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-custom IC within the range of 0.8V to 5.0V by 0.1V step.

■Features

- Output voltage range   : 0.8V to 5.0V (by 0.1V)
- Output current   : Min.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°C
- 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 to 7.0	V
$\overline{CE}$/CE Input voltage	Vce	Vss-0.3 to Vin+0.3	V
Output voltage	Vout	Vss-0.3 to Vin+0.3	V
Output current	Iout	600	mA
Power dissipation	Pd	250 (SOT-23)	mW
		250 (SOT-25)	
Operationg Temperature	Top	-40 to +85	°C
Storage Temperature	Tstg	-55 to +125	°C

■Selection guide

ELM89xxxBC-x

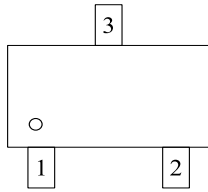| Symbol		
a, b	Output voltage	e.g. : 12: Vout=1.2V 18: Vout=1.8V 25: Vout=2.5V 30: Vout=3.0V 33: Vout=3.3V 50: Vout=5.0V
c	CE selection	1: No CE 2: $\overline{CE}$="L"active 3: CE="H"active
d	Package	B: SOT-23, SOT-25
e	Product version	C
f	Taping direction	S, N: Refer to PKG file

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

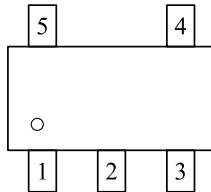# ELM89xxxBC CMOS 300mA LDO Voltage regulator

■Pin configuration

SOT-23(TOP VIEW)   SOT-25(TOP VIEW)   SOT-25(TOP VIEW)

ELM89xx1BC

Pin No.	Pin name
1	VIN
2	VOUT
3	VSS

ELM89xx2BC

Pin No.	Pin name
1	VIN
2	VSS
3	$\overline{\text{CE}}$
4	NC
5	VOUT
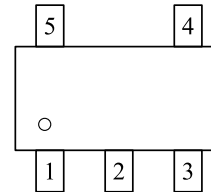
ELM89xx3BC

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

■Standard circuit

ELM89xx1BC

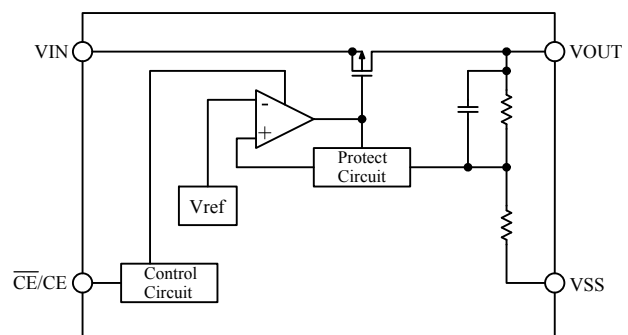ELM89xx2BC: $\overline{\text{CE}}$, ELM89xx3BC: CE

∗ Ci=1µF, Co=1µF or greater
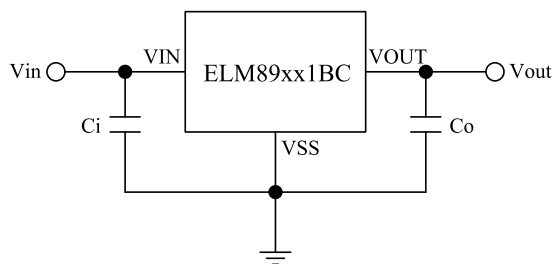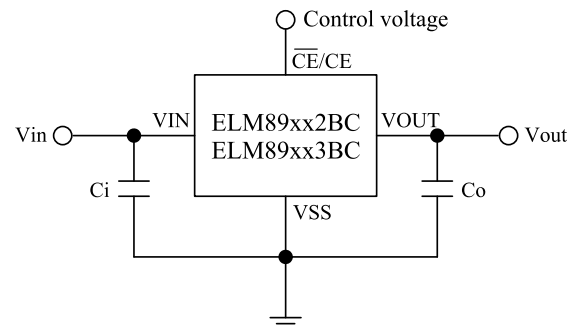
∗ Ci=1µF, Co=1µF or greater

■Block diagram

ELM89xx1BC
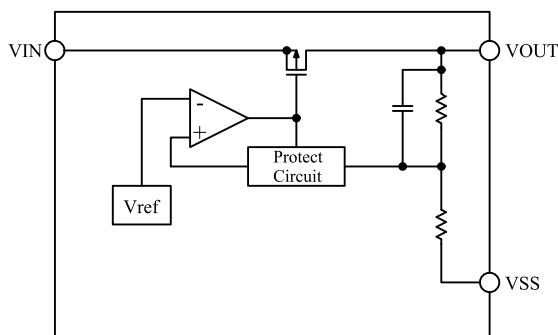
ELM89xx2BC: $\overline{\text{CE}}$, ELM89xx3BC: CE

ELM89xxxBC CMOS 300mA LDO Voltage regulator

■Electrical characteristics (ELM89xx1BC)

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

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=3.0V	300			mA
Input stability	ΔVout/ΔVin	Iout=40mA, 1.7V≤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°C≤Top≤+85°C, Iout=40mA, Vin=2.2V		±100		ppm/°C
Short circuit current	Ilim	Vout=0V			40	mA
Ripple rejection ratio	RR	f=1kHz, Iout=40mA		60		dB
Thermal shutdown temparature	Tsd			165		°C
Output noise	Vno	BW=10Hz to 100kHz		30		μVrms

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

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=3.0V	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°C≤Top≤+85°C, Iout=40mA, Vin=2.8V		±100		ppm/°C
Short circuit current	Ilim	Vout=0V			40	mA
Ripple rejection ratio	RR	f=1kHz, Iout=40mA		60		dB
Thermal shutdown temparature	Tsd			165		°C
Output noise	Vno	BW=10Hz to 100kHz		30		μVrms

Vout=2.5V(ELM89251BC), No CE pin   Top=25°C

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°C≤Top≤+85°C, Iout=40mA, Vin=3.5V		±100		ppm/°C
Short circuit current	Ilim	Vout=0V			40	mA
Ripple rejection ratio	RR	f=1kHz, Iout=40mA		60		dB
Thermal shutdown temparature	Tsd			165		°C
Output noise	Vno	BW=10Hz to 100kHz		30		μVrms

ELM89xxxBC CMOS 300mA LDO Voltage regulator

Vout=3.0V(ELM89301BC), No CE pin   Top=25°C

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°C≤Top≤+85°C, Iout=40mA, Vin=4.0V		±100		ppm/°C
Short circuit current	Ilim	Vout=0V		40		mA
Ripple rejection ratio	RR	f=1kHz, Iout=40mA		60		dB
Thermal shutdown temparature	Tsd			165		°C
Output noise	Vno	BW=10Hz to 100kHz		30		μVrms

Vout=3.3V(ELM89331BC), No CE pin   Top=25°C

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°C≤Top≤+85°C, Iout=40mA, Vin=4.3V		±100		ppm/°C
Short circuit current	Ilim	Vout=0V		40		mA
Ripple rejection ratio	RR	f=1kHz, Iout=40mA		60		dB
Thermal shutdown temparature	Tsd			165		°C
Output noise	Vno	BW=10Hz to 100kHz		30		μVrms

