

# ELM89xxxBC CMOS 300mA LDO Voltage regulator

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## ■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. ELM89 series can be designed as semi-custom IC within the range of 0.8V to 5.0V by 0.1V step; The standard output voltages are 0.8V, 1.2V, 1.8V, 2.5V, 3.0V, 3.3V, 5.0V.

## ■Features

- Output voltage range : 0.8V to 5.0V (by 0.1V)
- Output current : Min.300mA
- Stand by current consumption : Typ.0.1 $\mu$ A
- Input stability : Typ.0.02%/V(Iout=40mA)
- Load stability : Typ.5mV(1mA $\leq$ Iout $\leq$ 100mA)
- Accuracy of output voltage :  $\pm 2.0\%$ (Vout>1.5V),  $\pm 30mV$ (Vout $\leq$ 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
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 (Ta=25°C)	Pd	SOT-23	250 (*1) 500 (*2)	SOT-25	250 (*1) 600 (*2)	mW
Operation Temperature	Top	-40 to +85				°C
Storage Temperature	Tstg	-55 to +125				°C

\* 1. No mounted, IC alone.

\* 2. When mounted on glass epoxy 2-layers PCB (EIJ/JEDEC standard size: 76.2 mm×114.3 mm×1.6 mm), Cu thickness 35  $\mu$ m, copper foil area ratio 20% on the front side, back side 100% .

## ■Selection guide

ELM89xxxBC-x

Symbol		
a, b	Output voltage	e.g. : 08: Vout=0.8V    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

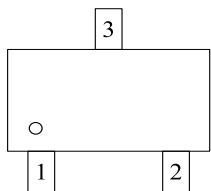
ELM89 x x x B C - x  
↑ ↑ ↑ ↑ ↑ ↑  
a b c d e f

# ELM89xxxBC CMOS 300mA LDO Voltage regulator

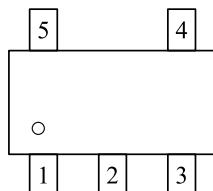
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## ■Pin configuration

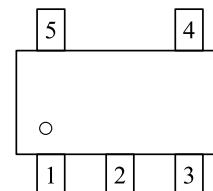
SOT-23(TOP VIEW)



SOT-25(TOP VIEW)



SOT-25(TOP VIEW)



ELM89xx1BC

Pin No.	Pin name
1	VIN
2	VOUT
3	VSS

ELM89xx2BC

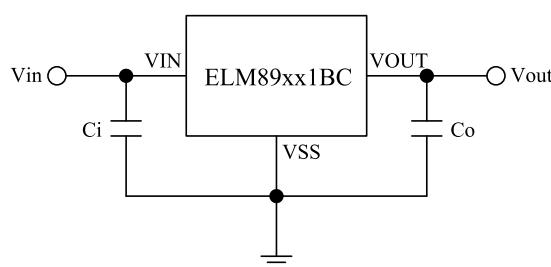
Pin No.	Pin name
1	VIN
2	VSS
3	$\overline{CE}$
4	NC
5	VOUT

ELM89xx3BC

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

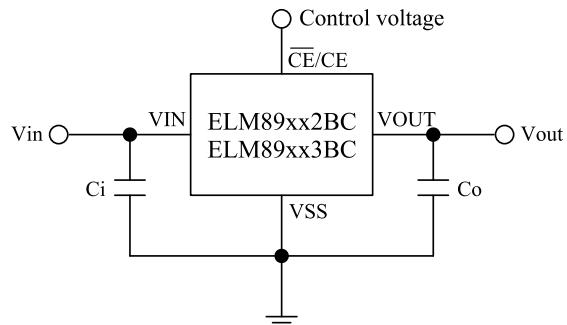
## ■Standard circuit

ELM89xx1BC



\*  $C_i = 1\mu F$ ,  $C_o = 1\mu F$  or greater

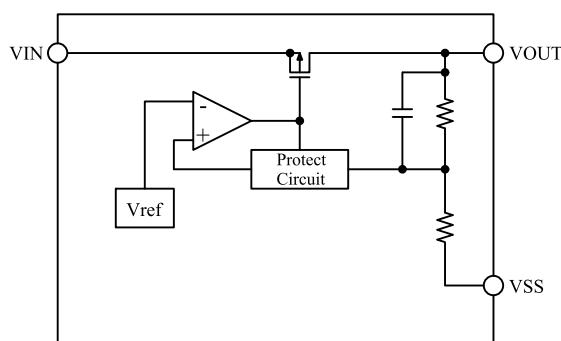
ELM89xx2BC:  $\overline{CE}$ , ELM89xx3BC: CE



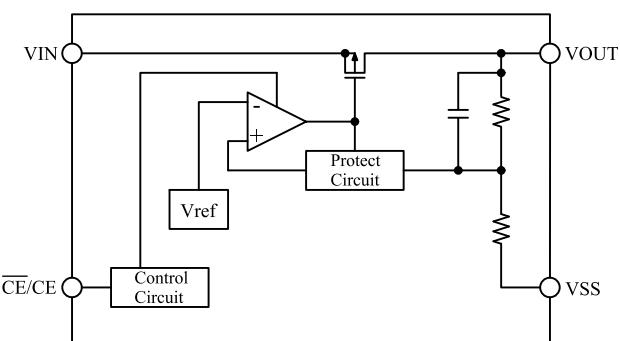
\*  $C_i = 1\mu F$ ,  $C_o = 1\mu F$  or greater

## ■Block diagram

ELM89xx1BC



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



# ELM89xxxBC CMOS 300mA LDO Voltage regulator

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## ■Electrical characteristics (ELM89xx1BC)

Vout=0.8V(ELM89081BC), No CE pin

Top=25°C

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Output voltage	Vout	Vin=1.8V, Iout=40mA	0.770	0.800	0.830	V
Output current	Iout	Vin=3.0V	300			mA
Input stability	ΔVout/ΔVin	Iout=10mA, 1.4V≤Vin≤6.0V		0.05	0.20	%/V
Load stability	ΔVout/ΔIout	1mA≤Iout≤100mA, Vin=1.8V		5	20	mV
Input-Output voltage differential	Vdif	Iout=100mA		620	1000	mV
Current consumption	Iss	Vin=1.8V, 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=1.8V		±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=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

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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

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

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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

## ■Electrical characteristics (ELM89xx2BC)

Vout=1.8V(ELM89182BC), 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
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	Icei	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

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## ■Electrical characteristics (ELM89xx3BC)

Vout=0.8V(ELM89083BC), CE="H"active

Top=25°C

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Output voltage	Vout	Vin=1.8V, Iout=40mA	0.770	0.800	0.830	V
Output current	Iout	Vin=3.0V	300			mA
Input stability	ΔVout/ΔVin	Iout=10mA, 1.4V≤Vin≤6.0V		0.05	0.20	%/V
Load stability	ΔVout/ΔIout	1mA≤Iout≤100mA, Vin=1.8V		5	20	mV
Input-Output voltage differential	Vdif	Iout=100mA		620	1000	mV
Current consumption	Iss	Vin=1.8V, No-load		15	50	μA
Stand-by current consumption	Istandby	Vin=1.8V, 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=1.8V		±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=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

