TPNCP170BMX xxxTCG

Ultra Low Consumption CMOS Voltage Regulator

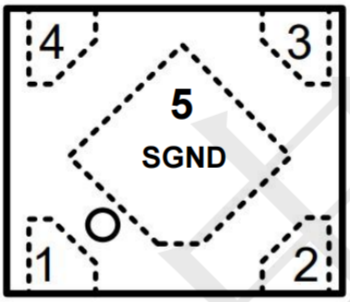
Features

- 0.8μA Current at no Load(TYP.)
- ±2% Output Accuracy
- 300mA Output Current
- Compact package: DFN1X1-4

Applications

- Portable consumer equipments
- Radio control systems
- Wireless Communication Equipments
- Ultra Low Power Micro controller

PIN CONFIGURATION



(Top View)
DFN1X1-4

Pin Number	Pin Name	Pin Function
1	V_{OUT}	Output Pin
2	GND	Ground
3	EN	Chip Enable Pin
4	V_{IN}	Power Input Pin
5	SGND	Connect this pad to GND or leave floating.Do not connect to any potential other than GND. Connect the thermal pad to alarge-area ground plane for best thermal performance.

Ordering Information

TPNCP170BMX250TCG

Example: TPNCP170BMX250TCG

→ 2.5V Version, in DFN1X1-4 Package
&Tape & Reel Packing Type

OUTPUT VOLTAGE

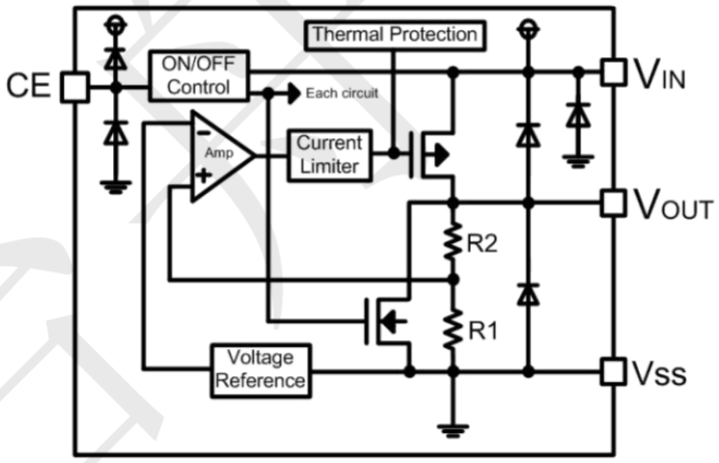
120: 1.2V	150: 1.5V
180: 1.8V	250: 2.5V
280: 2.8V	300: 3.0V
330: 3.3V	360: 3.6V

Absolute Maximum Ratings

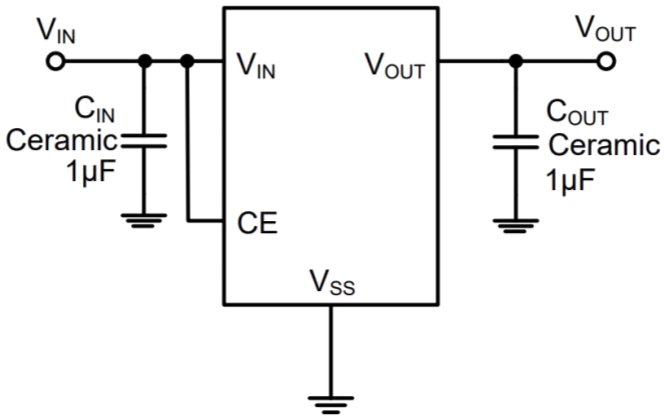
over operating free-air temperature range (unless otherwise noted)

		MIN	MAX	UNIT
VIN	Continuous input voltage range	-0.3	6.5	V
VOUT	Output voltage range	-0.3	VIN+0.3	
Current	Maximum output current	Internally limited		mA
Temperature	Operating Temperature, Topr	-40	+85	℃
	Storage, Tstg	-40	+150	
	Welding temperature and time，Tsolder	+260, 10s		
Power Dissipation	Pd DFN1X1-4	400		mW

