ME6401 Series Low ESR Cap Compatable Positive Voltage Regulators

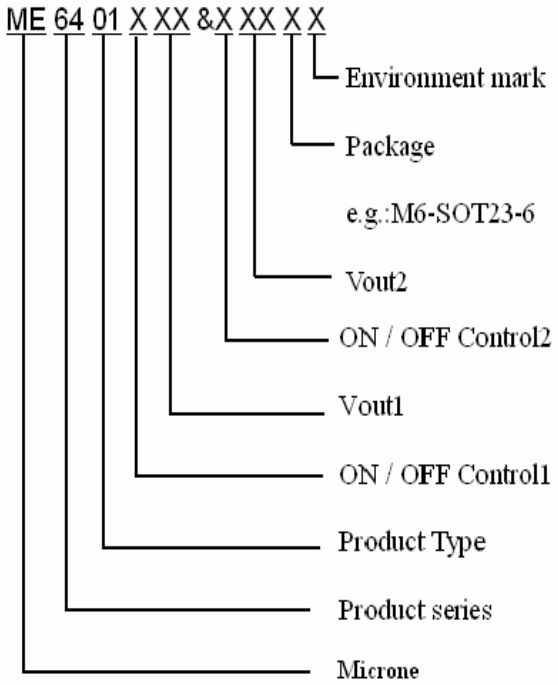
ME6401 series are highly precise, low power consumption, high voltage, positive voltage regulators manufactured using CMOS and laser trimming technologies .The series provides large currents with a significantly small dropout voltage.

The series is compatible with low ESR ceramic capacitors .The current limiter's foldback circuit also operates as a short protect for the output current limiter and the output pin.

FEATURES

- Highly Accurate：±2%；
- Output voltage range：0.8V~5.0V (selectable in 0.1V steps)；
- Low power consumption：Typ. =130μA；
- Large output current ：More than 300mA；
- Dropout voltage：
  0.04V at 30mA and 0.15V at 100mA；
- Input Stability： Typ. 0.03%/V；
- Be available to regulator and reference voltage；
- Packages：SOT23-6。

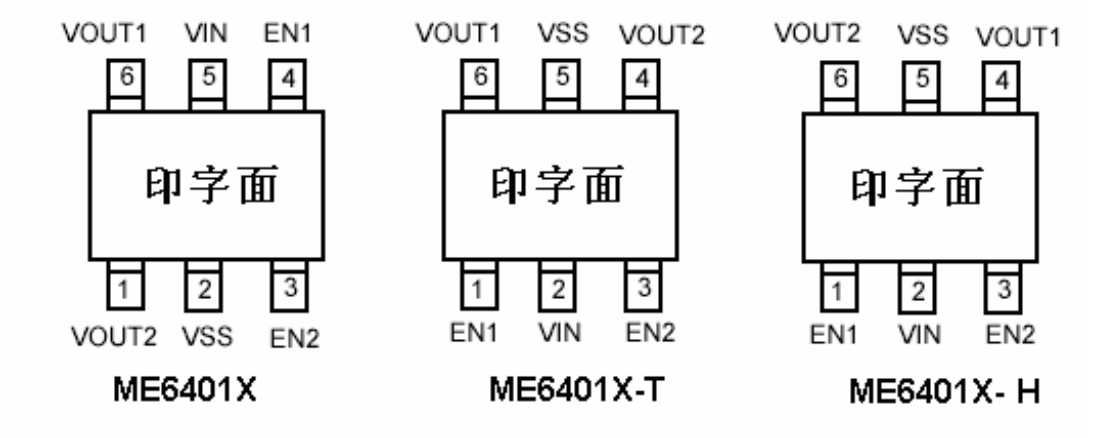
Selection Guide



APPLICATIONS

- Battery powered equipment；
- Communication tools；
- Mobile phones；
- Portable games；
- Portable AV systems；
- Cameras, Video systems；
- Reference voltage sources。