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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

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

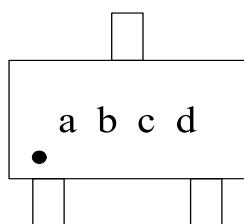
Top=25°C

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

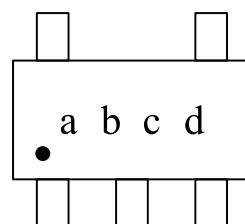
## ■Marking

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

SOT-23



SOT-25



a to d : Assembly lot No.\_\_\_\_\_

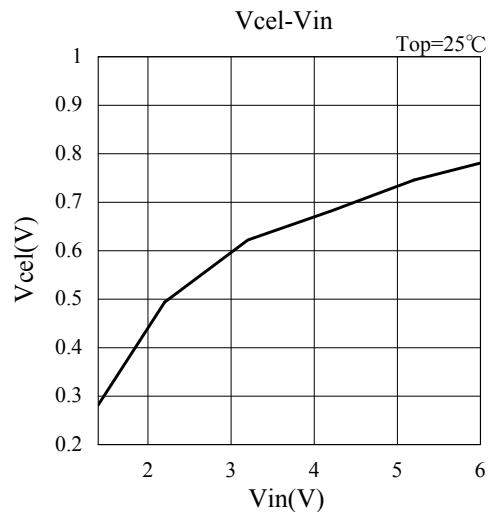
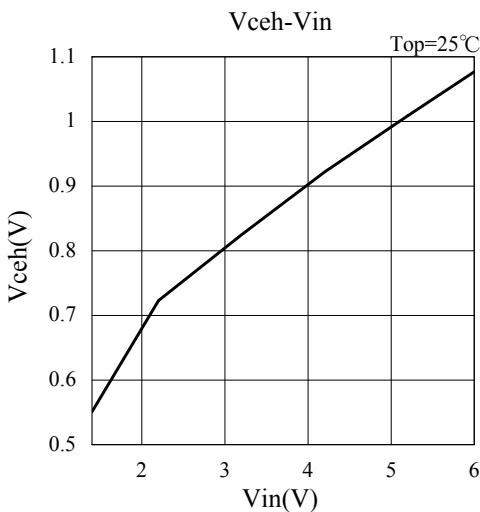
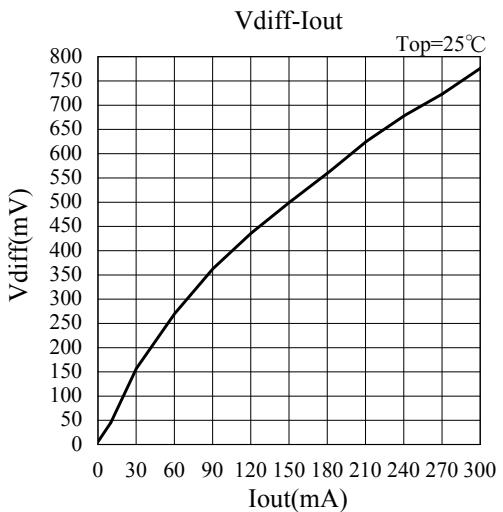
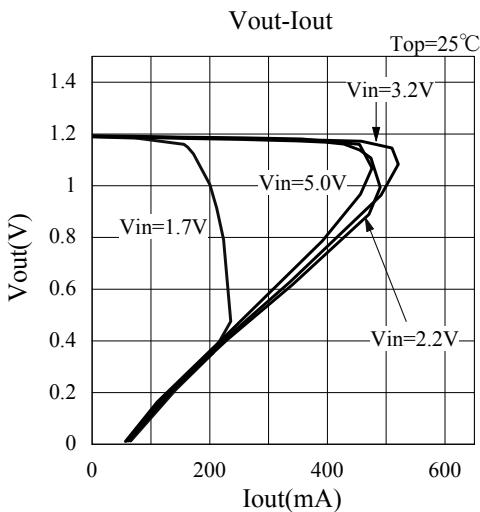
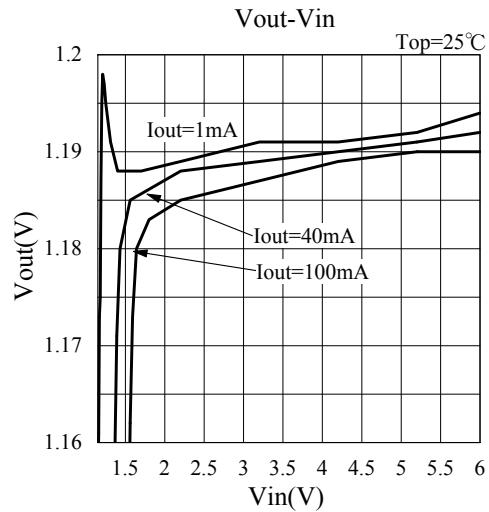
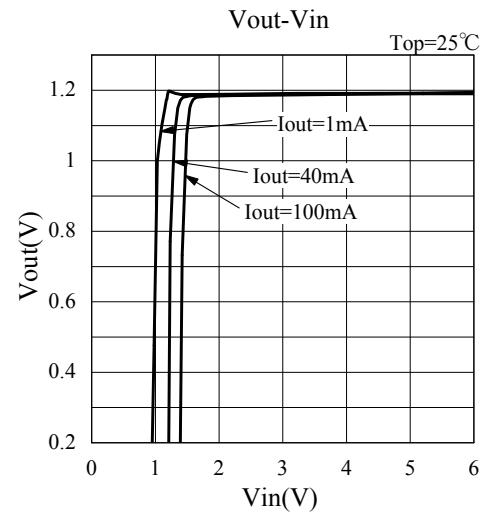
A to Z (I, O, X excepted) and 0 to 9