BLOCK DIAGRAM



Typical Application Circuit



Electrical Characteristics (TA=25℃, unless otherwise specified)

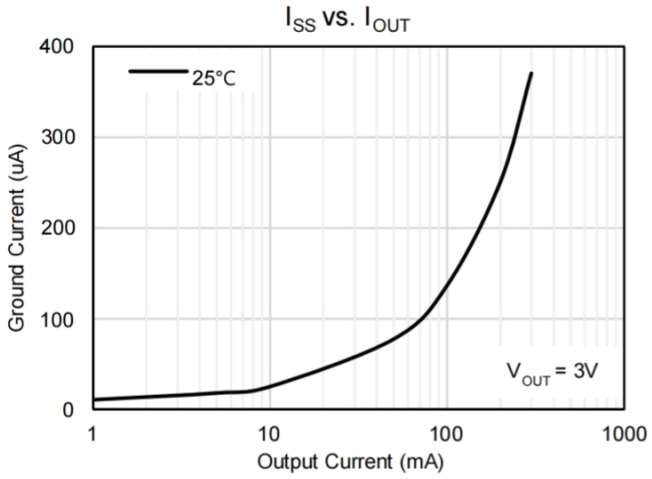
PARAMETER	SYMBOL	CONDITIONS	MIN.	TYP.	MAX.	UNITS
Input Voltage	V_{IN}	--	1.8	--	5.5	V
Output Voltage	V_{OUT}	--	1.2	--	3.6	V
DC Output Accuracy	--	I_{OUT}=1mA	-2	--	2	%
Output Current	I_{OUT}	V_{IN}=1.8V	150	--	--	mA
		V_{IN}=4.3V	350	--	--	
Dropout Voltage	V_{dif} (2)	I_{OUT}=100mA,V_{OUT}=3.3V	--	110	--	mV
Supply Current	I_{SS}	I_{OUT}=0	--	0.8	1.3	μA
Standby Current	I_{STBY}	CE=V_{SS}	--	--	0.1	μA
Load Regulation	ΔV_{OUT}	V_{IN}= V_{OUT}+1V 1mA≤I_{OUT}≤100mA	--	5	--	mV
Line Regulation	$\frac{\Delta V_{OUT}}{V_{OUT}\times\Delta V_{IN}}$	I_{OUT}=10mA V_{OUT}+1V≤V_{IN}≤6V	--	0.03	0.2	%/V
Temperature Coefficient	$\frac{\Delta V_{OUT}}{V_{OUT}\times\Delta T_A}$	I_{OUT}=10mA -40°C<T_A<85°C	--	50	--	ppm
Output Current Limit	I_{LIM}	V_{OUT}=90%xV_{OUT} (V_{OUT}≥3.0V)	350	--	--	mA
Short Current	I_{SHORT}	V_{OUT}=V_{SS}	--	10	--	mA
Power Supply Rejection Ratio	PSRR	I_{OUT}=50mA, 100Hz	--	65	--	dB
		I_{OUT}=50mA, 1kHz	--	70	--	
		I_{OUT}=50mA, 10kHz	--	50	--	
		I_{OUT}=50mA, 100kHz	--	35	--	
CE "High" Voltage	V_{CE}"H"	--	1.5	--	V_{IN}	V
CE "Low" Voltage	V_{CE}"L"	--	--	--	0.3	V
COUT Auto-Discharge Resistance	$R_{DISCHRG}$	V_{IN}=5V, V_{OUT}=3.0V V_{CE}=V_{SS}	--	200	--	Ω

