XTP2038

500mA Low Dropout Voltage Linear Regulator

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15μA, 500mA Low Dropout Voltage Linear Regulator

General Description

The XTP2038 is a ultra-low-power, low-step-down linear regulator that supports a wide voltage input of 1.8V to 5.5V and a standby current of 15μA, making these devices ideal for battery-powered systems that spend most of their time in standby mode, requiring minimal standby power consumption to extend the life of the device. Integrated enable control mode that reduces current to only 10nA(typical) when the low level enable signal is turned off.

XTP2038 only needs 1uF ceramic capacitor to work normally. The XTP2038 integrated short-circuit current limiting and thermal shutdown protection. And has automatic discharge function, can be disabled in the state of rapid discharge V_{OUT}.

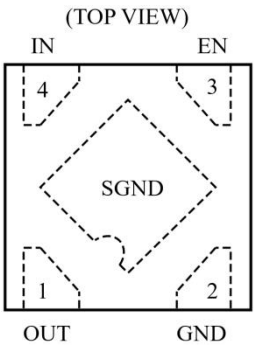
The operating temperature range is -40℃~ +85℃.

Features

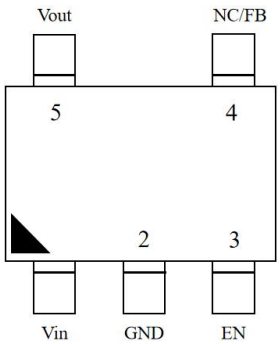
- 15μA Ground Current at no Load
- ±2% Output Accuracy
- 500mA Output Current
- 10nA Shutdown Current
- Input Voltage Range: 1.8V to 5.5V
- Dropout Voltage: 0.18V at 300mA
- Fixed Output Voltage
  0.9V,1.05V,1.2V,1.5V,1.8V,1.9V,2.5V,2.7V,2.8V,2.85V,2.9V,3.0V,3.3V,3.6V,4V and 5V
- Adjustable Output from 0.8V to 5.0V
- Stable with Ceramic or Tantalum Capacitor
- Current Limit Protection
- Over-Temperature Protection
- SOT23-5,DFN1×1-4L Package Available

Applications

- Portable, Battery Powered Equipment
- Low Power Microcontrollers
- Laptop, Palmtops and PDAs
- Wireless Communication Equipment
- Audio/Video Equipment
- Car Navigation System