Vout=5.0V(ELM89501BC), No CE pin   Top=25°C

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°C≤Top≤+85°C, Iout=40mA, Vin=6.0V		±100		ppm/°C
Short circuit current	Ilim	Vout=0V		40		mA
Ripple rejection ratio	RR	f=1kHz, Iout=40mA		60		dB
Thermal shutdown temparature	Tsd			165		°C
Output noise	Vno	BW=10Hz to 100kHz		30		μVrms

ELM89xxxBC CMOS 300mA LDO Voltage regulator

■Electrical characteristics (ELM89xx2BC)

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

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=3.0V	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
$\overline{\text{CE}}$ input voltage High	Vceh	Vin=6.0V	1.8		Vin	V
$\overline{\text{CE}}$ input voltage Low	Vcel	Vin=1.4V	0.0		0.2	V
$\overline{\text{CE}}$ input current High	Iceh	Vce=Vin=6.0V	-0.2	0.0	0.2	μA
$\overline{\text{CE}}$ input current Low	Icel	Vce=Vss, Vin=6.0V	-0.2	0.0	0.2	
Output voltage temperature coefficient	ΔVout/ΔTop	-40°C≤Top≤+85°C, Iout=40mA, Vin=2.8V		±100		ppm/°C
Short circuit current	Ilim	Vout=0V		40		mA
Ripple rejection ratio	RR	f=1kHz, Iout=40mA		60		dB
Thermal shutdown temparature	Tsd			165		°C
Output noise	Vno	BW=10Hz to 100kHz		30		μVrms

■Electrical characteristics (ELM89xx3BC)

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

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=3.0V	300			mA
Input stability	ΔVout/ΔVin	Iout=40mA, 1.7V≤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°C≤Top≤+85°C, Iout=40mA, Vin=2.2V		±100		ppm/°C
Short circuit current	Ilim	Vout=0V		40		mA
Ripple rejection ratio	RR	f=1kHz, Iout=40mA		60		dB
Thermal shutdown temparature	Tsd			165		°C
Output noise	Vno	BW=10Hz to 100kHz		30		μVrms

ELM89xxxBC CMOS 300mA LDO Voltage regulator

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

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=3.0V	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°C≤Top≤+85°C, Iout=40mA, Vin=2.8V		±100		ppm/°C
Short circuit current	Ilim	Vout=0V		40		mA
Ripple rejection ratio	RR	f=1kHz, Iout=40mA		60		dB
Thermal shutdown temparature	Tsd			165		°C
Output noise	Vno	BW=10Hz to 100kHz		30		µVrms

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

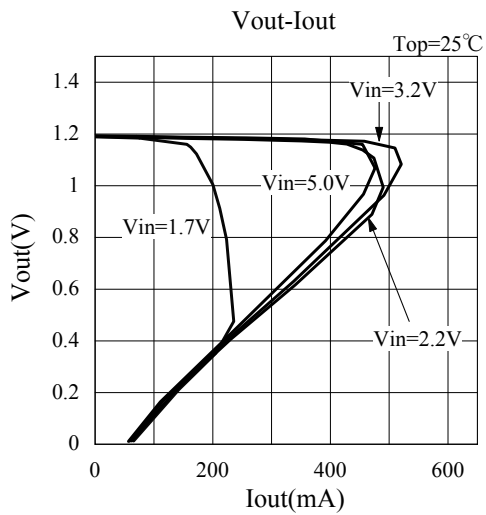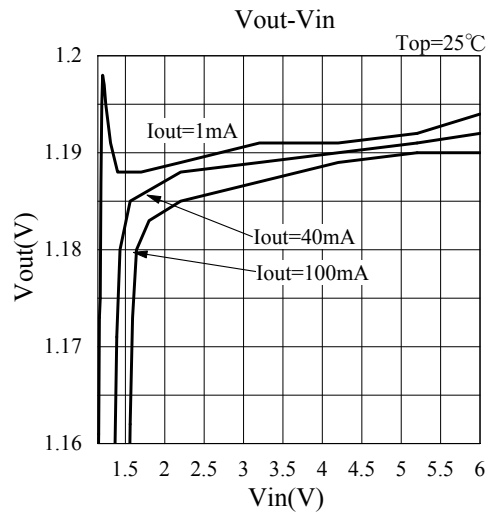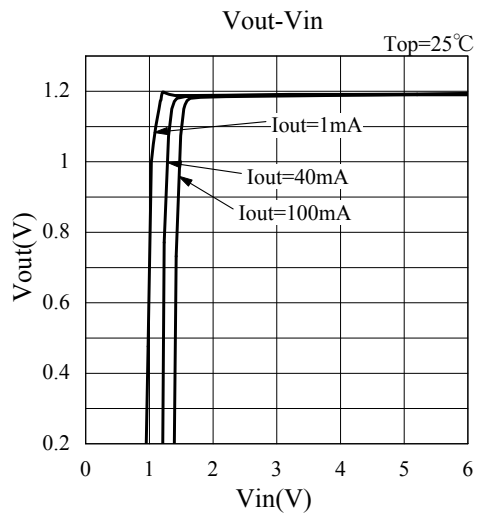| Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Output voltage	Vout	Vin=3.5V, Iout=40mA	2.450	2.500	2.550	V
Output current	Iout	Vin=3.5V	300			mA
Input stability	ΔVout/ΔVin	Iout=40mA, 3.0V≤Vin≤6.0V		0.02	0.20	%/V
Load stability	ΔVout/ΔIout	1mA≤Iout≤100mA, Vin=3.5V		5	20	mV
Input-Output voltage differential	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°C≤Top≤+85°C, Iout=40mA, Vin=3.5V		±100		ppm/°C
Short circuit current	Ilim	Vout=0V		40		mA
Ripple rejection ratio	RR	f=1kHz, Iout=40mA		60		dB
Thermal shutdown temparature	Tsd			165		°C
Output noise	Vno	BW=10Hz to 100kHz		30		µVrms

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

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°C≤Top≤+85°C, Iout=40mA, Vin=4.0V		±100		ppm/°C
Short circuit current	Ilim	Vout=0V		40		mA
Ripple rejection ratio	RR	f=1kHz, Iout=40mA		60		dB
Thermal shutdown temparature	Tsd			165		°C
Output noise	Vno	BW=10Hz to 100kHz		30		μVrms