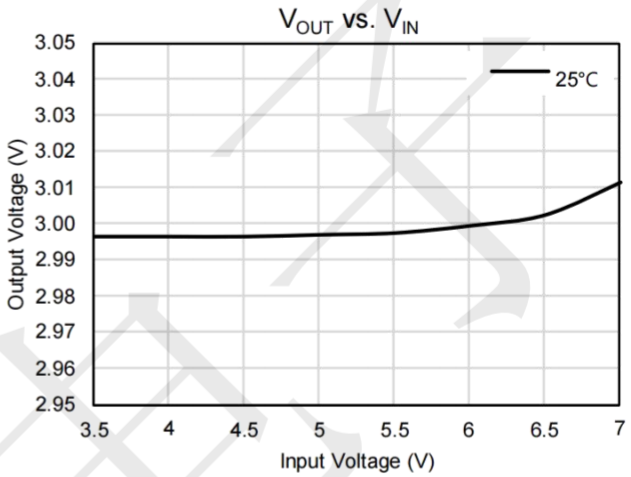
Note:

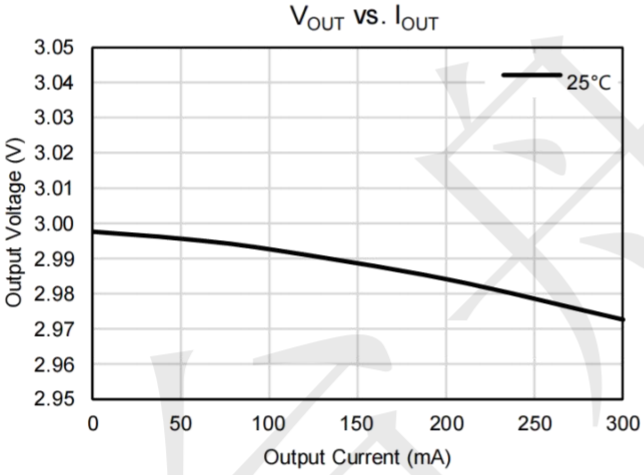
1. Test condition: the device is mounted on FR-4 substrate PC board, with minimum recommended pad layout.

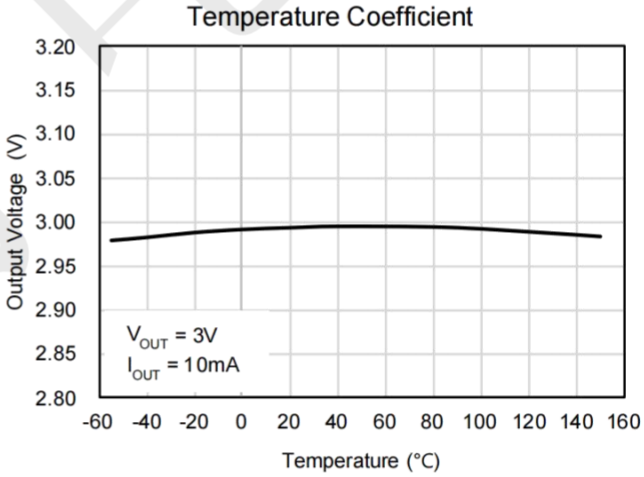
2.Vdif :The Difference Of Output Voltage And Input Voltage When Input Voltage Is Decreased Gradually Till Output Voltage Equals To 98% Of VOUT .

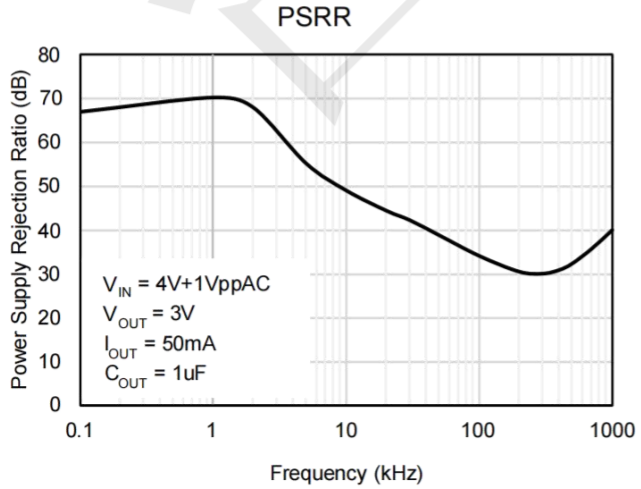
Typical Operating Characteristics (25 °C, unless otherwise noted)

