0V		0.02	0.20	%/V
Load stability	ΔVout/ΔIout	1mA≦Iout≦100mA, Vin=2.8V		5	20	mV
Input-Output voltage differential	Vdif	Iout=100mA		145	230	mV
Current consumption	Iss	Vin=2.8V, No-load		15	50	μA
Stand-by current consumption	Istandby	Vin=2.8V, Vce=0			0.5	μA
Input voltage	Vin		1.4		6.0	V
CE input voltage High	Vceh	Vin=6.0V	1.8		Vin	V
CE input voltage Low	Vcel	Vin=1.4V	0.0		0.2	V
CE input current High	Iceh	Vce=Vin=6.0V	-0.2	0.0	0.2	μA
CE input current Low	Icel	Vce=Vss, Vin=6.0V	-0.2	0.0	0.2	
Output voltage temperature coefficient	ΔVout/ΔTop	-40℃≦Top≦+85℃, Iout=40mA, Vin=2.8V		±100		ppm/℃
Short circuit current	Ilim	Vout=0V		40		mA
Ripple rejection ratio	RR	f=1kHz, Iout=40mA		60		dB
Thermal shutdown temparature	Tsd			165		℃
Output noise	Vno	BW=10Hz～100kHz		30		μVrms

Vout=2.5V (ELM89253BC), CE="H"active Top=25℃

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Output voltage	Vout	Vin=3.5V, Iout=40mA	2.450	2.500	2.550	V
Output current	Iout	Vin=3.5V	300			mA
Input stability	ΔVout/ΔVin	Iout=40mA, 3.0V≦Vin≦6.0V		0.02	0.20	%/V
Load stability	ΔVout/ΔIout	1mA≦Iout≦100mA, Vin=3.5V		5	20	mV
Input-Output voltage differential	Vdif	Iout=100mA		120	190	mV
Current consumption	Iss	Vin=3.5V, No-load		15	50	μA
Stand-by current consumption	Istandby	Vin=3.5V, Vce=0			0.5	μA
Input voltage	Vin		1.4		6.0	V
CE input voltage High	Vceh	Vin=6.0V	1.8		Vin	V
CE input voltage Low	Vcel	Vin=1.4V	0.0		0.2	V
CE input current High	Iceh	Vce=Vin=6.0V	-0.2	0.0	0.2	μA
CE input current Low	Icel	Vce=Vss, Vin=6.0V	-0.2	0.0	0.2	
Output voltage temperature coefficient	ΔVout/ΔTop	-40℃≦Top≦+85℃, Iout=40mA, Vin=3.5V		±100		ppm/℃
Short circuit current	Ilim	Vout=0V		40		mA
Ripple rejection ratio	RR	f=1kHz, Iout=40mA		60		dB
Thermal shutdown temparature	Tsd			165		℃
Output noise	Vno	BW=10Hz～100kHz		30		μVrms

Vout=3.0V (ELM89303BC), CE="H"active Top=25℃

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Output voltage	Vout	Vin=4.0V, Iout=40mA	2.940	3.000	3.060	V
Output current	Iout	Vin=4.0V	300			mA
Input stability	ΔVout/ΔVin	Iout=40mA, 3.5V≦Vin≦6.0V		0.02	0.20	%/V
Load stability	ΔVout/ΔIout	1mA≦Iout≦100mA, Vin=4.0V		5	20	mV
Input-Output voltage differential	Vdif	Iout=100mA		110	175	mV
Current consumption	Iss	Vin=4.0V, No-load		15	50	μA
Stand-by current consumption	Istandby	Vin=4.0V, Vce=0			0.5	μA
Input voltage	Vin		1.4		6.0	V
CE input voltage High	Vceh	Vin=6.0V	1.8		Vin	V
CE input voltage Low	Vcel	Vin=1.4V	0.0		0.2	V
CE input current High	Iceh	Vce=Vin=6.0V	-0.2	0.0	0.2	μA
CE input current Low	Icel	Vce=Vss, Vin=6.0V	-0.2	0.0	0.2	
Output voltage temperature coefficient	ΔVout/ΔTop	-40℃≦Top≦+85℃, Iout=40mA, Vin=4.0V		±100		ppm/℃
Short circuit current	Ilim	Vout=0V		40		mA
Ripple rejection ratio	RR	f=1kHz, Iout=40mA		60		dB
Thermal shutdown temparature	Tsd			165		℃
Output noise	Vno	BW=10Hz～100kHz		30		μVrms

Vout=3.3V (ELM89333BC), CE="H"active Top=25℃

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Output voltage	Vout	Vin=4.3V, Iout=40mA	3.234	3.300	3.366	V
Output current	Iout	Vin=4.3V	300			mA
Input stability	ΔVout/ΔVin	Iout=40mA, 3.8V≦Vin≦6.0V		0.02	0.20	%/V
Load stability	ΔVout/ΔIout	1mA≦Iout≦100mA, Vin=4.3V		5	20	mV
Input-Output voltage differential	Vdif	Iout=100mA		110	175	mV
Current consumption	Iss	Vin=4.3V, No-load		15	50	μA
Stand-by current consumption	Istandby	Vin=4.3V, Vce=0			0.5	μA
Input voltage	Vin		1.4		6.0	V
CE input voltage High	Vceh	Vin=6.0V	1.8		Vin	V
CE input voltage Low	Vcel	Vin=1.4V	0.0		0.2	V
CE input current High	Iceh	Vce=Vin=6.0V	-0.2	0.0	0.2	μA
CE input current Low	Icel	Vce=Vss, Vin=6.0V	-0.2	0.0	0.2	
Output voltage temperature coefficient	ΔVout/ΔTop	-40℃≦Top≦+85℃, Iout=40mA, Vin=4.3V		±100		ppm/℃
Short circuit current	Ilim	Vout=0V		40		mA
Ripple rejection ratio	RR	f=1kHz, Iout=40mA		60		dB
Thermal shutdown temparature	Tsd			165		℃
Output noise	Vno	BW=10Hz～100kHz		30		μVrms