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

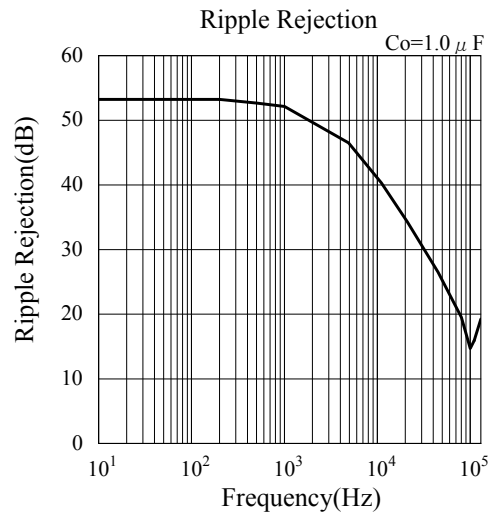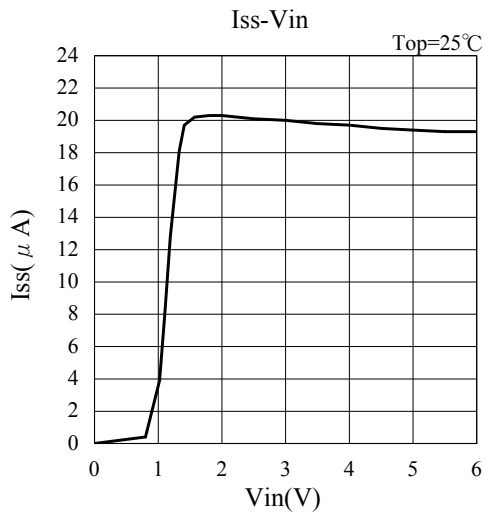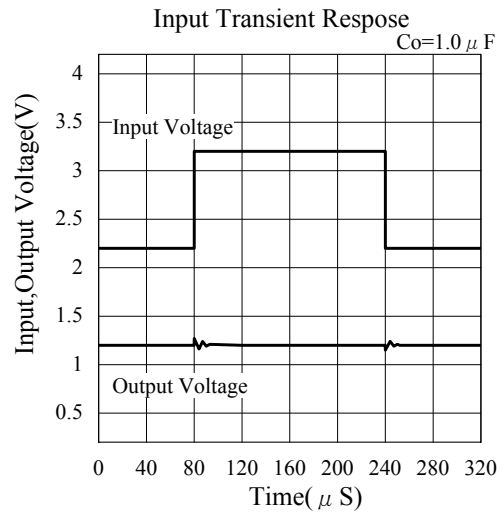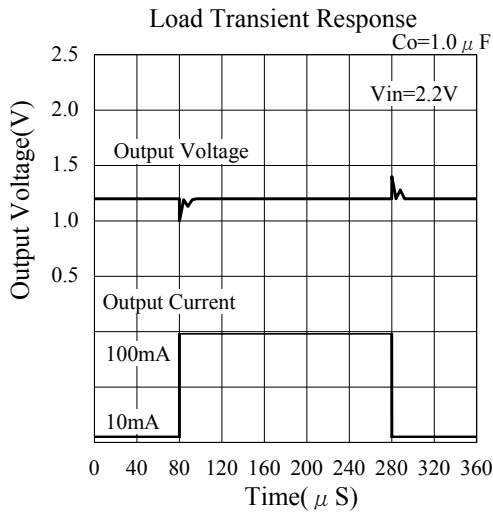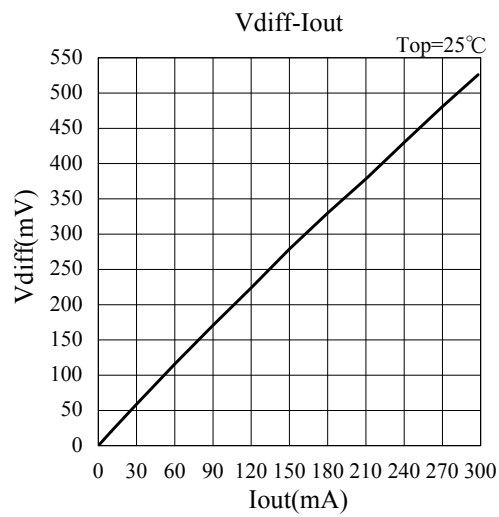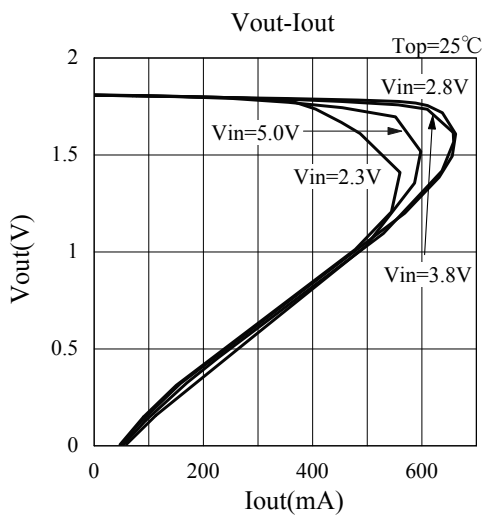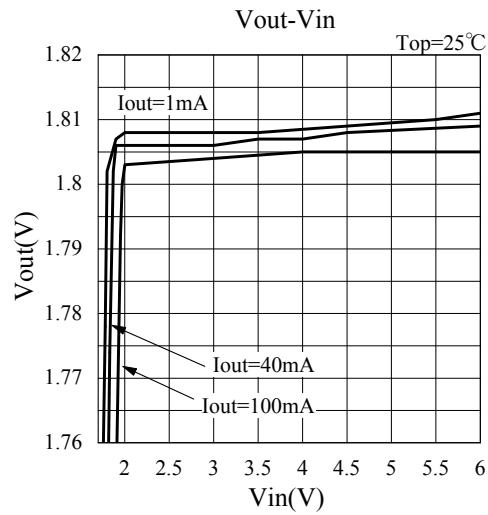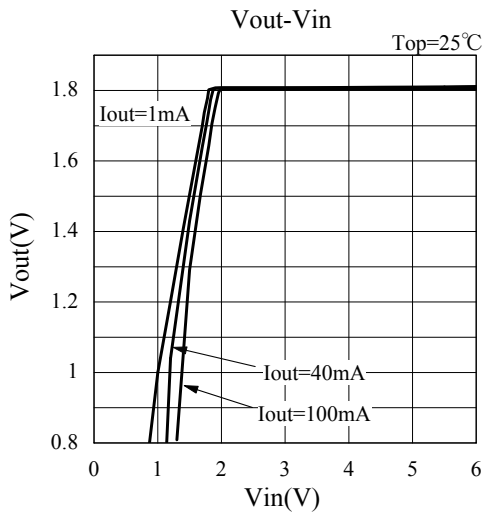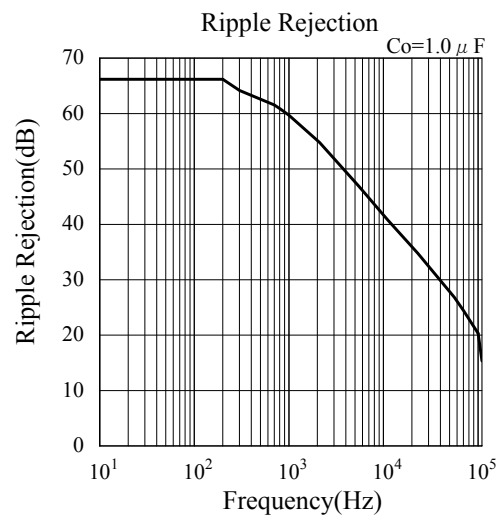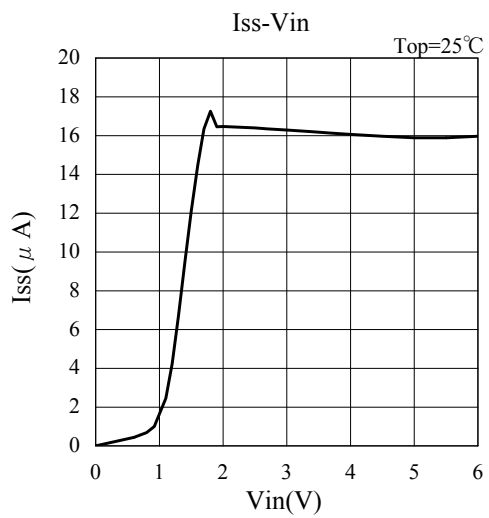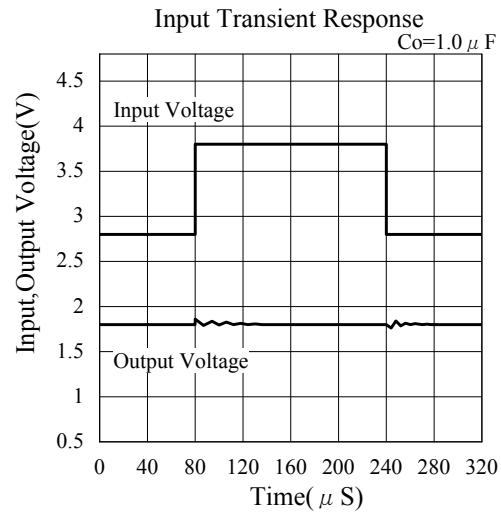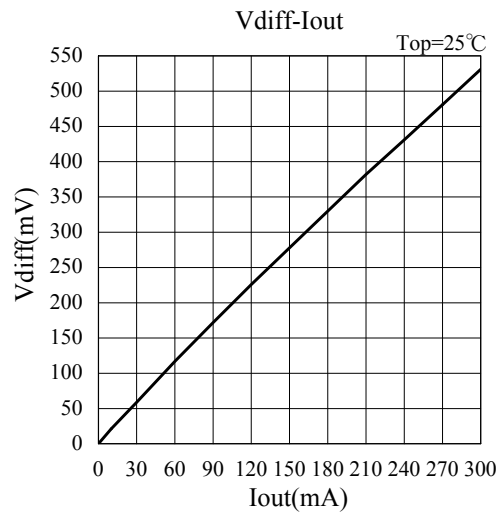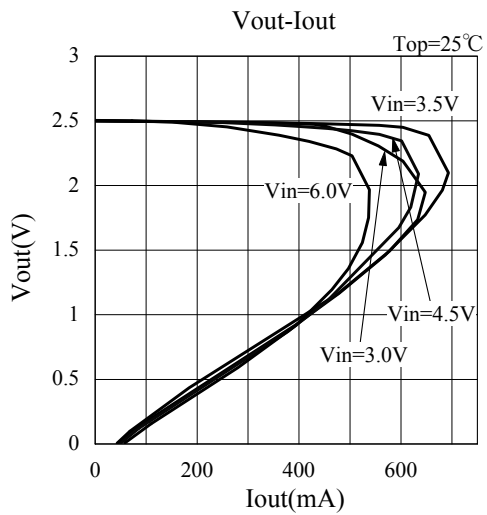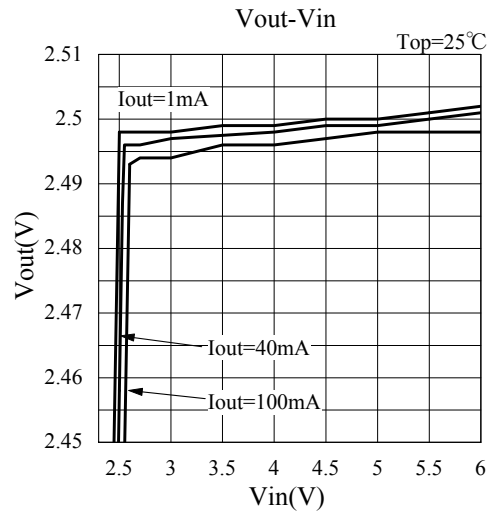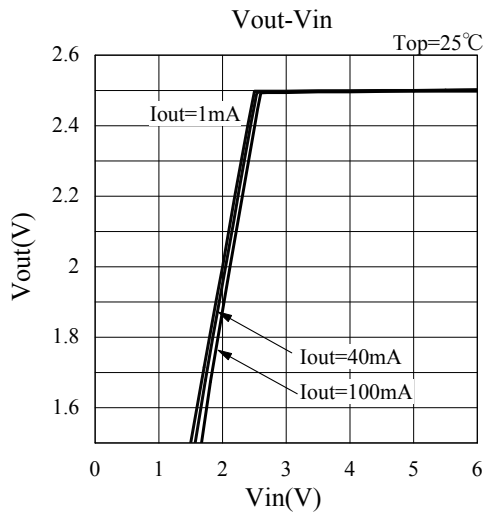| Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Output voltage	Vout	Vin=4.3V, Iout=40mA	3.234	3.300	3.366	V
Output current	Iout	Vin=4.3V	300			mA
Input stability	ΔVout/ΔVin	Iout=40mA, 3.8V≤Vin≤6.0V		0.02	0.20	%/V
Load stability	ΔVout/ΔIout	1mA≤Iout≤100mA, Vin=4.3V		5	20	mV
Input-Output voltage differential	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°C≤Top≤+85°C, Iout=40mA, Vin=4.3V		±100		ppm/°C
Short circuit current	Ilim	Vout=0V		40		mA
Ripple rejection ratio	RR	f=1kHz, Iout=40mA		60		dB
Thermal shutdown temparature	Tsd			165		°C
Output noise	Vno	BW=10Hz to 100kHz		30		μVrms