# ELM89xxxBC CMOS 300mA LDO Voltage regulator

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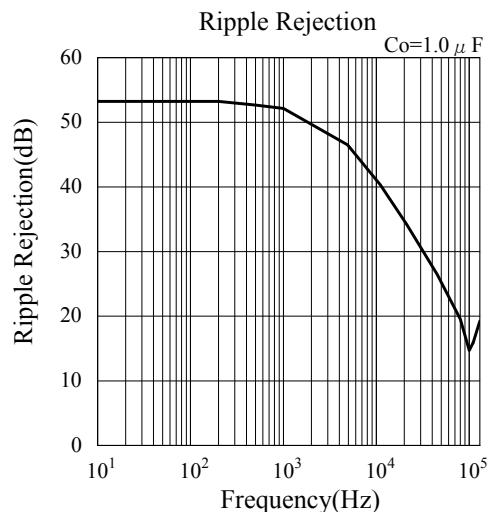
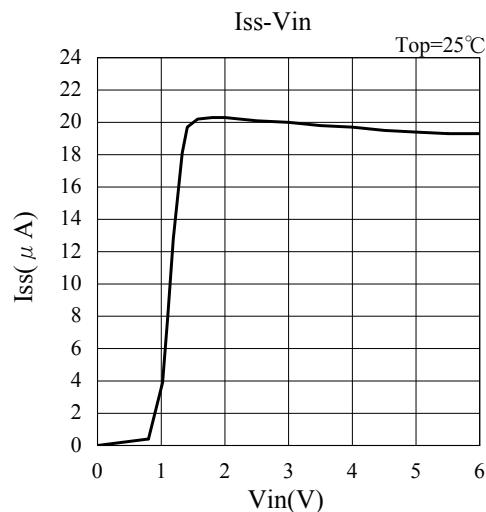
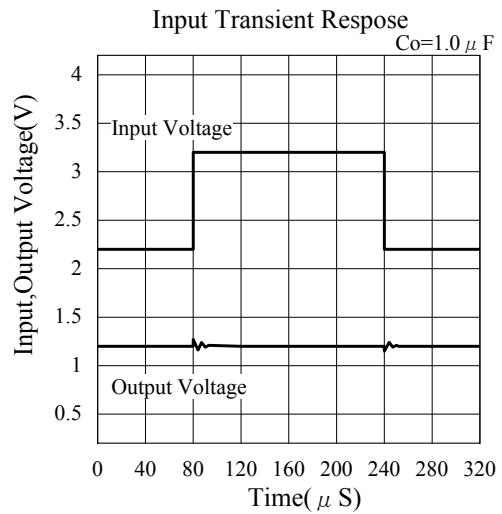
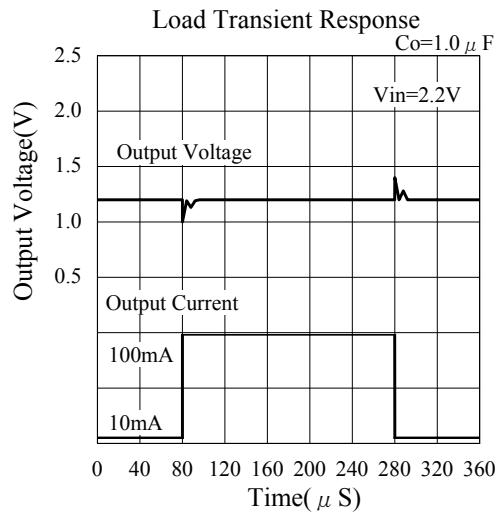
## ■Typical characteristics

- 1.2V Vout unit (ELM8912xBC)



# ELM89xxxBC CMOS 300mA LDO Voltage regulator

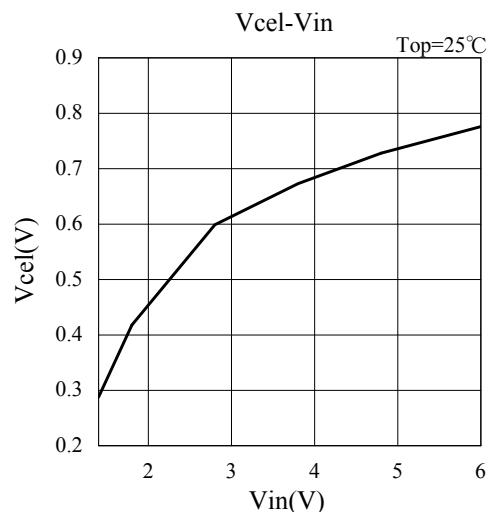
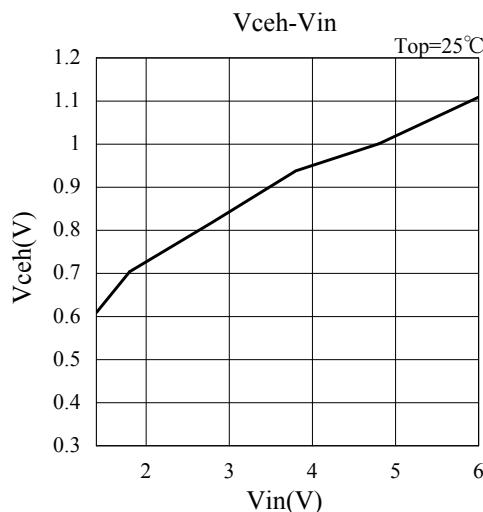
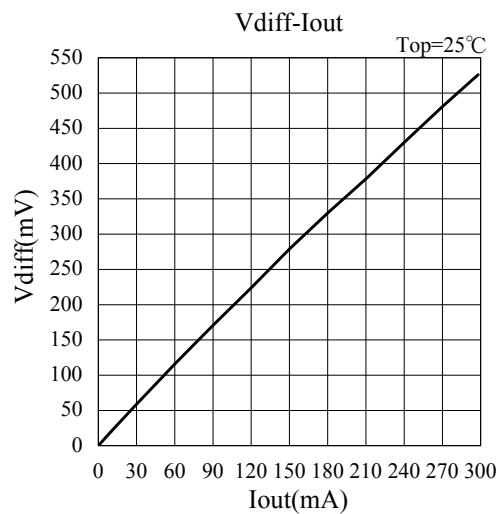
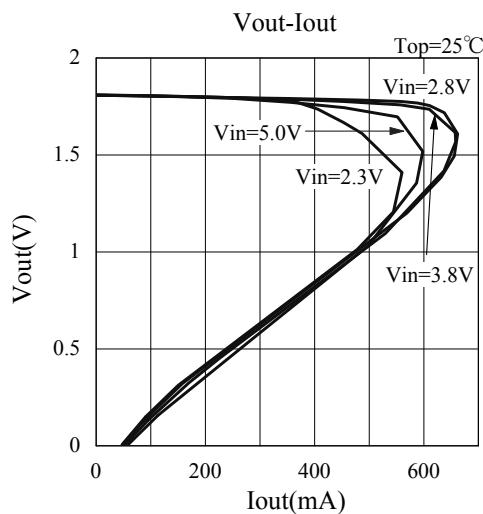
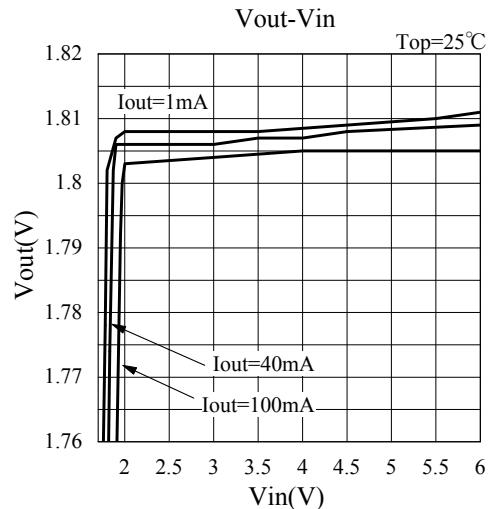
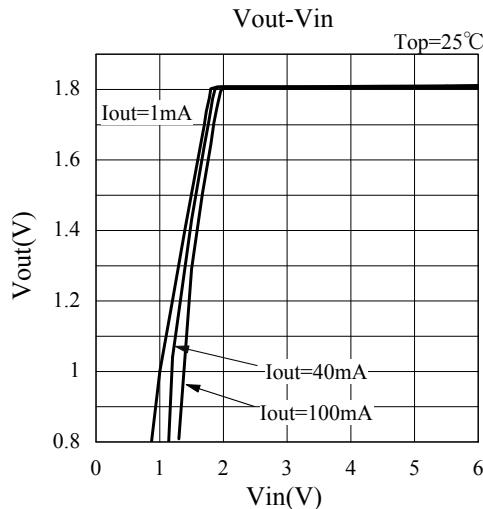
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# ELM89xxxBC CMOS 300mA LDO Voltage regulator