DFN1x1-4L



SOT-23-5

Ordering Information

MODEL	PACKAGE DESCRIPTION	ORDERING NUMBER	PACKAGE MARKING	PACKING OPTION
XTP2038-0.9	DFN1x1-4L	XTP2038-090AD1CT	3A YW	Tape and Reel, 12000
XTP2038-1.05	DFN1x1-4L	XTP2038-105AD1CT	3B YW	Tape and Reel, 12000
XTP2038-1.2	DFN1x1-4L	XTP2038-120AD1CT	3C YW	Tape and Reel, 12000
XTP2038-1.5	DFN1x1-4L	XTP2038-150AD1CT	3D YW	Tape and Reel, 12000
XTP2038-1.8	DFN1x1-4L	XTP2038-180AD1CT	3E YW	Tape and Reel, 12000
XTP2038-1.9	DFN1x1-4L	XTP2038-190AD1CT	3F YW	Tape and Reel, 12000
XTP2038-2.5	DFN1x1-4L	XTP2038-250AD1CT	3G YW	Tape and Reel, 12000
XTP2038-2.7	DFN1x1-4L	XTP2038-270AD1CT	3H YW	Tape and Reel, 12000
XTP2038-2.8	DFN1x1-4L	XTP2038-280AD1CT	3I YW	Tape and Reel, 12000
XTP2038-2.85	DFN1x1-4L	XTP2038-285AD1CT	3J YW	Tape and Reel, 12000
XTP2038-2.9	DFN1x1-4L	XTP2038-290AD1CT	3K YW	Tape and Reel, 12000
XTP2038-3.0	DFN1x1-4L	XTP2038-300AD1CT	3L YW	Tape and Reel, 12000
XTP2038-3.3	DFN1x1-4L	XTP2038-330AD1CT	3M YW	Tape and Reel, 12000
XTP2038-3.6	DFN1x1-4L	XTP2038-360AD1CT	3N YW	Tape and Reel, 12000
XTP2038-4.0	DFN1x1-4L	XTP2038-400AD1CT	3O YW	Tape and Reel, 12000
XTP2038-5.0	DFN1x1-4L	XTP2038-500AD1CT	3P YW	Tape and Reel, 12000
XTP2038-0.9	SOT-23-5L	XTP2038-090AS2CT	P2038A YWZZX	Tape and Reel, 3000
XTP2038-1.05	SOT-23-5L	XTP2038-105AS2CT	P2038B YWZZX	Tape and Reel, 3000
XTP2038-1.2	SOT-23-5L	XTP2038-120AS2CT	P2038C YWZZX	Tape and Reel, 3000
XTP2038-1.5	SOT-23-5L	XTP2038-150AS2CT	P2038D YWZZX	Tape and Reel, 3000
XTP2038-1.8	SOT-23-5L	XTP2038-180AS2CT	P2038E YWZZX	Tape and Reel, 3000
XTP2038-1.9	SOT-23-5L	XTP2038-190AS2CT	P2038F YWZZX	Tape and Reel, 3000
XTP2038-2.5	SOT-23-5L	XTP2038-250AS2CT	P2038G YWZZX	Tape and Reel, 3000
XTP2038-2.7	SOT-23-5L	XTP2038-270AS2CT	P2038H YWZZX	Tape and Reel, 3000
XTP2038-2.8	SOT-23-5L	XTP2038-280AS2CT	P2038I YWZZX	Tape and Reel, 3000
XTP2038-2.85	SOT-23-5L	XTP2038-285AS2CT	P2038J YWZZX	Tape and Reel, 3000
XTP2038-2.9	SOT-23-5L	XTP2038-290AS2CT	P2038K YWZZX	Tape and Reel, 3000
XTP2038-3.0	SOT-23-5L	XTP2038-300AS2CT	P2038L YWZZX	Tape and Reel, 3000
XTP2038-3.3	SOT-23-5L	XTP2038-330AS2CT	P2038M YWZZX	Tape and Reel, 3000
XTP2038-3.6	SOT-23-5L	XTP2038-360AS2CT	P2038N YWZZX	Tape and Reel, 3000
XTP2038-4.0	SOT-23-5L	XTP2038-400AS2CT	P2038O YWZZX	Tape and Reel, 3000
XTP2038-5.0	SOT-23-5L	XTP2038-500AS2CT	P2038P YWZZX	Tape and Reel, 3000
XTP2038-ADJ	SOT-23-5L	XTP2038-ADJAS2CT	P2038R YWZZX	Tape and Reel, 3000

MARKING INFORMATION

NOTE：

1X/P2038X：Device Code.

YW ： Date Code.

ZZX：Inside Code.

Description of Functional Pins

Pin No DFN1x1-4L	Pin Name	Pin Function
1	V_{OUT}	Output of the Regulator
2	GND	Ground
3	EN	Enable Control Input
4	V_{IN}	Input of Supply Voltage
Exposed Pad	S_{GND}	Substrate of Chip. Leave floating or tie to GND

Pin No SOT-23-5L	Pin Name	Pin Function
1	V_{IN}	Input of Supply Voltage
2	GND	Ground
3	EN	Enable Control Input
4	NC	No internal connection
5	V_{OUT}	Output of the Regulator