PIN CONFIGURATION



PIN ASSIGNMENT

ME6401CXX&Cxx

PIN			NAME	FUNCTION
ME6401X	ME6401X-T	ME6401X-H		
4	1	1	EN1	ON / OFF Control1
5	2	2	VIN	INPUT1
3	3	3	EN2	ON / OFF Control2
1	4	6	VOUT2	OUTPUT2
2	5	5	VSS	GROUND
6	6	4	VOUT1	OUTPUT2

Absolute Maximum Ratings

PARAMETER		SYMBOL	DESCRIPTION	UNIT
Input Voltage		V_{IN}	6.5	V
Output Current		I_{out}	700	mA
Output Voltage		V_{out}	Vss-0.3 ~ Vout+0.3	V
Power Dissipation	SOT23-6	Pd	250	mW
Operating Ambient Temperature		T_{Opr}	-25 ~ +85	℃
Storage Temperature		T_{stg}	-40 ~ +125	℃
Soldering Temperature And Time		T_{solder}	260℃, 10s	

Electrical Characteristics

ME6401CXX&Cxx

(Vin=Vout+1V,Cin=Cout=1u,Ta=25^{0}C Unless otherwise stated)

PARAMETER	SYMBOL	CONDITION	MIX	TYP	MAX	UNIT
Output Voltage1	V_{OUT}(E) (Note 2)	I_{OUT}=10mA, V_{IN}=Vout+1V	X 0.98	V_{OUT}(T) (Note 1)	X 1.02	V
Output Voltage2	V_{OUT}(E) (Note 2)	I_{OUT}=10mA, V_{IN}=Vout+1V	X 0.98	V_{OUT}(T) (Note 1)	X 1.02	V
Maximum Output Voltage	I_{OUT} (max)	V_{IN}=Vout+1V		300		mA
Load Regulation	ΔV_{OUT}	V_{IN}=Vout+1V, 1mA≤I_{OUT}≤80mA		15	60	mV
Dropout Voltage (Note 3)	V_{dif1}	I_{OUT} =30mA	20	40	60	mV
	V_{dif2}	I_{OUT} =100mA	100	150	180	mV
Supply Current	I_{SS}	V_{IN}=Vout+1V		25	45	μA
Line Regulations	$\frac{\Delta V_{OUT}}{\Delta V_{IN} \bullet V_{OUT}}$	I_{OUT} =10mA Vout+1V ≤V_{IN}≤5V		0.01	0.2	%/V
Power Supply Ripple Rejection Ratio	PSRR	Vin= [Vout+1]V +1Vp-pAC I_{OUT} =10mA,f=1kHz		62		dB
Short Circuit Current	I_{short}	Vin=Vout(T)+1.5V Vout=Vss		30		mA
Over Current Protection	I_{limit}			200		mA

注：

1. V_{OUT} (T) ： Specified Output Voltage

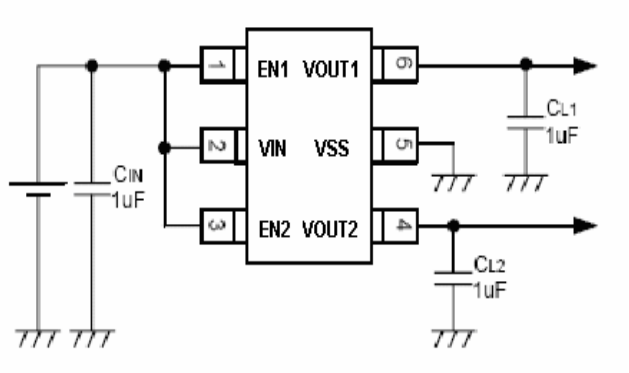
2.V_{OUT} (E) ： Effective Output Voltage (Ie. The output voltage when “V_{OUT} (T)+1.0V”is provided at the Vin pin while maintaining a certain Iout value.)