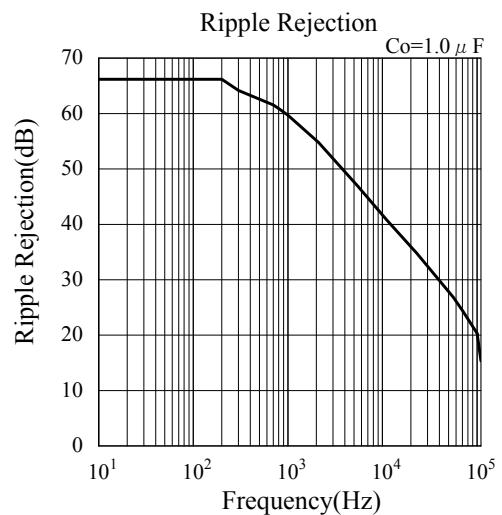
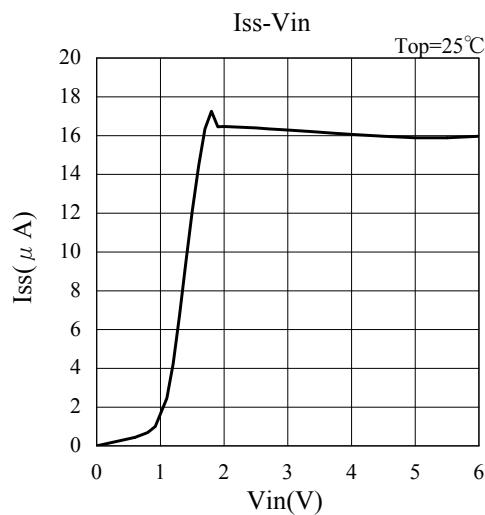
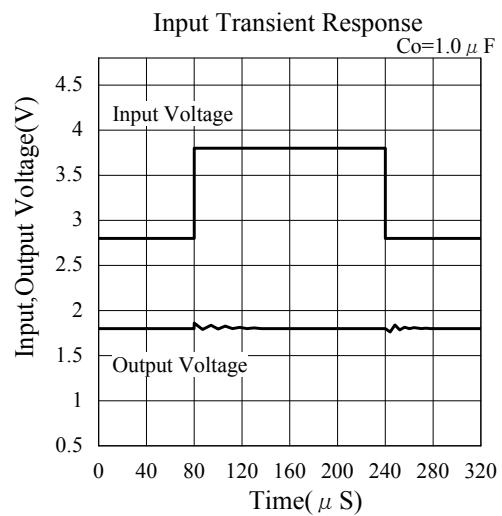
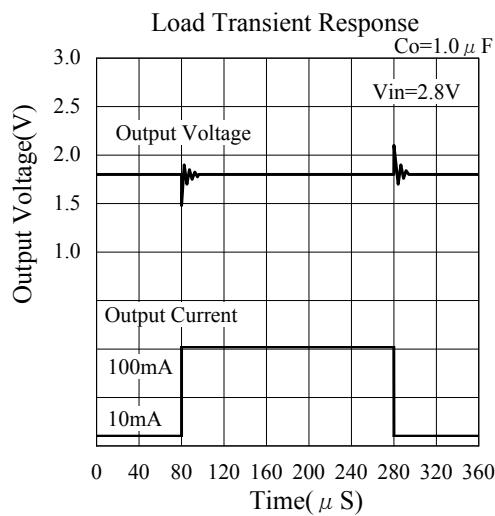
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- 1.8V Vout unit (ELM8918xBC)



# ELM89xxxBC CMOS 300mA LDO Voltage regulator

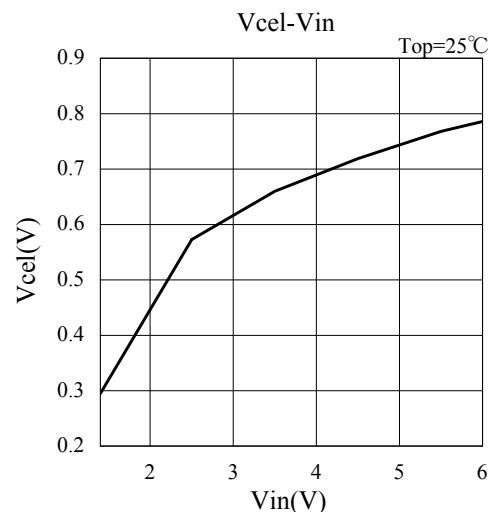
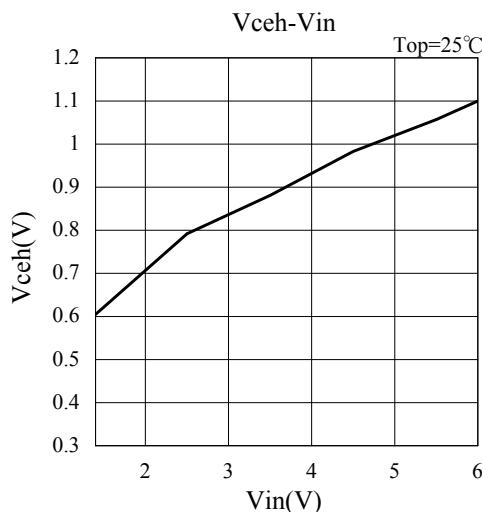
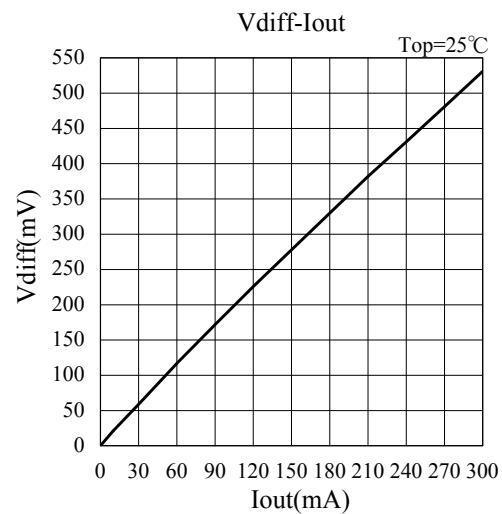
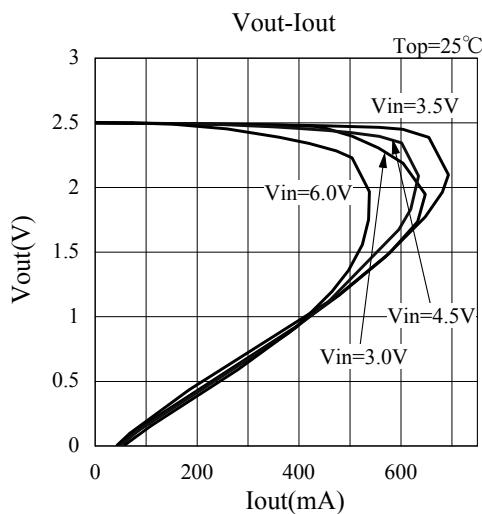
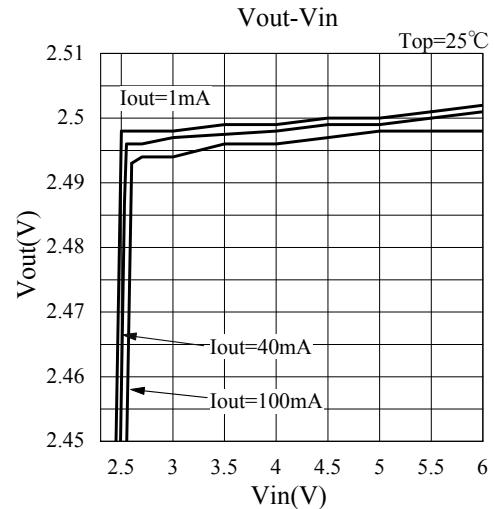
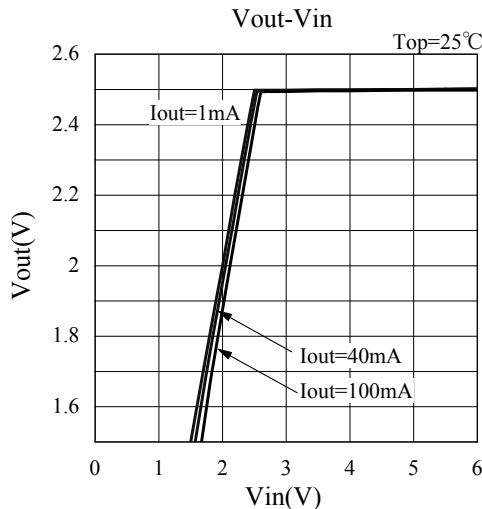
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# ELM89xxxBC CMOS 300mA LDO Voltage regulator