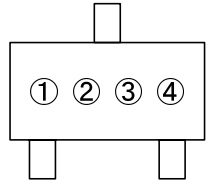
Vout=5.0V (ELM89503BC), CE="H"active　　Top=25℃

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Output voltage	Vout	Vin=6.0V, Iout=40mA	4.900	5.000	5.100	V
Output current	Iout	Vin=6.0V	300			mA
Input stability	ΔVout/ΔVin	Iout=40mA, 5.5V≦Vin≦6.0V		0.02	0.20	%/V
Load stability	ΔVout/ΔIout	1mA≦Iout≦100mA, Vin=6.0V		5	20	mV
Input-Output voltage differential	Vdif	Iout=100mA		100	160	mV
Current consumption	Iss	Vin=6.0V, No-load		15	50	μA
Stand-by current consumption	Istandby	Vin=6.0V, Vce=0			0.5	μA
Input voltage	Vin		1.4		6.0	V
CE input voltage High	Vceh	Vin=6.0V	1.8		Vin	V
CE input voltage Low	Vcel	Vin=1.4V	0.0		0.2	V
CE input current High	Iceh	Vce=Vin=6.0V	-0.2	0.0	0.2	μA
CE input current Low	Icel	Vce=Vss, Vin=6.0V	-0.2	0.0	0.2	
Output voltage temperature coefficient	ΔVout/ΔTop	-40℃≦Top≦+85℃, Iout=40mA, Vin=6.0V		±100		ppm/℃
Short circuit current	Ilim	Vout=0V		40		mA
Ripple rejection ratio	RR	f=1kHz, Iout=40mA		60		dB
Thermal shutdown temparature	Tsd			165		℃
Output noise	Vno	BW=10Hz～100kHz		30		μVrms

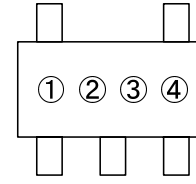
■Marking

・SOT-23 package　:　ELM89xx1BC
・SOT-25 package　:　ELM89xx2BC (with CE),　ELM89xx3BC (with CE)

SOT-23



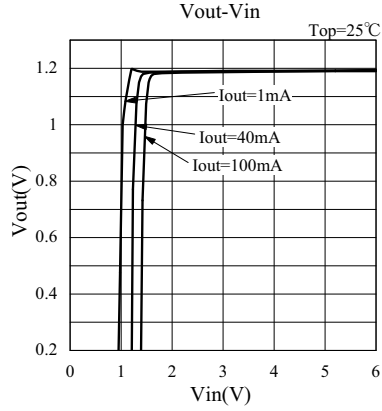
SOT-25

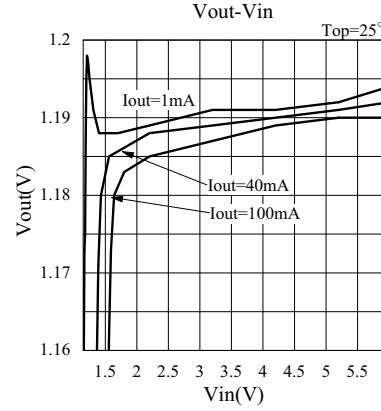


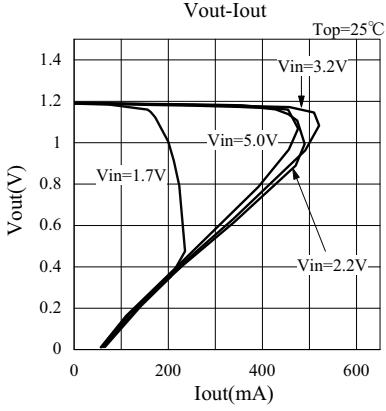
No. ①～④ : Assembly lot No.
A～Z (I, O, X excepted) and 0～9

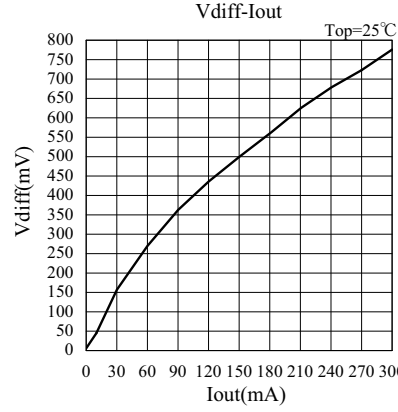
■Typical characteristics

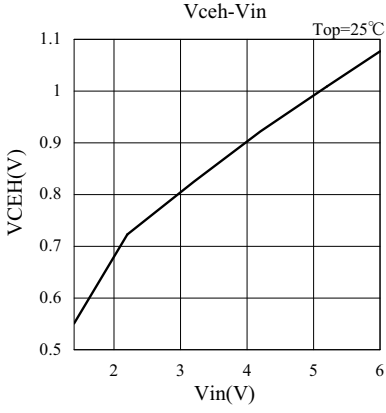
・1.2V Vout unit (ELM8912xBC)