ELM89xxxBC CMOS 300mA LDO Voltage regulator

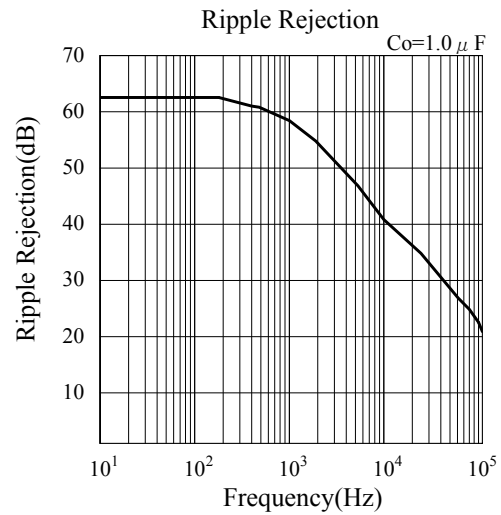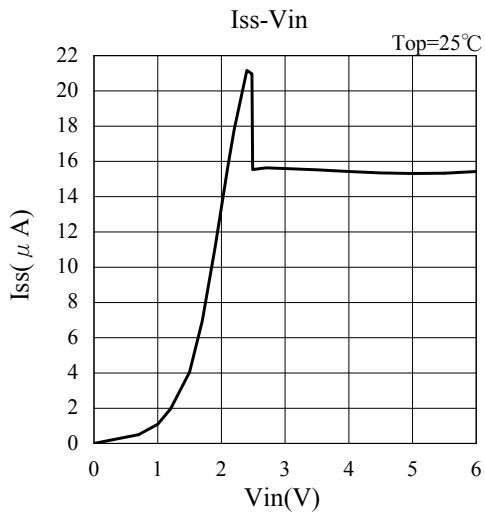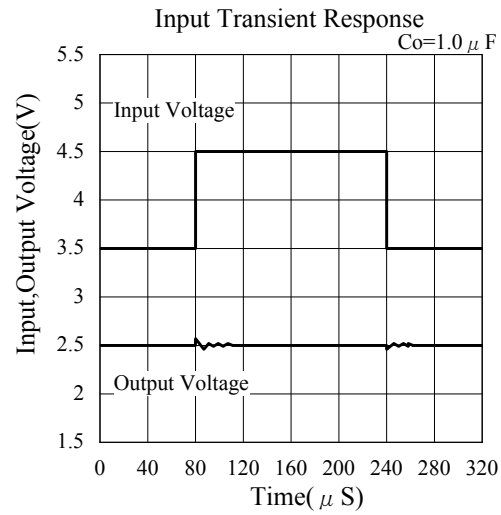Vout=5.0V(ELM89503BC), CE="H"active   Top=25°C