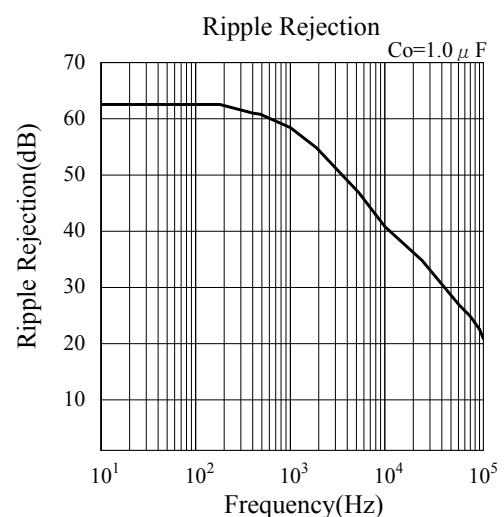
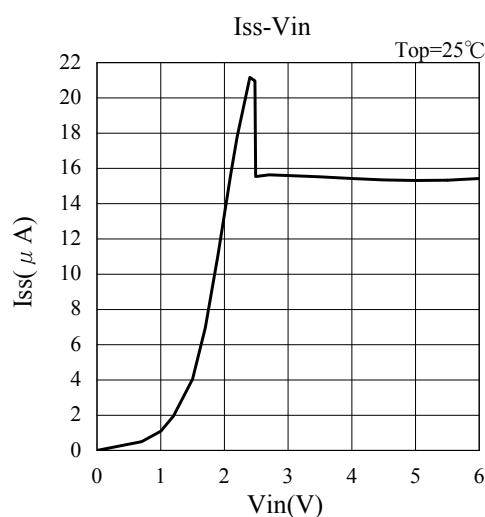
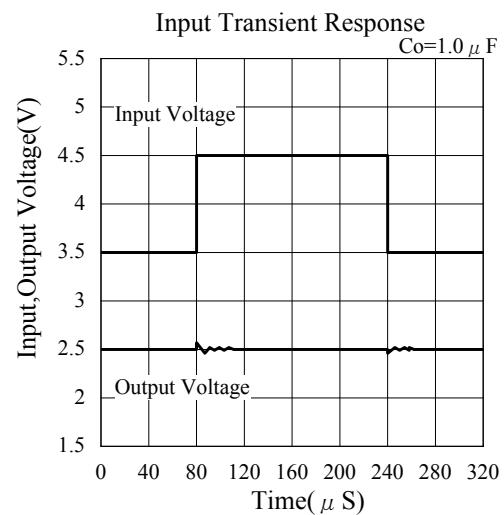
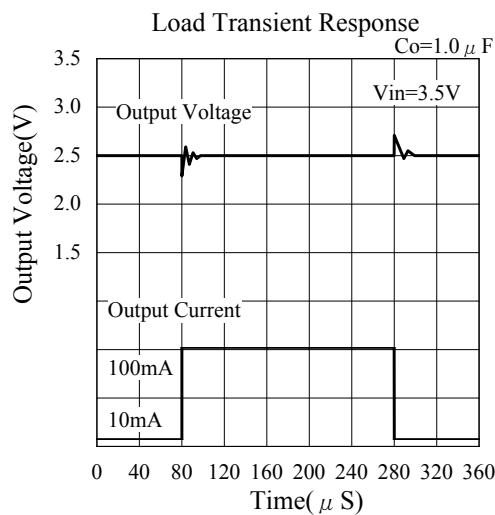
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- 2.5V Vout unit (ELM8925xBC)