Typical Application Circuit

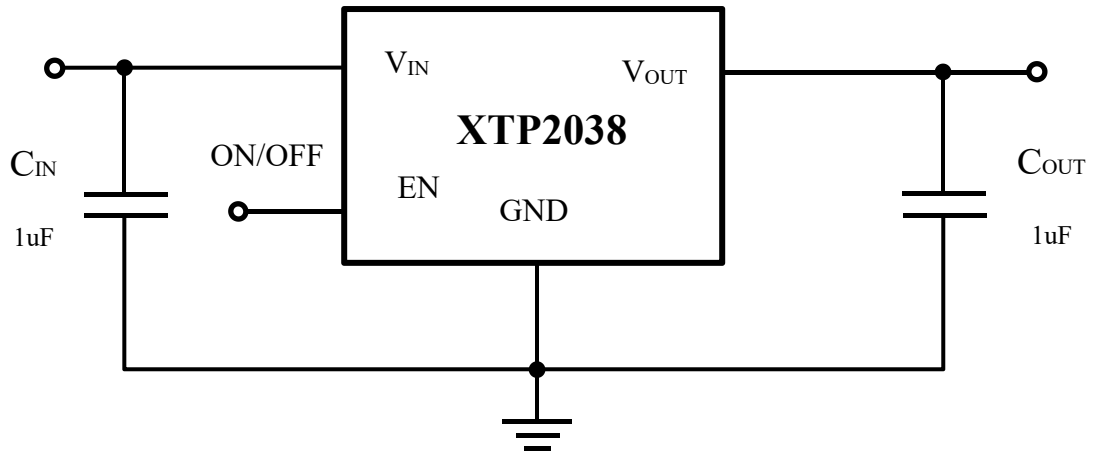


Figure 1. Application circuit of Fixed V_{OUT} LDO with enable function

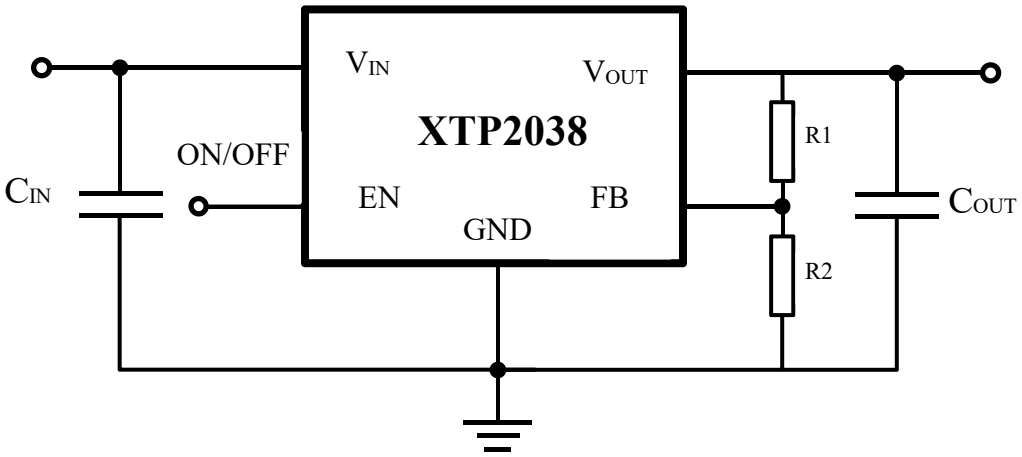
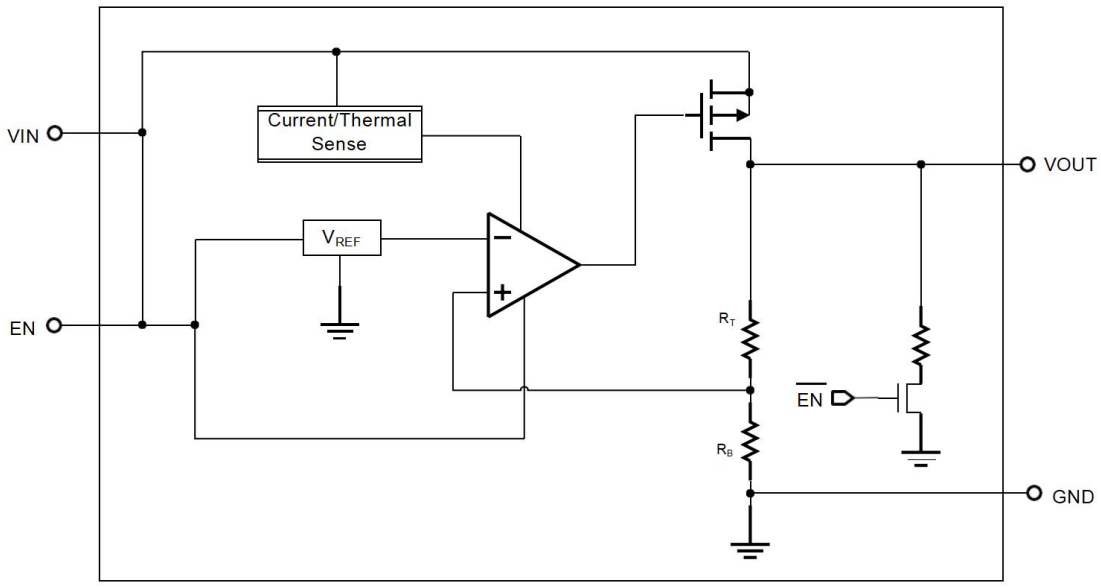


Figure 2. Adjustable Voltage Typical Application Circuit

Equation：Vout = (R1+R2)/R2×0.8

Function Block Diagram



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