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°C≤Top≤+85°C, Iout=40mA, Vin=6.0V		±100		ppm/°C
Short circuit current	Ilim	Vout=0V		40		mA
Ripple rejection ratio	RR	f=1kHz, Iout=40mA		60		dB
Thermal shutdown temparature	Tsd			165		°C
Output noise	Vno	BW=10Hz to 100kHz		30		μVrms

■Marking

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

SOT-23   SOT-25

a b c d   a b c d
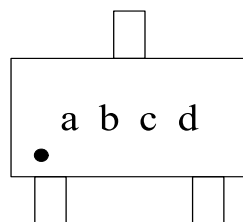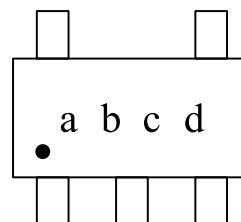
a to d : Assembly lot No.——
        A to Z (I, O, X excepted) and 0 to 9

ELM89xxxBC CMOS 300mA LDO Voltage regulator

■Typical characteristics
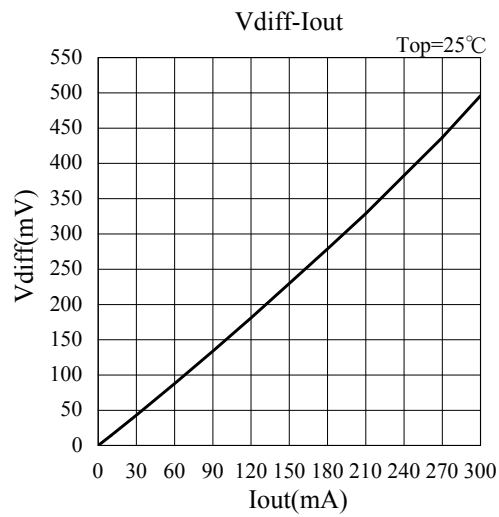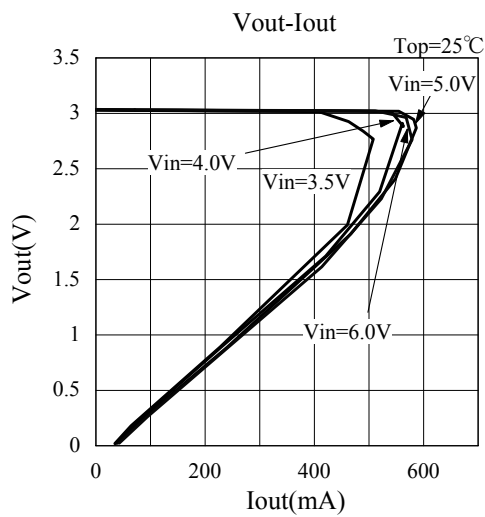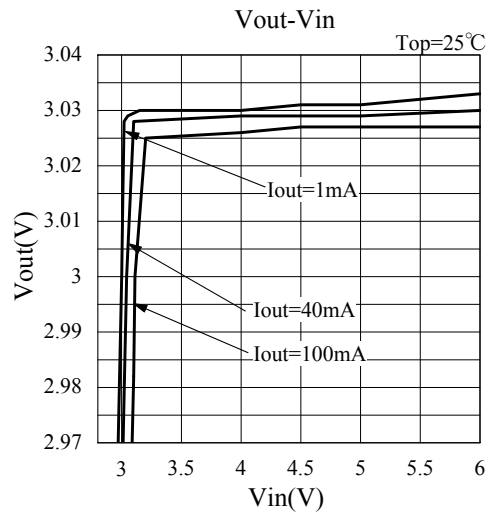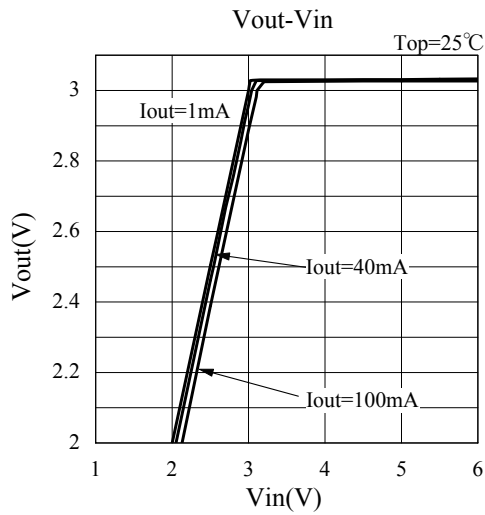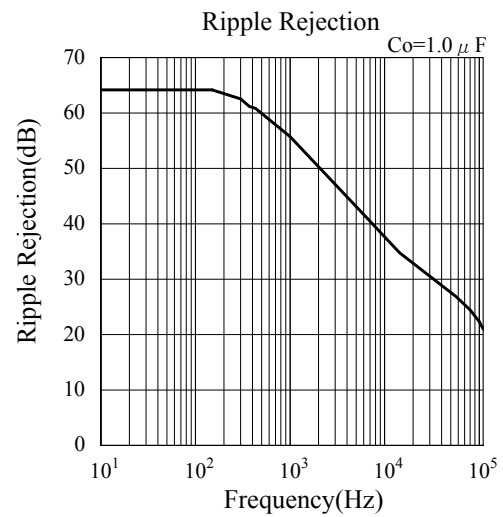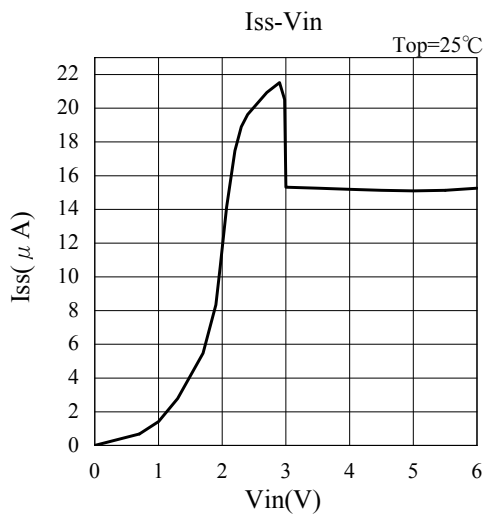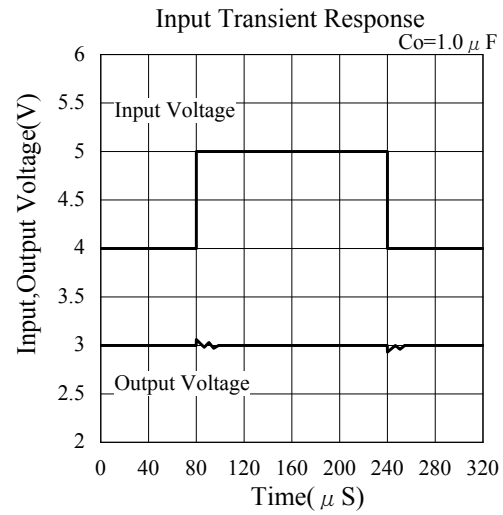
- 1.2V Vout unit (ELM8912xBC)
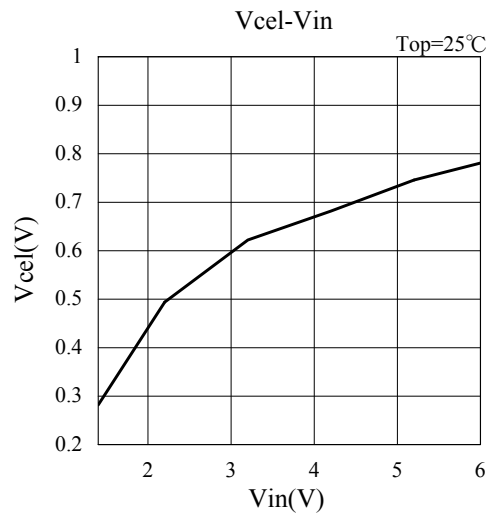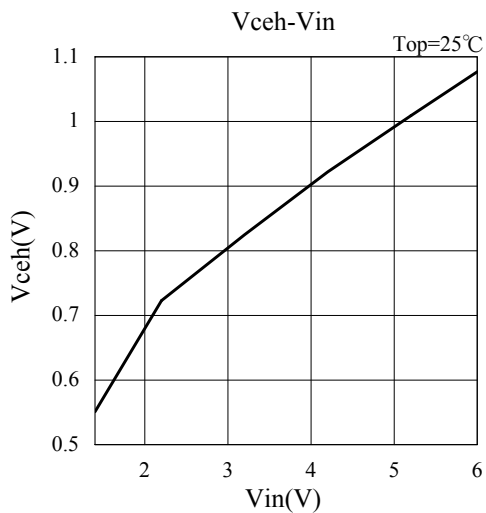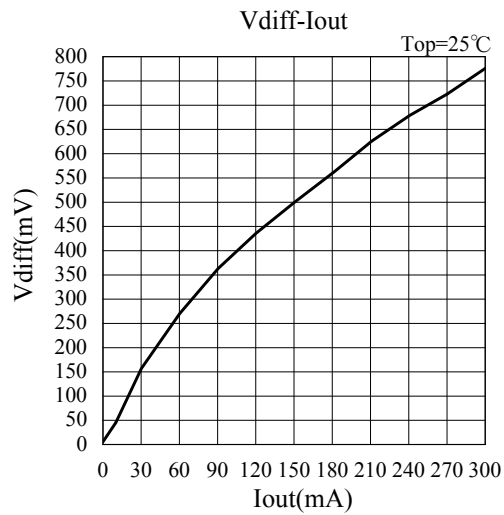
Vout-Vin