# ELM89xxxBC CMOS 300mA LDO Voltage regulator

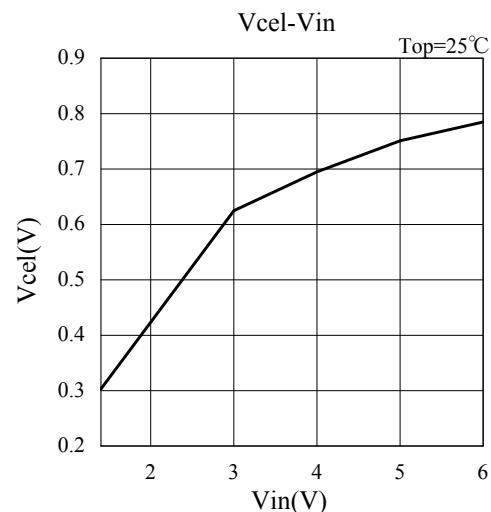
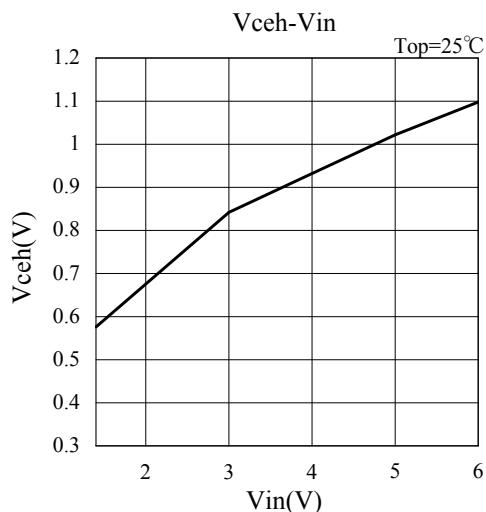
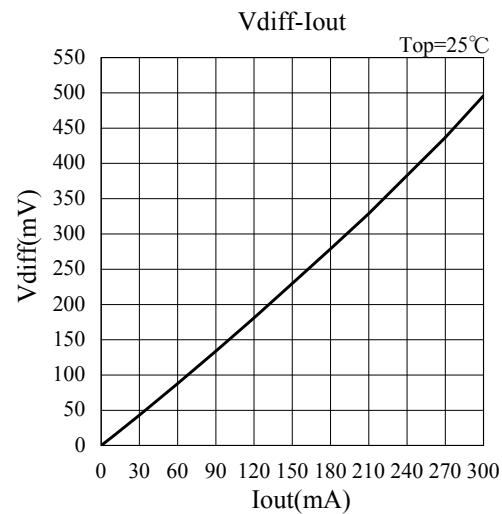
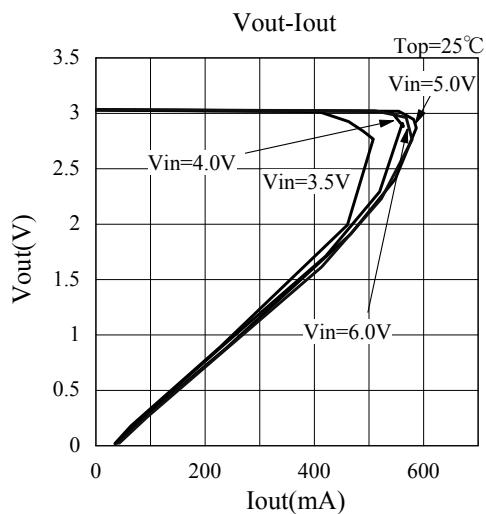
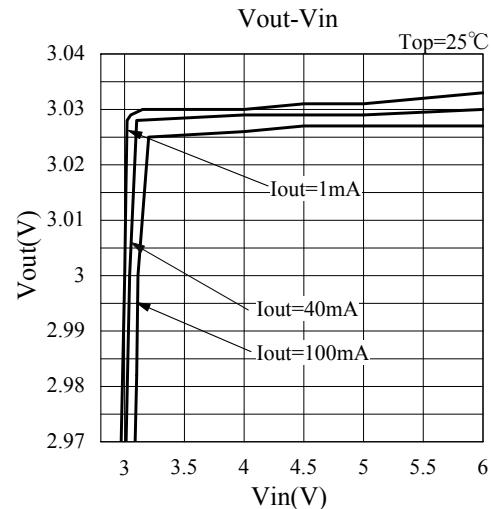
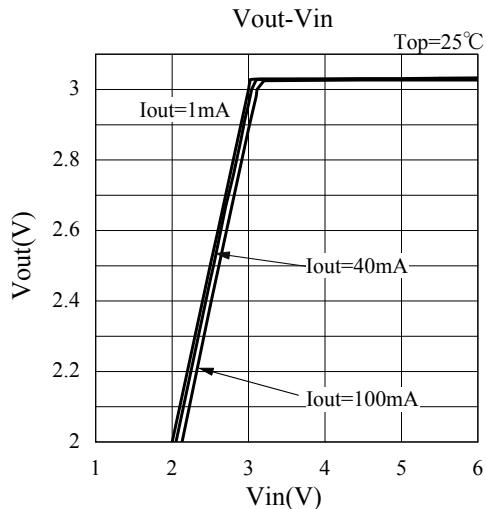
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# ELM89xxxBC CMOS 300mA LDO Voltage regulator

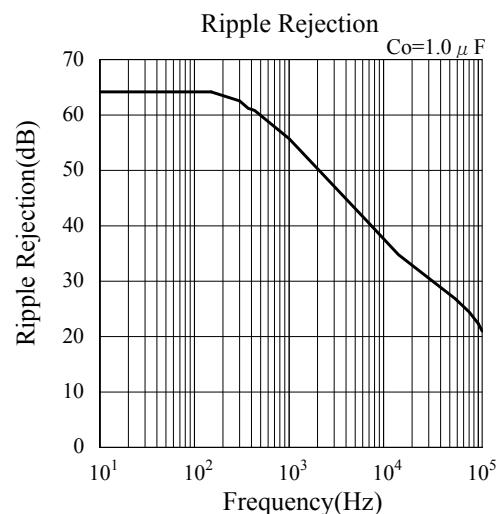
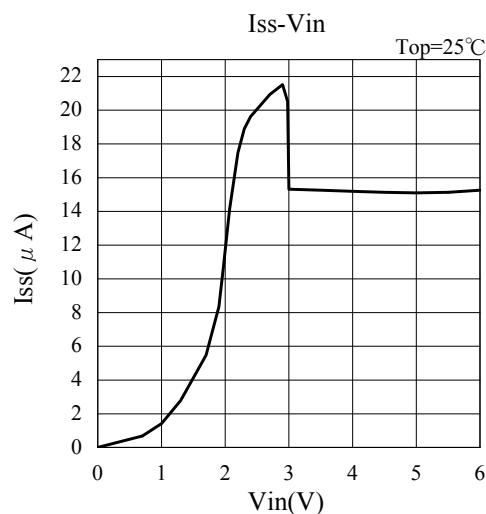
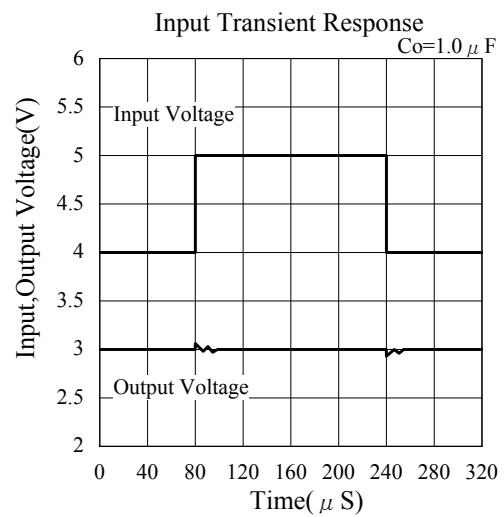
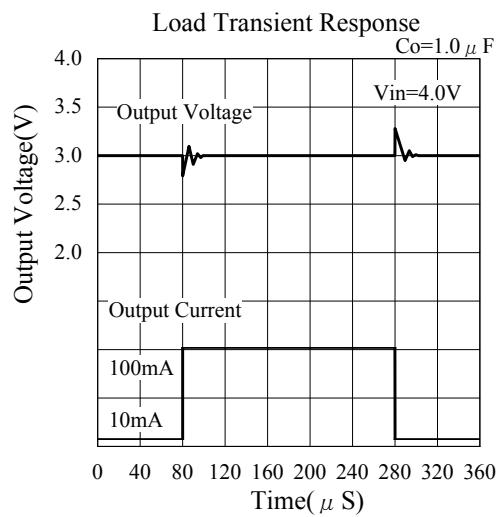
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- 3.0V Vout unit (ELM8930xBC)