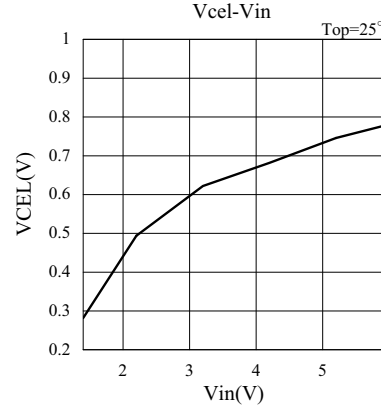


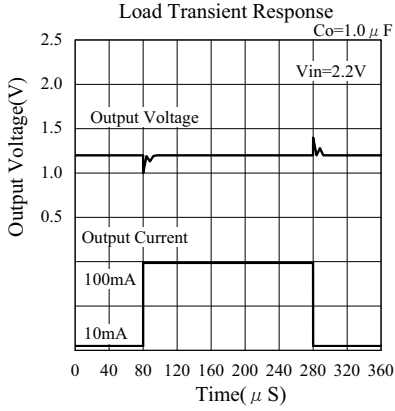


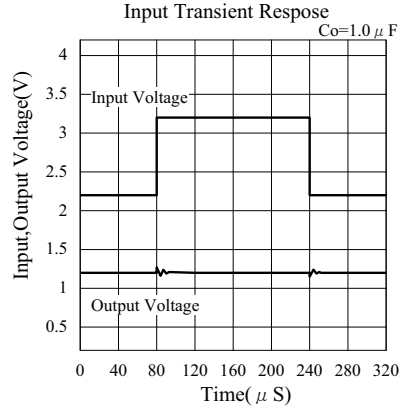


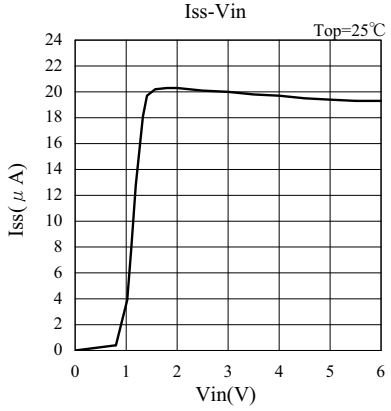


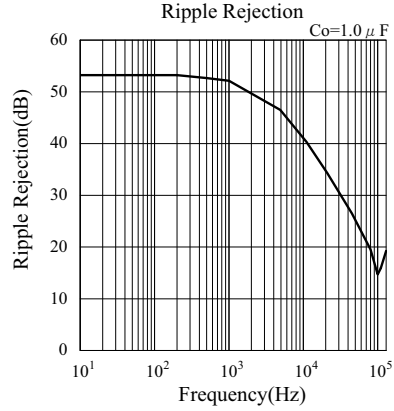




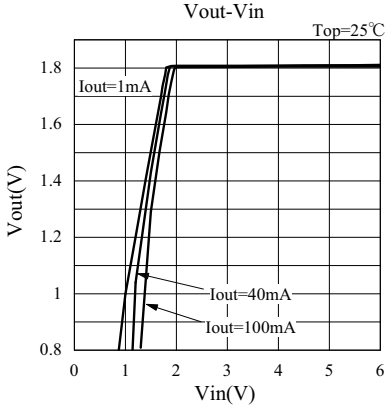

Load Transient Response
Co=1.0μF
Vin=2.2V
Output Voltage
Output Current
100mA
10mA
Output Voltage(V)
2.5
2.0
1.5
1.0
0.5
0 40 80 120 160 200 240 280 320 360
Time(μS)

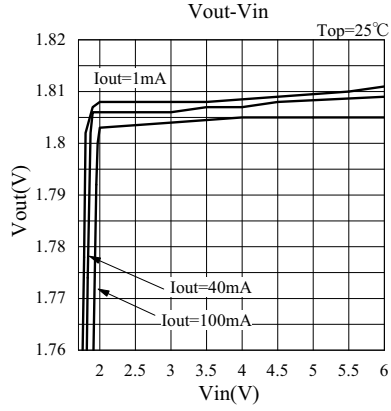

Input Transient Respose
Co=1.0μF
Input Voltage
Output Voltage
Input,Output Voltage(V)
4
3.5
3
2.5
2
1.5
1
0.5
0 40 80 120 160 200 240 280 320
Time(μS)

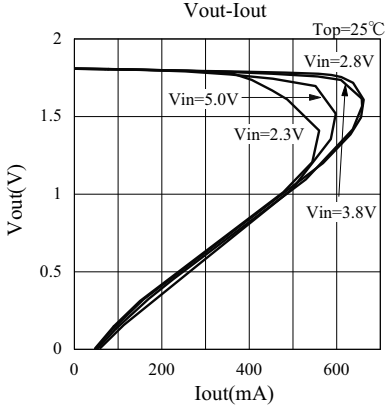

Iss-Vin
Top=25℃
Iss(μA)
24
22
20
18
16
14
12
10
8
6
4
2
0
0 1 2 3 4 5 6
Vin(V)

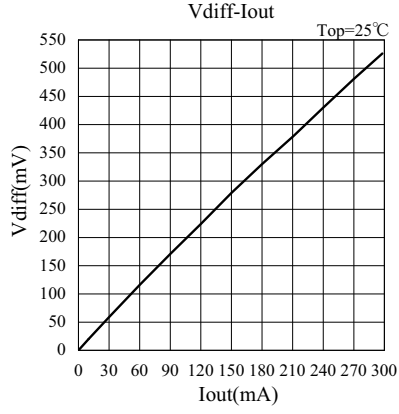

Ripple Rejection
Co=1.0μF
Ripple Rejection(dB)
60
50
40
30
20
10
0
10^1 10^2 10^3 10^4 10^5
Frequency(Hz)

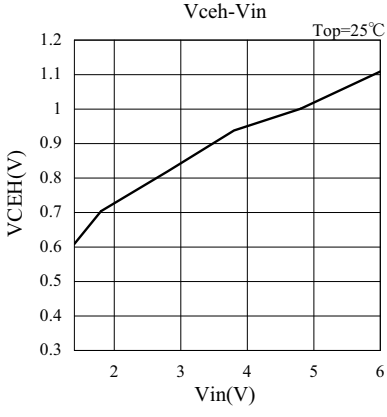
・1.8V Vout unit (ELM8918xBC)