Vout-Vin

Vout-Iout

Vdiff-Iout

Vceh-Vin

Vcel-Vin

Load Transient Response

Co=1.0 μ F

Vin=2.2V

Output Voltage

Output Current

100mA

10mA

Output Voltage(V): 2.5, 2.0, 1.5, 1.0, 0.5

Time(μ S): 0 40 80 120 160 200 240 280 320 360

Input Transient Respose

Co=1.0 μ F

Input Voltage

Output Voltage

Input,Output Voltage(V): 4, 3.5, 3, 2.5, 2, 1.5, 1, 0.5

Time(μ S): 0 40 80 120 160 200 240 280 320

Iss-Vin

Top=25℃

Iss(μ A): 24 22 20 18 16 14 12 10 8 6 4 2 0

Vin(V): 0 1 2 3 4 5 6

Ripple Rejection

Co=1.0 μ F

Ripple Rejection(dB): 60 50 40 30 20 10 0

Frequency(Hz): 10^1 10^2 10^3 10^4 10^5

• 1.8V Vout unit (ELM8918xBC)

Vout-Vin Top=25℃

Iout=1mA

Iout=40mA
Iout=100mA

Vout-Vin Top=25℃

Iout=1mA

Iout=40mA
Iout=100mA

Vout-Iout Top=25℃

Vin=2.8V
Vin=5.0V
Vin=2.3V
Vin=3.8V

Vdiff-Iout Top=25℃

Vceh-Vin Top=25℃

Vcel-Vin Top=25℃

Load Transient Response

Co=1.0 μF

Vin=2.8V

Output Voltage

Output Current

100mA

10mA

Output Voltage(V): 3.0, 2.5, 2.0, 1.5, 1.0

Time(μS): 0, 40, 80, 120, 160, 200, 240, 280, 320, 360

Input Transient Response

Co=1.0 μF

Input Voltage

Output Voltage

Input,Output Voltage(V): 4.5, 4, 3.5, 3, 2.5, 2, 1.5, 1, 0.5

Time(μS): 0, 40, 80, 120, 160, 200, 240, 280, 320

Iss-Vin

Top=25℃

Iss(μA): 20, 18, 16, 14, 12, 10, 8, 6, 4, 2, 0

Vin(V): 0, 1, 2, 3, 4, 5, 6

Ripple Rejection

Co=1.0 μF

Ripple Rejection(dB): 70, 60, 50, 40, 30, 20, 10, 0

Frequency(Hz): 10^1, 10^2, 10^3, 10^4, 10^5

• 2.5V Vout unit (ELM8925xBC)
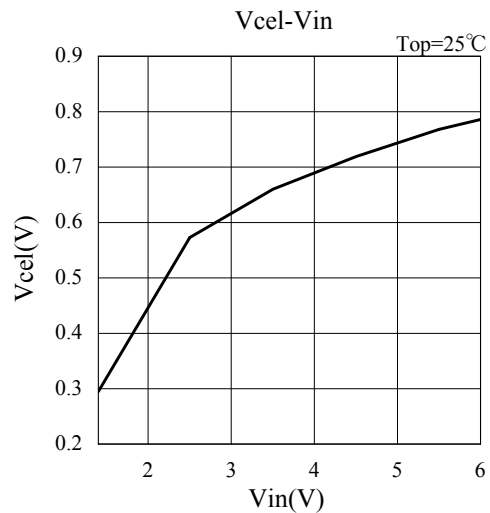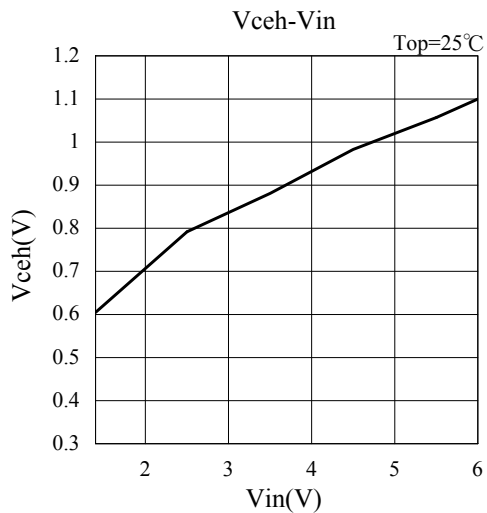
Vout-Vin
Top=25℃

Iout=1mA

Iout=40mA
Iout=100mA

Vout-Vin
Top=25℃

Iout=1mA

Iout=40mA
Iout=100mA

Vout-Iout
Top=25℃

Vin=3.5V

Vin=6.0V

Vin=4.5V

Vin=3.0V

Vdiff-Iout
Top=25℃

Vceh-Vin
Top=25℃

Vcel-Vin
Top=25℃

Load Transient Response

Co=1.0 μF

Vin=3.5V

Output Voltage(V)

Output Voltage

Output Current

100mA

10mA

Time(μ S)

Input Transient Response

Co=1.0 μF

Input,Output Voltage(V)

Input Voltage

Output Voltage

Time(μ S)

Iss-Vin

Top=25℃

Iss(μ A)

Vin(V)