# ELM89xxxBC CMOS 300mA LDO Voltage regulator

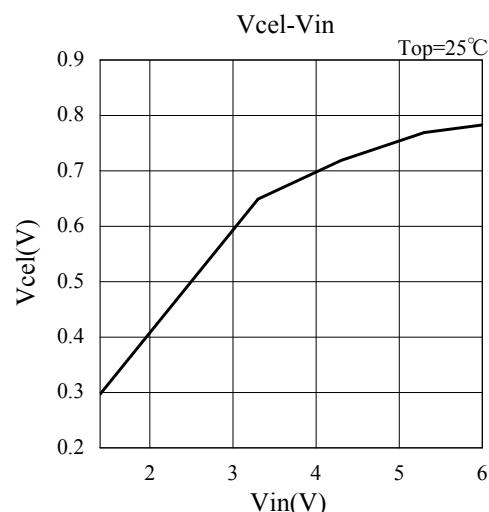
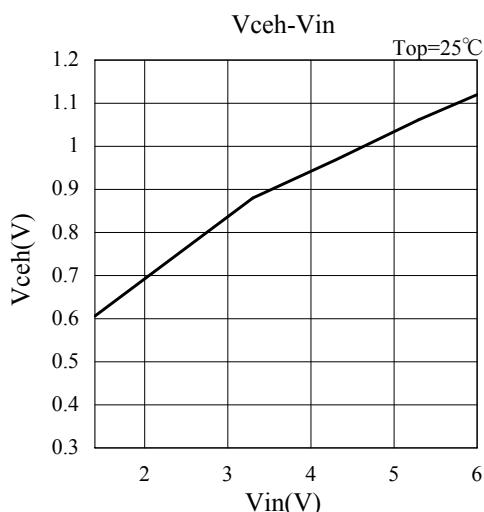
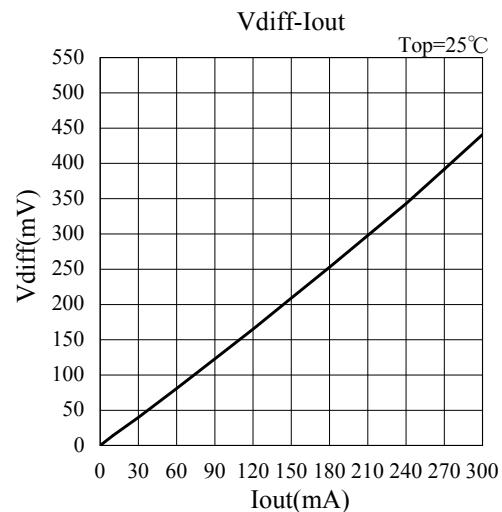
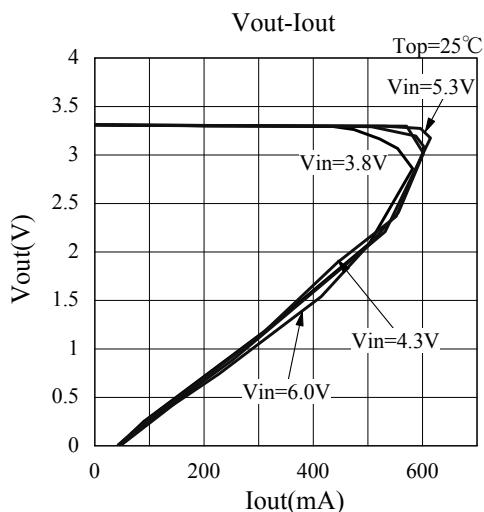
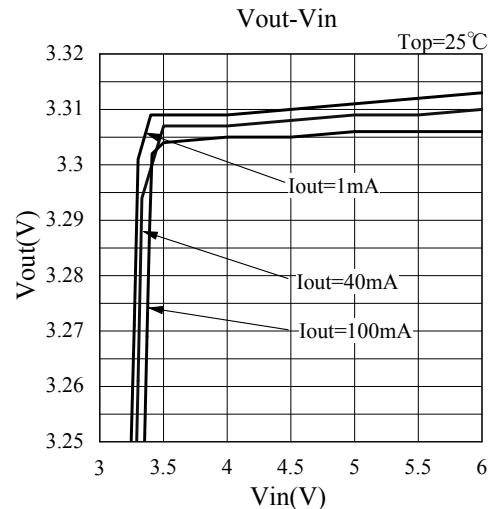
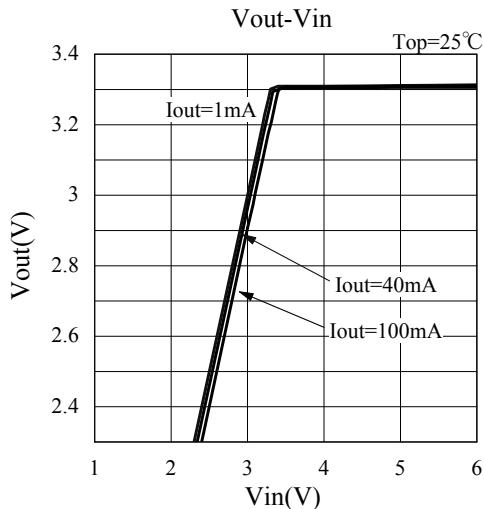
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# ELM89xxxBC CMOS 300mA LDO Voltage regulator

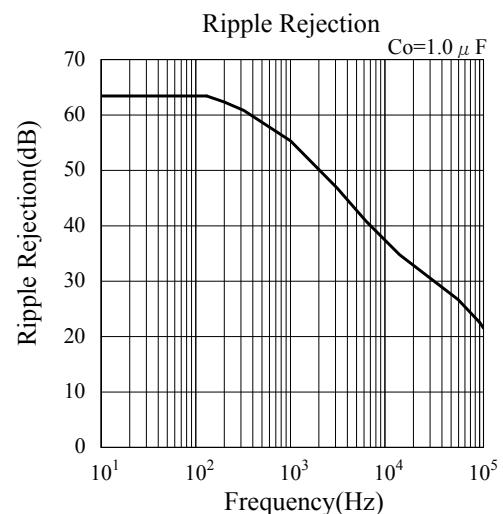
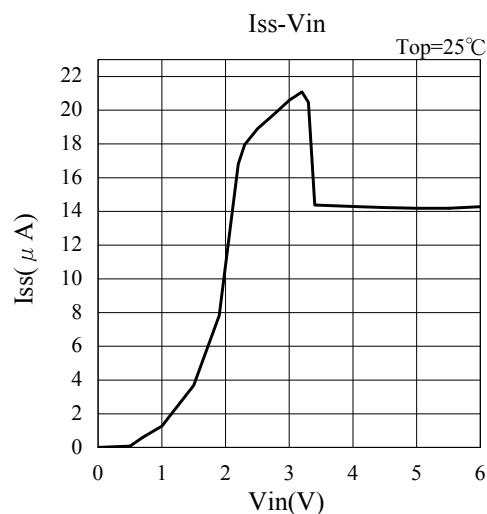
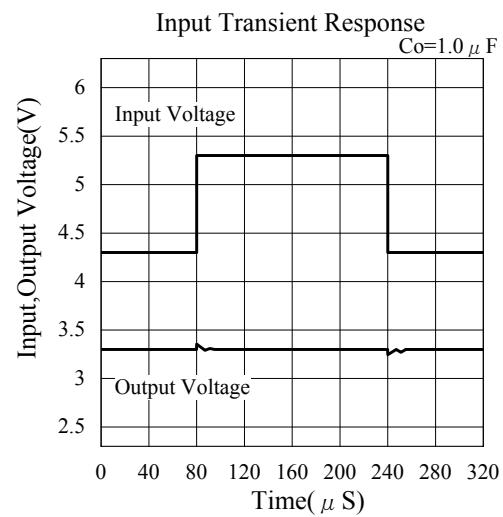
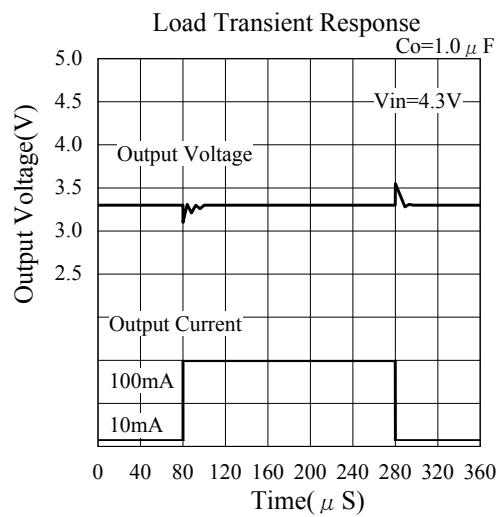
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- 3.3V Vout unit (ELM8933xBC)