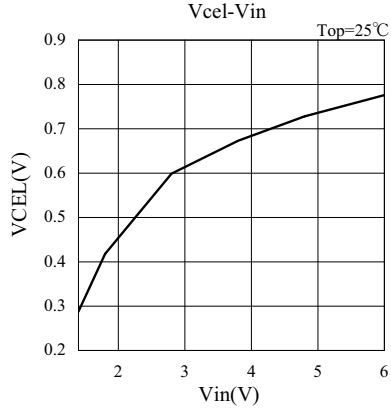


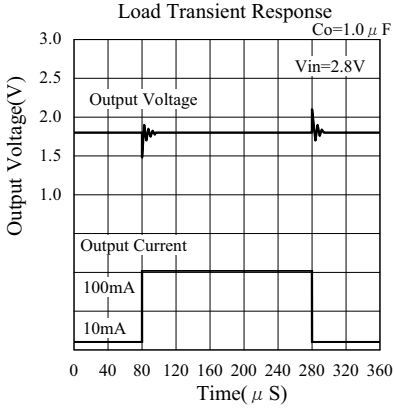


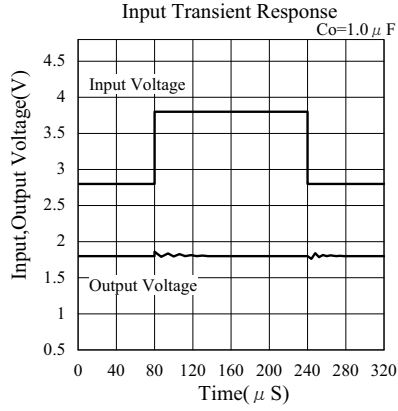


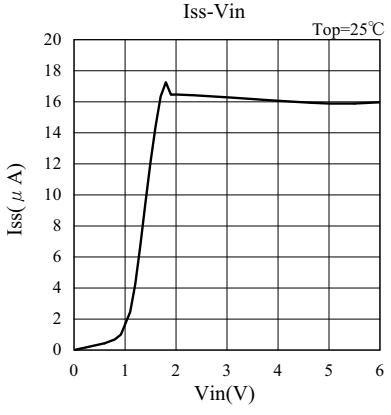


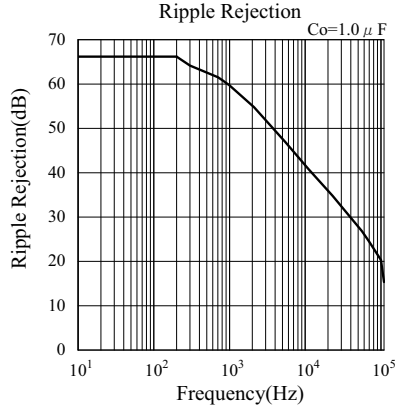




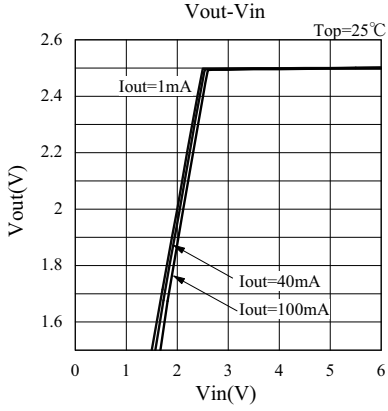

Load Transient Response
Co=1.0μF
Vin=2.8V
Output Voltage
Output Current
100mA
10mA
Output Voltage(V)
Time(μS)
3.0
2.5
2.0
1.5
1.0
0 40 80 120 160 200 240 280 320 360

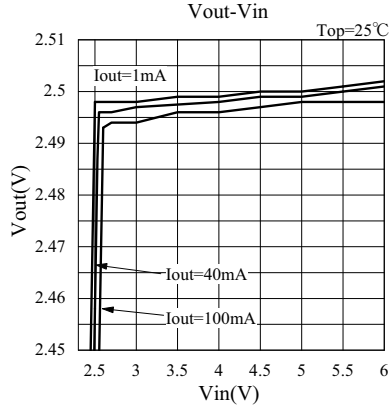

Input Transient Response
Co=1.0μF
Input Voltage
Output Voltage
Input,Output Voltage(V)
Time(μS)
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0 40 80 120 160 200 240 280 320

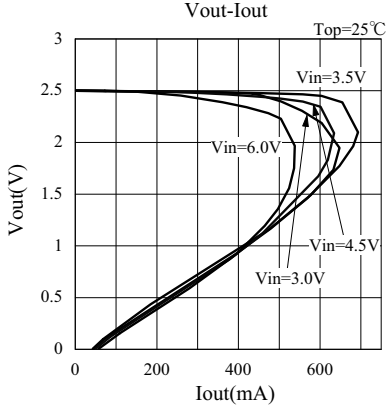

Iss-Vin
Top=25℃
Iss(μA)
Vin(V)
20
18
16
14
12
10
8
6
4
2
0
0 1 2 3 4 5 6

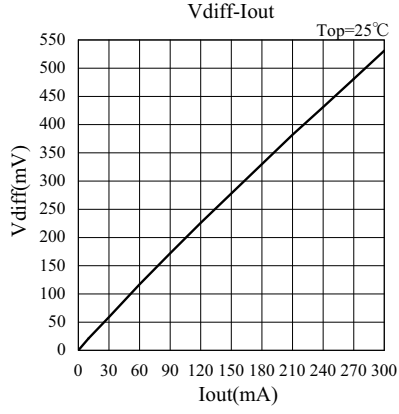

Ripple Rejection
Co=1.0μF
Ripple Rejection(dB)
Frequency(Hz)
70
60
50
40
30
20
10
0
10¹ 10² 10³ 10⁴ 10⁵

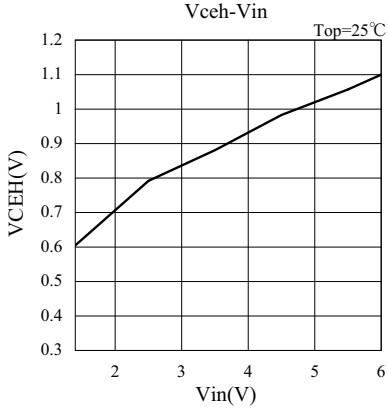
・2.5V Vout unit (ELM8925xBC)