Ripple Rejection

Co=1.0 μF

Ripple Rejection(dB)

Frequency(Hz)
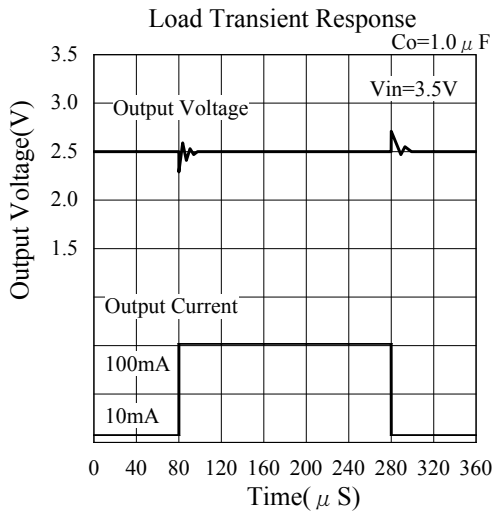
• 3.0V Vout unit (ELM8930xBC)
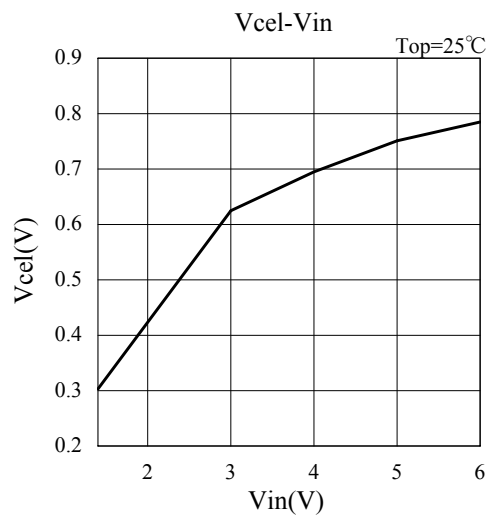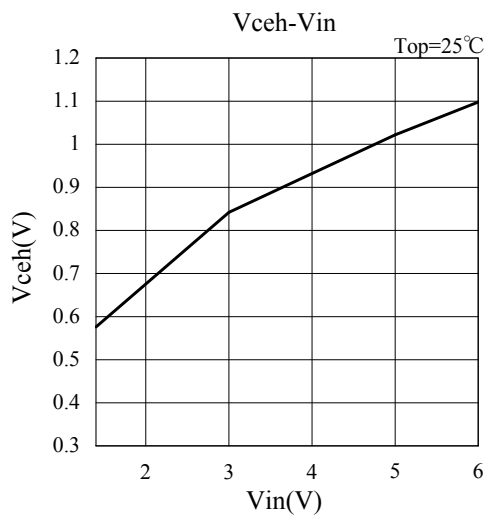
Vout-Vin Top=25℃

Vout-Vin Top=25℃

Vout-Iout Top=25℃

Vdiff-Iout Top=25℃

Vceh-Vin Top=25℃

Vcel-Vin Top=25℃

Load Transient Response

Co=1.0 μF

Vin=4.0V

Output Voltage

Output Current

100mA

10mA

Output Voltage(V): 2.0, 2.5, 3.0, 3.5, 4.0

Time(μS): 0, 40, 80, 120, 160, 200, 240, 280, 320, 360

Input Transient Response

Co=1.0 μF

Input Voltage

Output Voltage

Input,Output Voltage(V): 2, 2.5, 3, 3.5, 4, 4.5, 5, 5.5, 6

Time(μS): 0, 40, 80, 120, 160, 200, 240, 280, 320

Iss-Vin

Top=25℃

Iss(μA): 0, 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22

Vin(V): 0, 1, 2, 3, 4, 5, 6

Ripple Rejection

Co=1.0 μF

Ripple Rejection(dB): 0, 10, 20, 30, 40, 50, 60, 70

Frequency(Hz): 10^1, 10^2, 10^3, 10^4, 10^5

ELM TECHNOLOGY
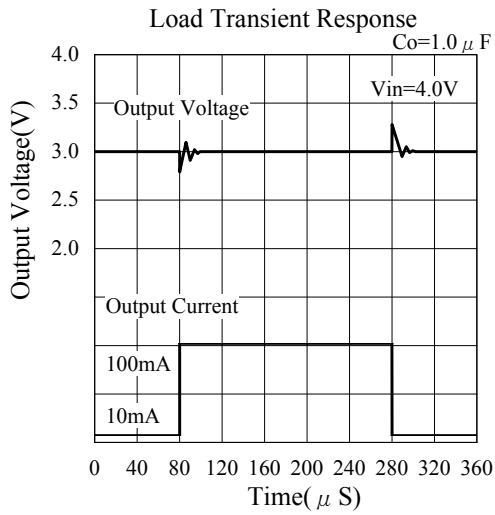
• 3.3V Vout unit (ELM8933xBC)
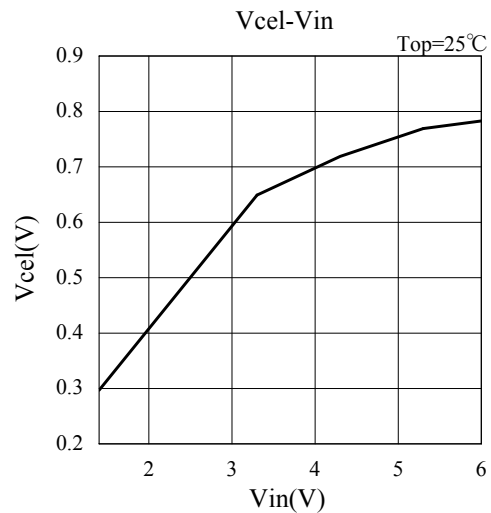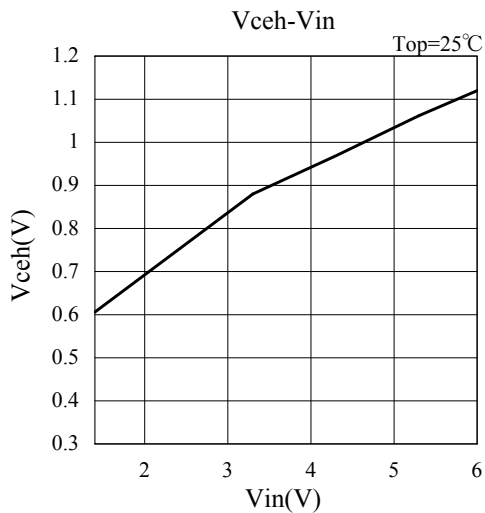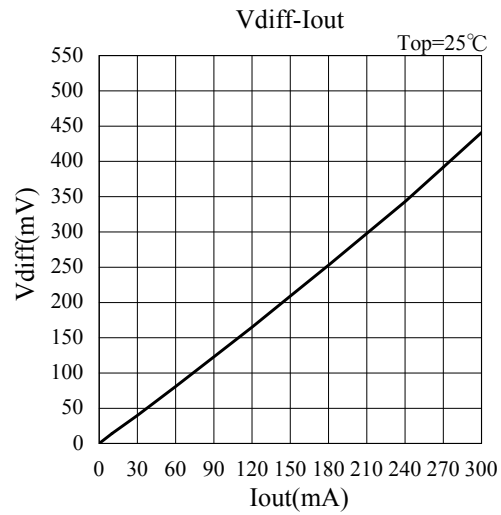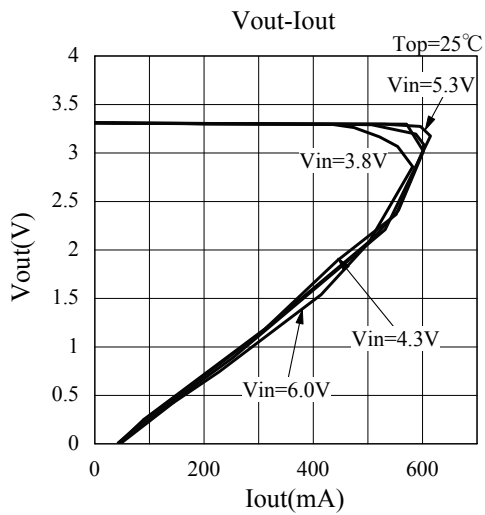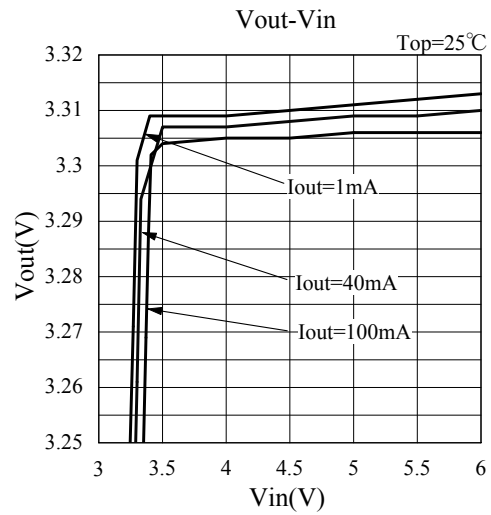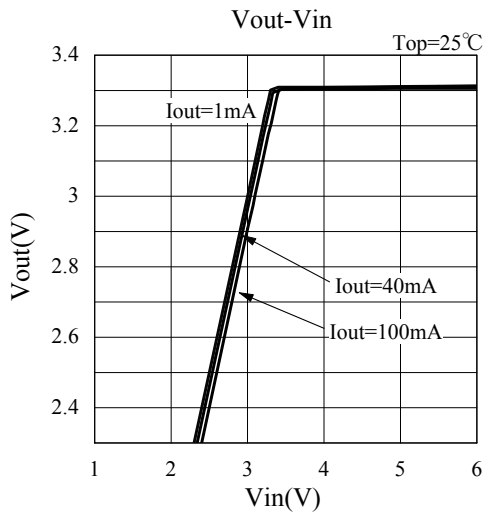
Load Transient Response
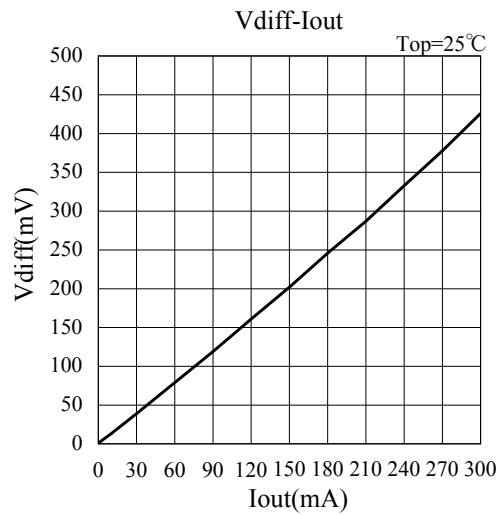