# ELM89xxxBC CMOS 300mA LDO Voltage regulator

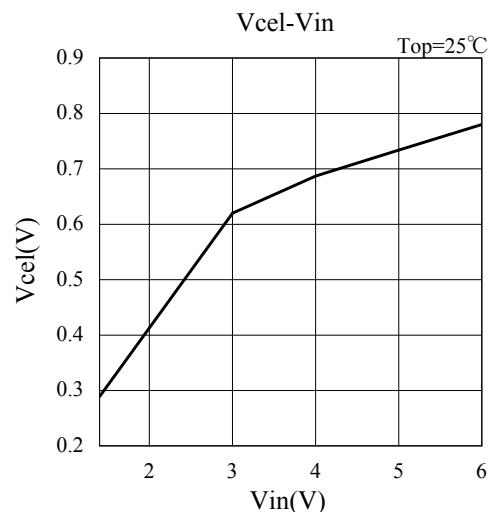
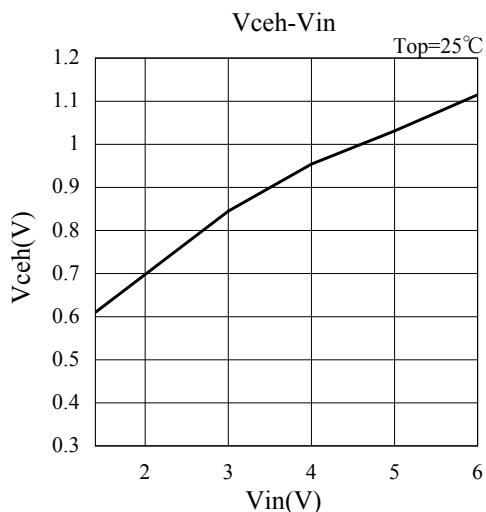
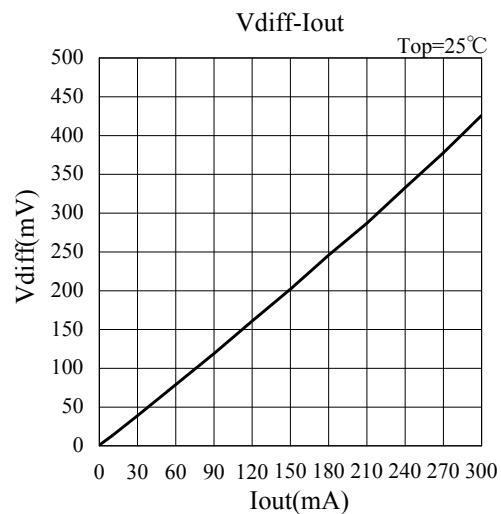
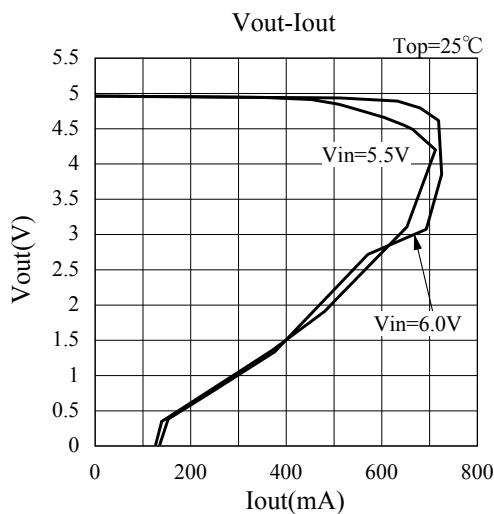
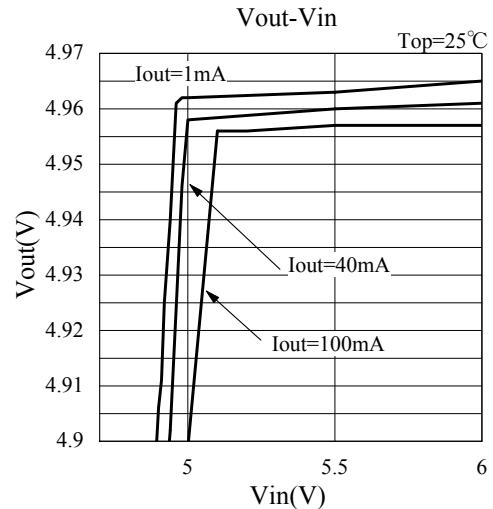
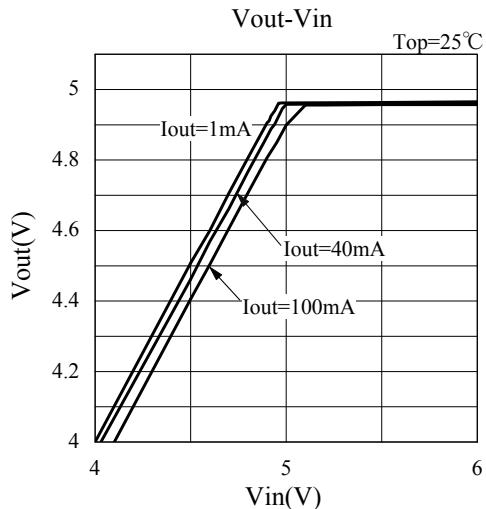
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# ELM89xxxBC CMOS 300mA LDO Voltage regulator

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- 5.0V Vout unit (ELM8950xBC)



# ELM89xxxBC CMOS 300mA LDO Voltage regulator

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