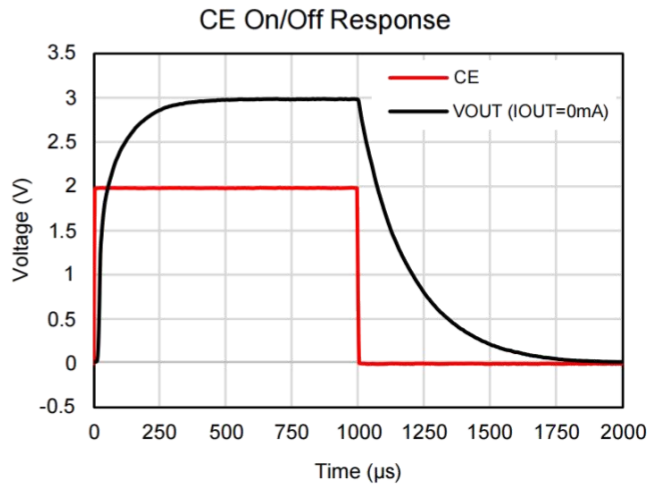






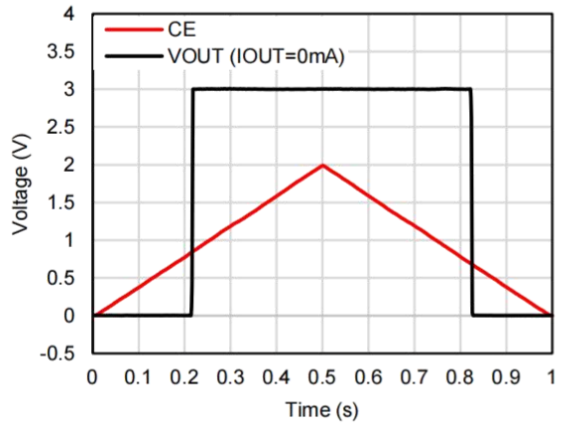




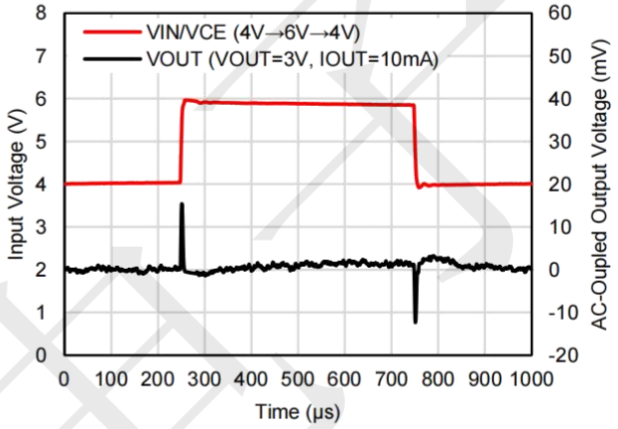


Typical Operating Characteristics (25 °C, unless otherwise noted)