Input Transient Response

Iss-Vin

Ripple Rejection
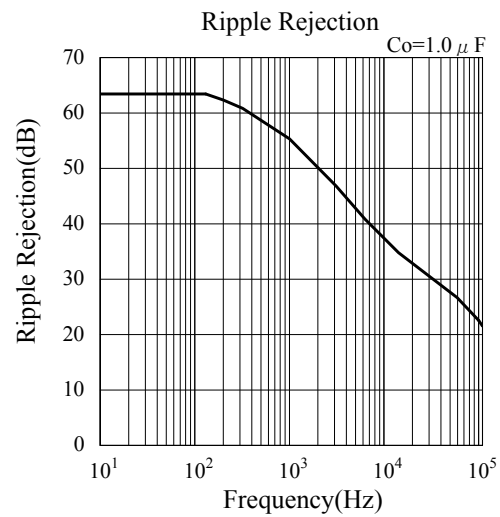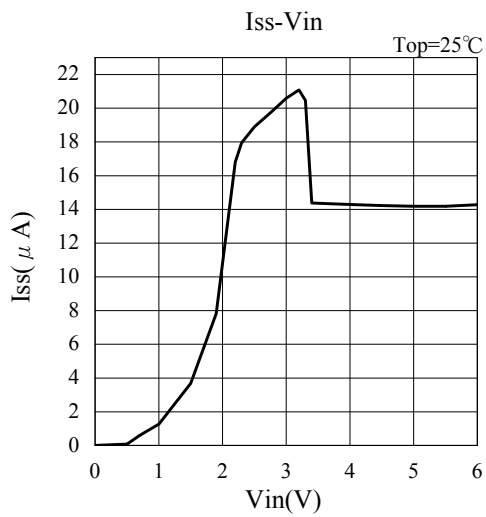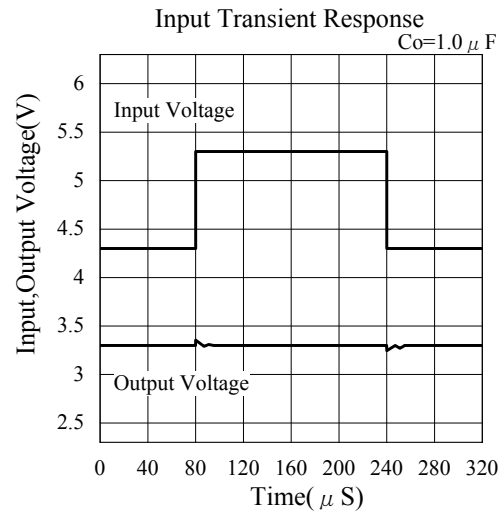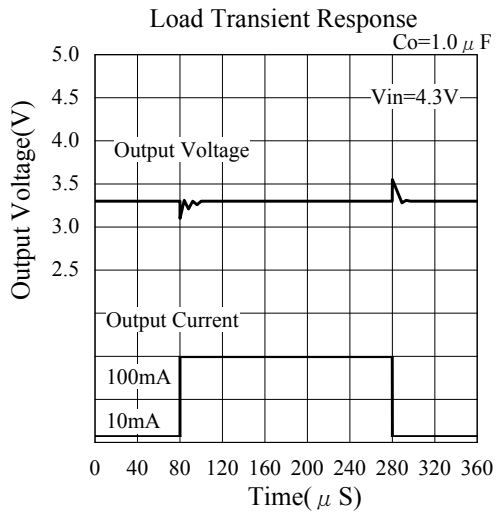
ELM89xxxBC CMOS 300mA LDO Voltage regulator

• 5.0V Vout unit (ELM8950xBC)

Vout-Vin   Top=25℃

Vout-Vin   Top=25℃

Vout-Iout   Top=25℃

Vdiff-Iout   Top=25℃

Vceh-Vin   Top=25℃

Vcel-Vin   Top=25℃

ELM89xxxBC CMOS 300mA LDO Voltage regulator

Load Transient Response

Co=1.0μF

Input Transient Response

Co=1.0μF

Iss-Vin

Top=25℃

Ripple Rejection

Co=1.0μF