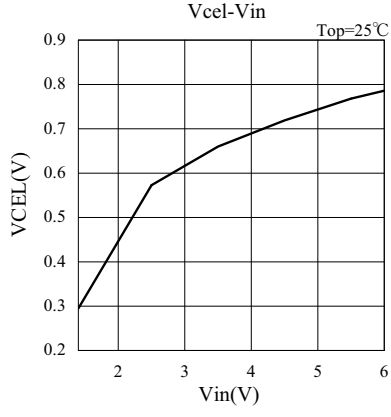


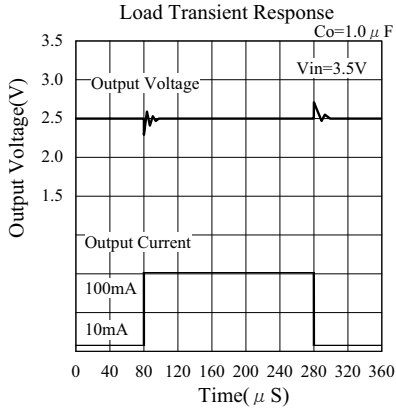


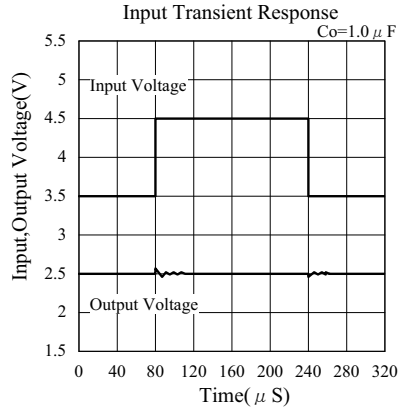


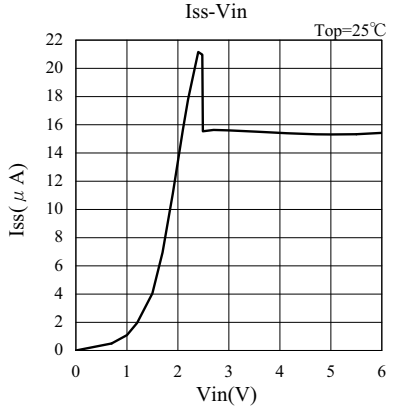


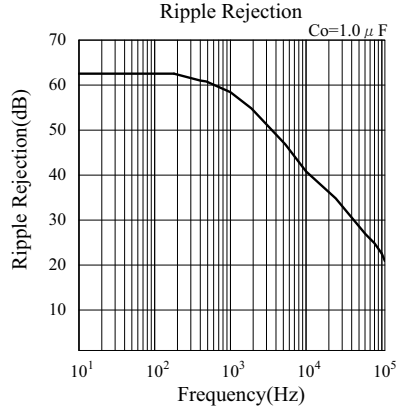




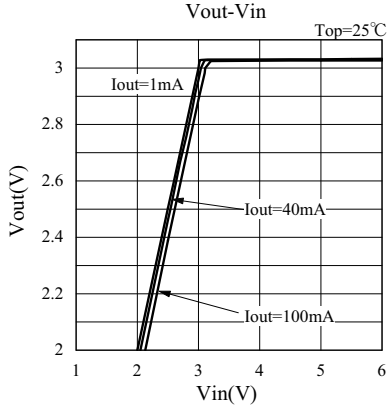

Load Transient Response
Co=1.0μF
Vin=3.5V
Output Voltage
Output Current
100mA
10mA
Output Voltage(V)
Time(μS)
3.5
3.0
2.5
2.0
1.5
0 40 80 120 160 200 240 280 320 360

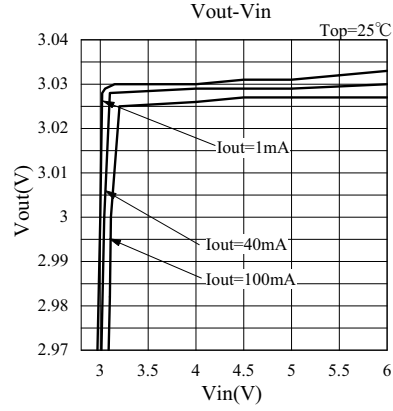

Input Transient Response
Co=1.0μF
Input Voltage
Output Voltage
Input,Output Voltage(V)
Time(μS)
5.5
5
4.5
4
3.5
3
2.5
2
1.5
0 40 80 120 160 200 240 280 320

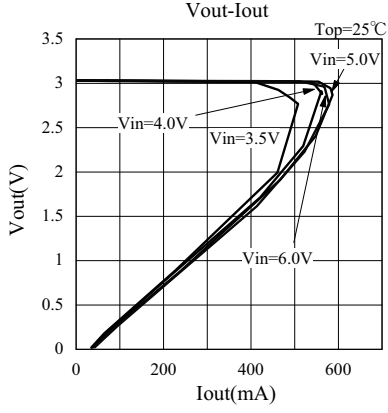

Iss-Vin
Top=25℃
Iss(μA)
Vin(V)
22
20
18
16
14
12
10
8
6
4
2
0
0 1 2 3 4 5 6

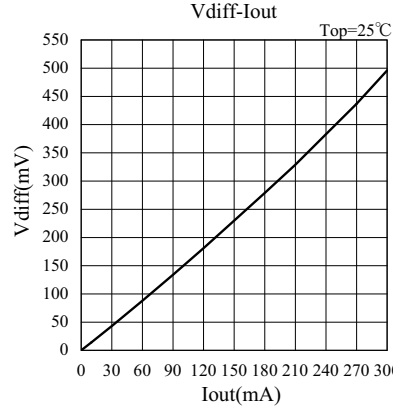

Ripple Rejection
Co=1.0μF
Ripple Rejection(dB)
Frequency(Hz)
70
60
50
40
30
20
10
10^1 10^2 10^3 10^4 10^5