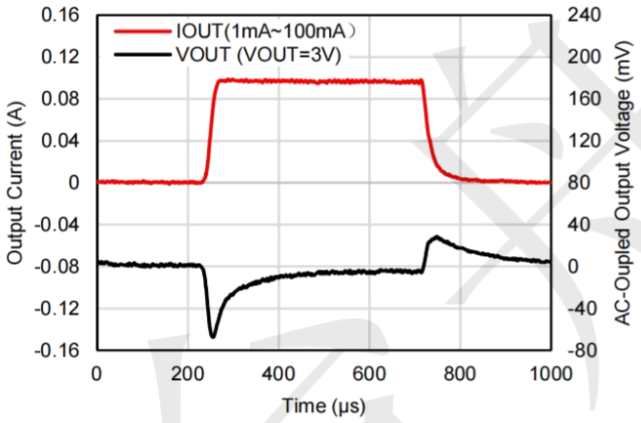
CE Threshold



Line Transient



Load Transient



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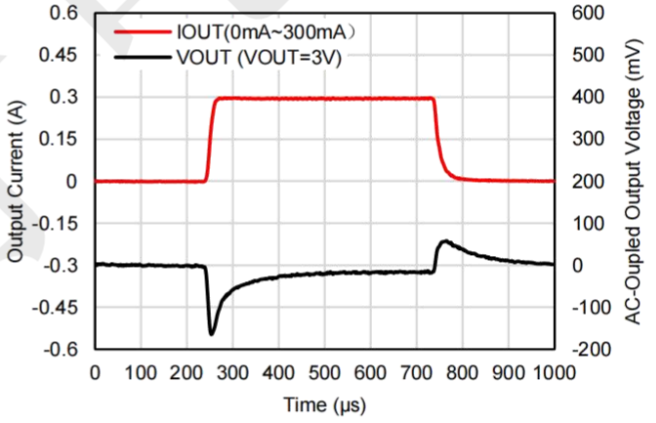
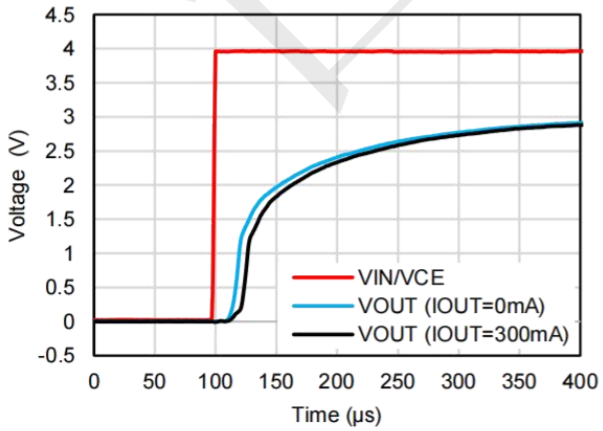
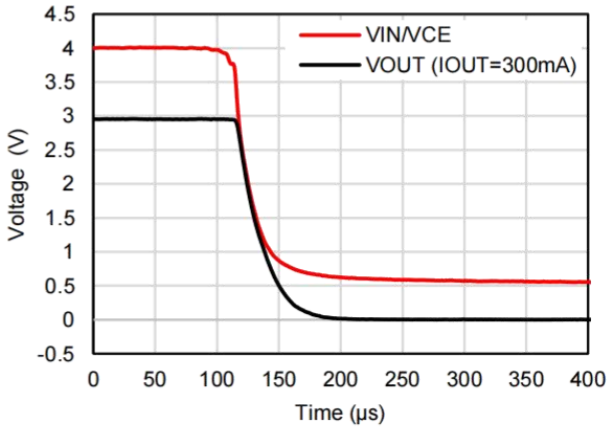