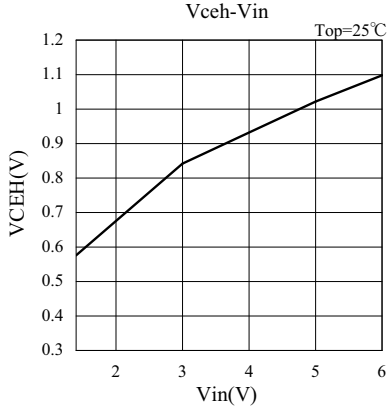
・3.0V Vout unit (ELM8930xBC)

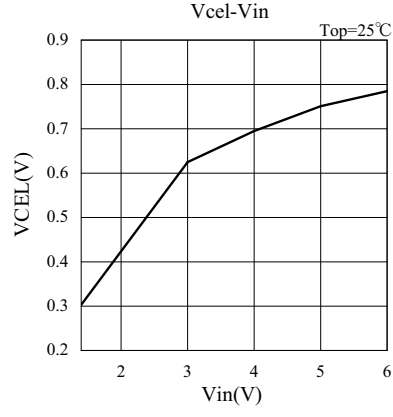


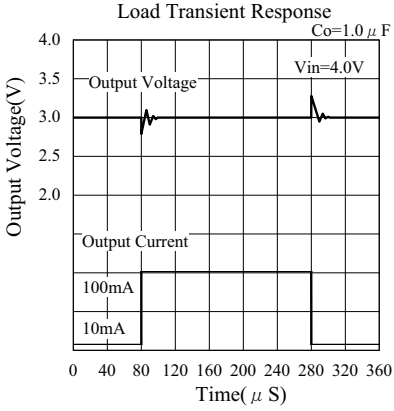


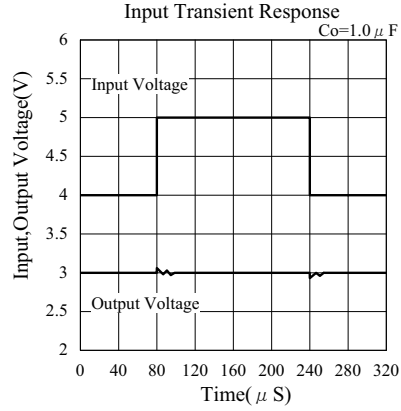


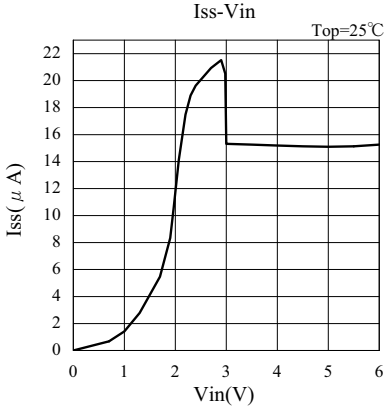


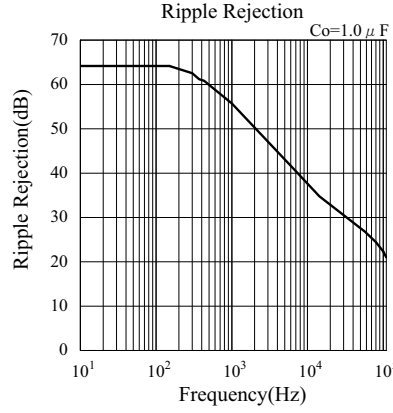




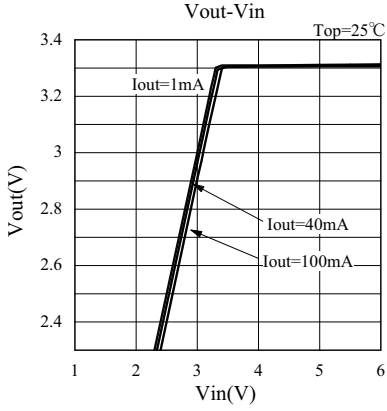

Load Transient Response
Co=1.0μF
Vin=4.0V
Output Voltage
Output Current
100mA
10mA
Output Voltage(V)
Time(μS)
4.0
3.5
3.0
2.5
2.0
0 40 80 120 160 200 240 280 320 360

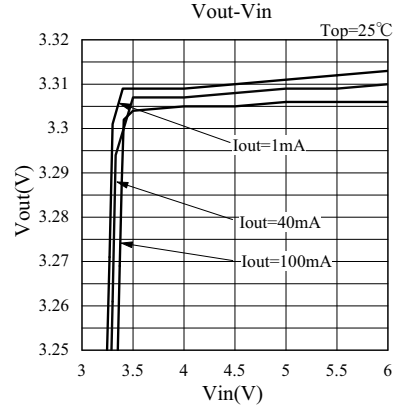

Input Transient Response
Co=1.0μF
Input Voltage
Output Voltage
Input,Output Voltage(V)
Time(μS)
6
5.5
5
4.5
4
3.5
3
2.5
2
0 40 80 120 160 200 240 280 320

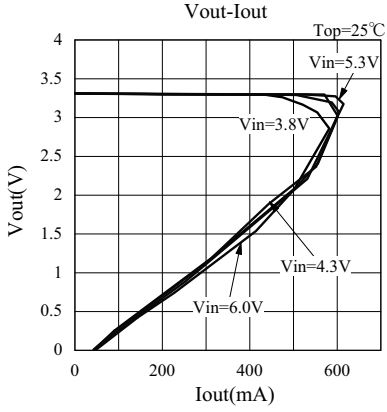

Iss-Vin
Top=25℃
Iss(μA)
Vin(V)
22
20
18
16
14
12
10
8
6
4
2
0
0 1 2 3 4 5 6

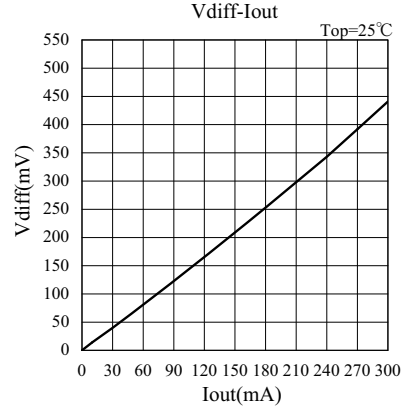

Ripple Rejection
Co=1.0μF
Ripple Rejection(dB)
Frequency(Hz)
70
60
50
40
30
20
10
0
10^1 10^2 10^3 10^4 10^5

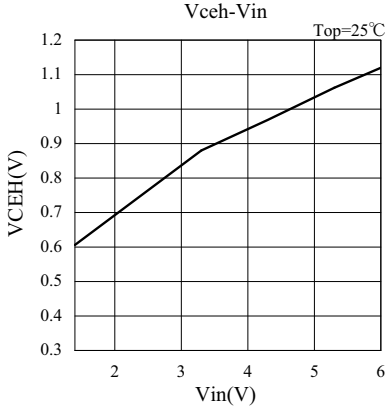
・3.3V Vout unit (ELM8933xBC)

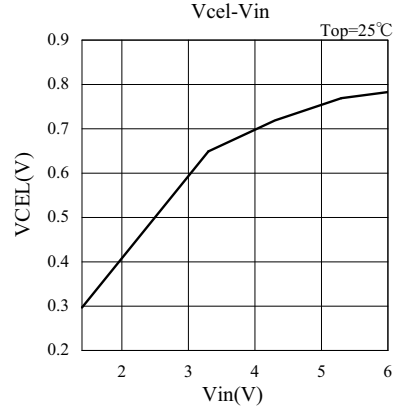


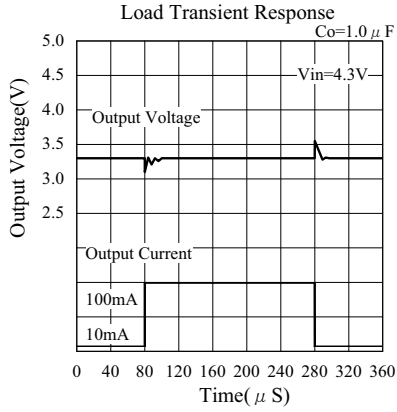


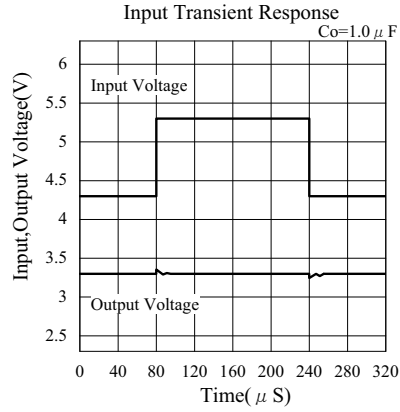


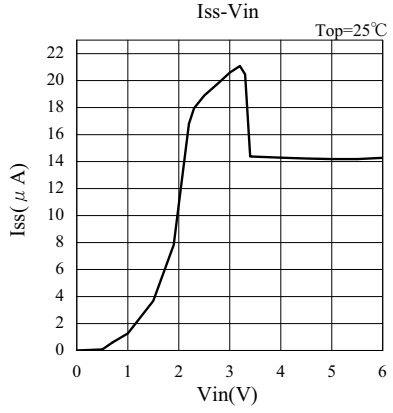


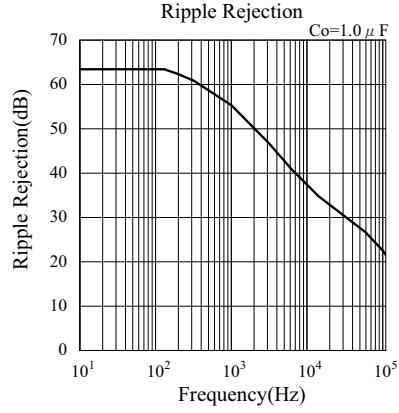




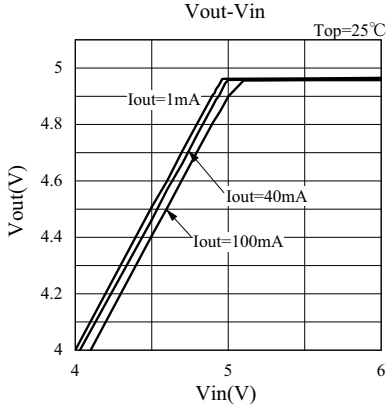

Load Transient Response
Co=1.0μF
Vin=4.3V
Output Voltage
Output Current
100mA
10mA
Output Voltage(V)
Time(μS)
5.0
4.5
4.0
3.5
3.0
2.5
0 40 80 120 160 200 240 280 320 360

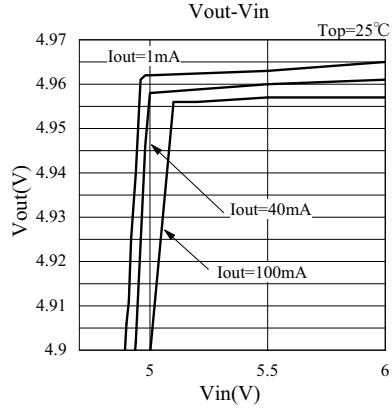

Input Transient Response
Co=1.0μF
Input Voltage
Output Voltage
Input,Output Voltage(V)
Time(μS)
6
5.5
5
4.5
4
3.5
3
2.5
0 40 80 120 160 200 240 280 320