Power Up Response

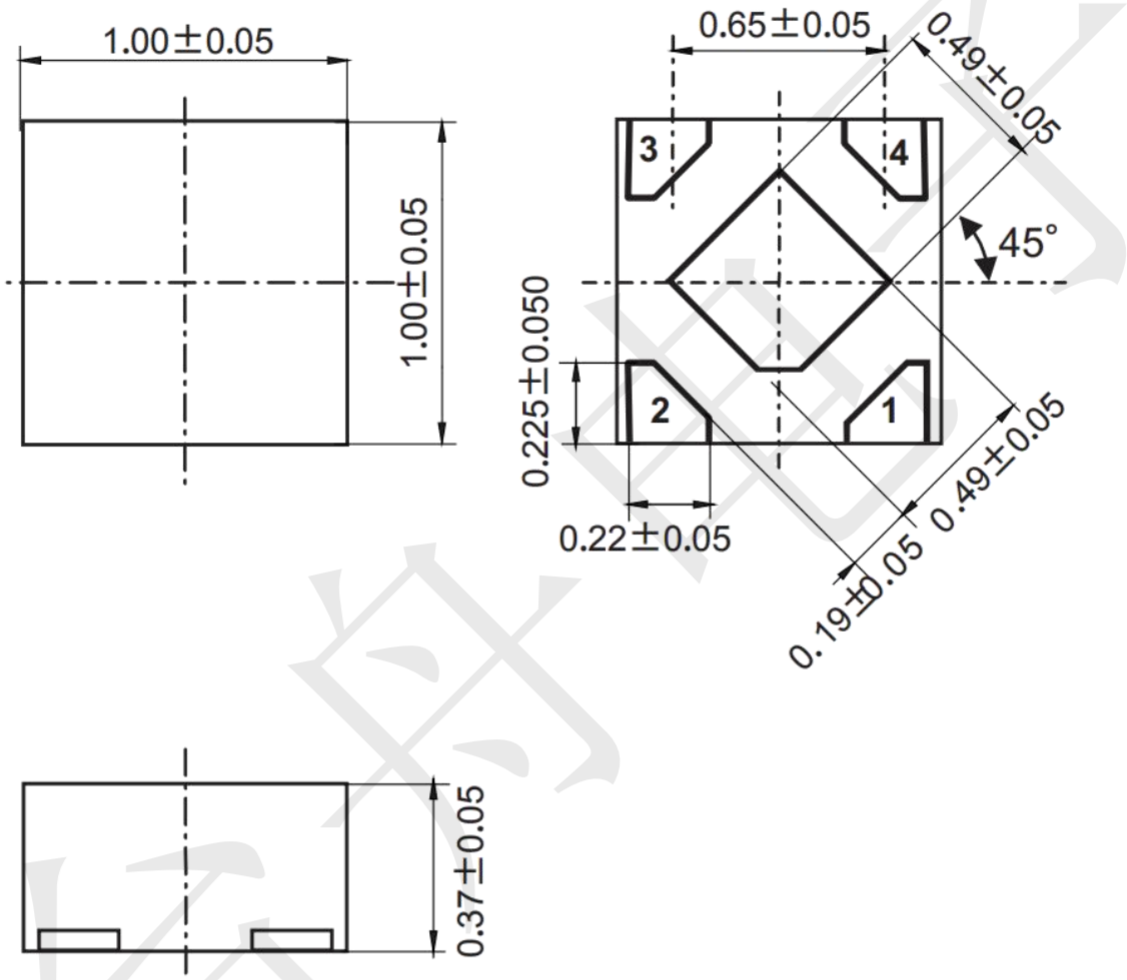
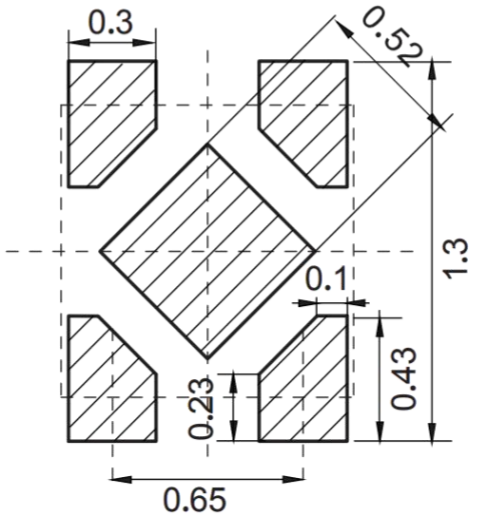


Power Down Response



Package Outline Dimensions (unit: mm)

DFN1X1-4



Mounting Pad Layout (unit: mm)