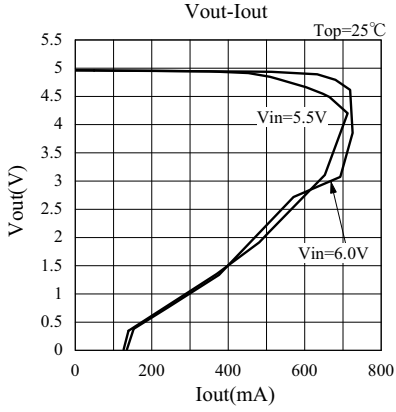

Iss-Vin
Top=25℃
Iss(μA)
Vin(V)
22
20
18
16
14
12
10
8
6
4
2
0
0 1 2 3 4 5 6

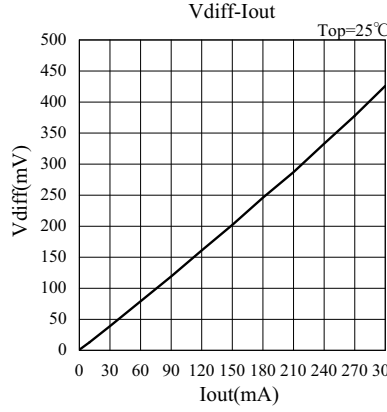

Ripple Rejection
Co=1.0μF
Ripple Rejection(dB)
Frequency(Hz)
70
60
50
40
30
20
10
0
10^1 10^2 10^3 10^4 10^5

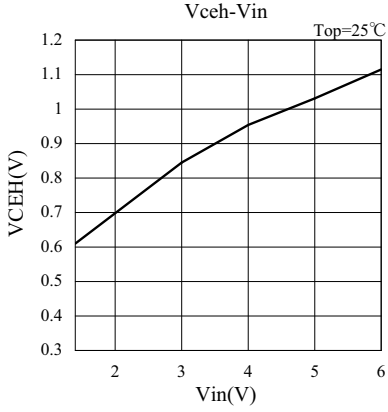
・5.0V Vout unit (ELM8950xBC)

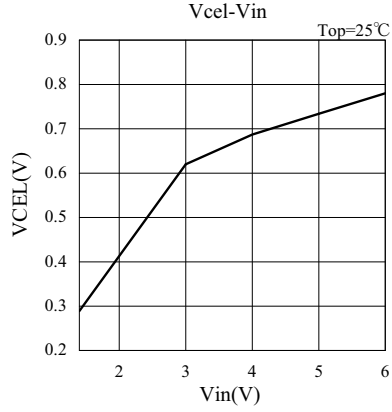


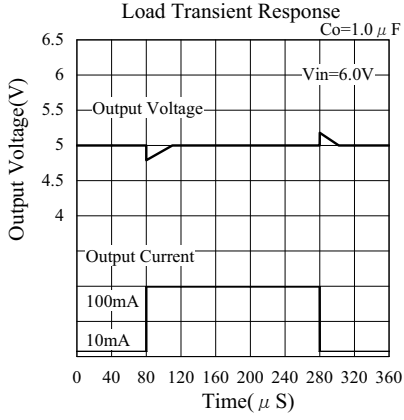


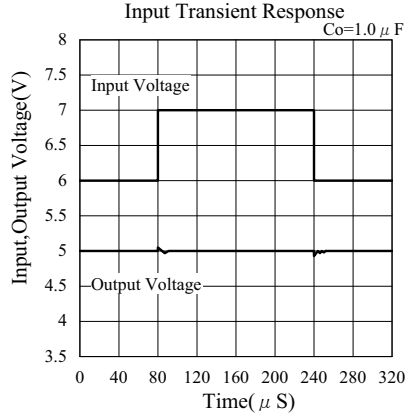


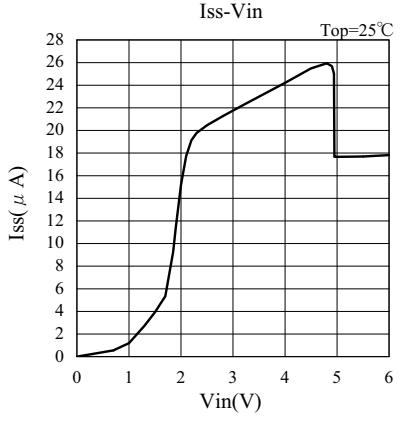


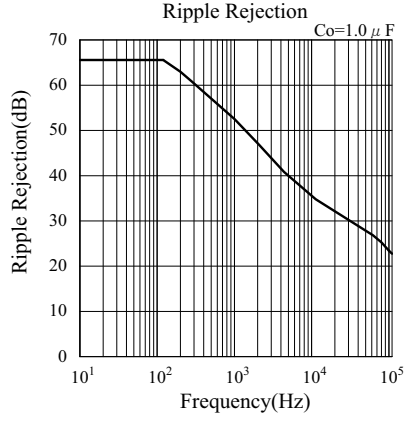





Load Transient Response
Co=1.0 μ F
Vin=6.0V
Output Voltage
Output Current
100mA
10mA
Output Voltage(V)
6.5
6
5.5
5
4.5
4
0 40 80 120 160 200 240 280 320 360
Time(μ S)


Input Transient Response
Co=1.0 μ F
Input Voltage
Output Voltage
Input,Output Voltage(V)
8
7.5
7
6.5
6
5.5
5
4.5
4
3.5
0 40 80 120 160 200 240 280 320
Time(μ S)


Iss-Vin
Top=25℃
Iss(μ A)
28
26
24
22
20
18
16
14
12
10
8
6
4
2
0
0 1 2 3 4 5 6
Vin(V)


Ripple Rejection
Co=1.0 μ F
Ripple Rejection(dB)
70
60
50
40
30
20
10
0
10^1 10^2 10^3 10^4 10^5
Frequency(Hz)