3.V_{dif} ： V_{IN1} –V_{OUT} (E)’

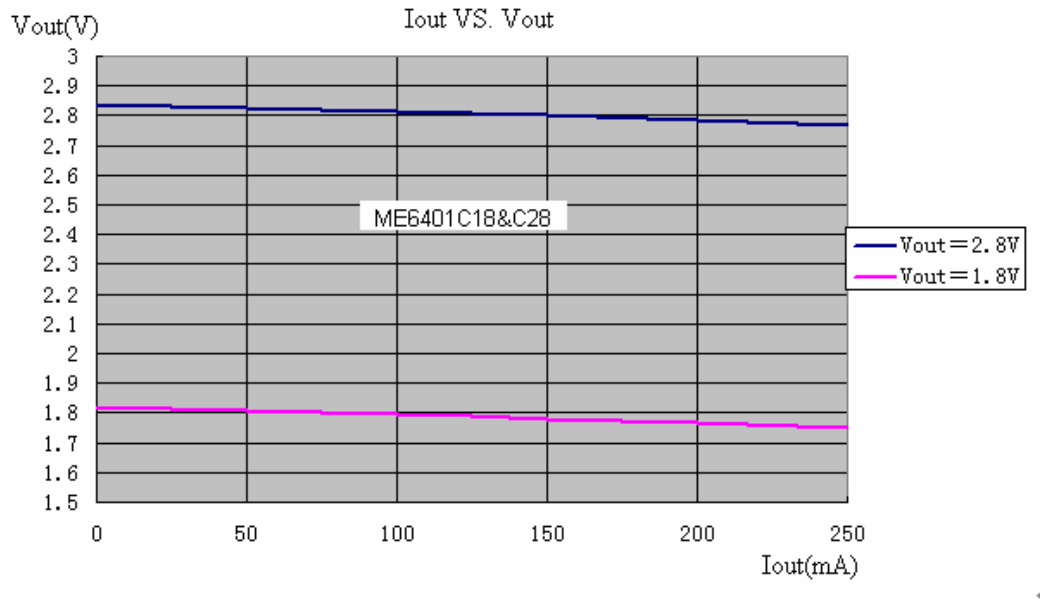
V_{IN1} ： The input voltage when V_{OUT}(E)’ appears as input voltage is gradually decreased.

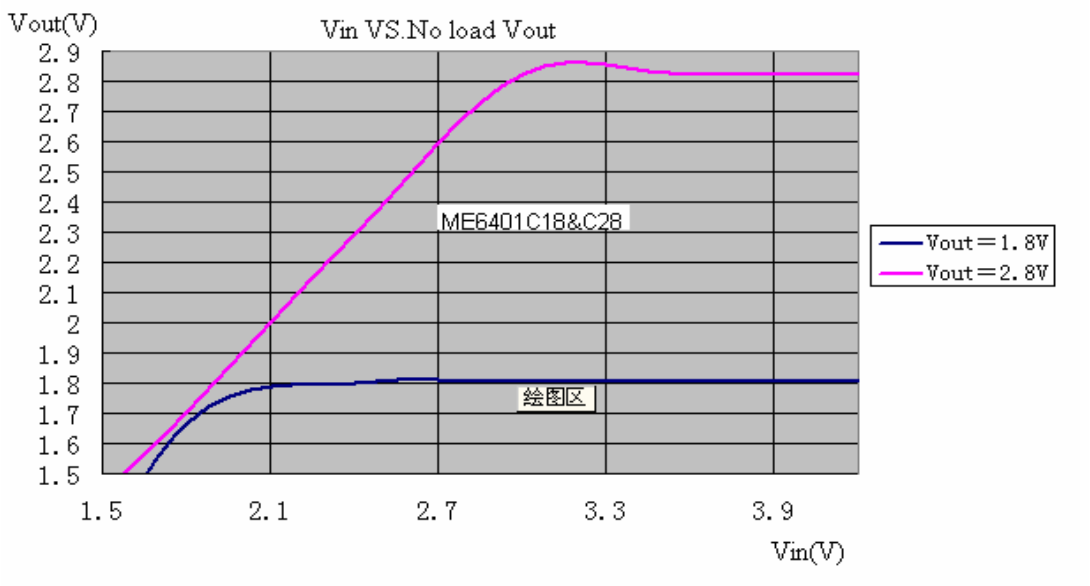
V_{OUT} (E)’=A voltage equal to 98% of the output voltage whenever an amply stabilized Iout {V_{OUT} (T)+1.0V} is input.

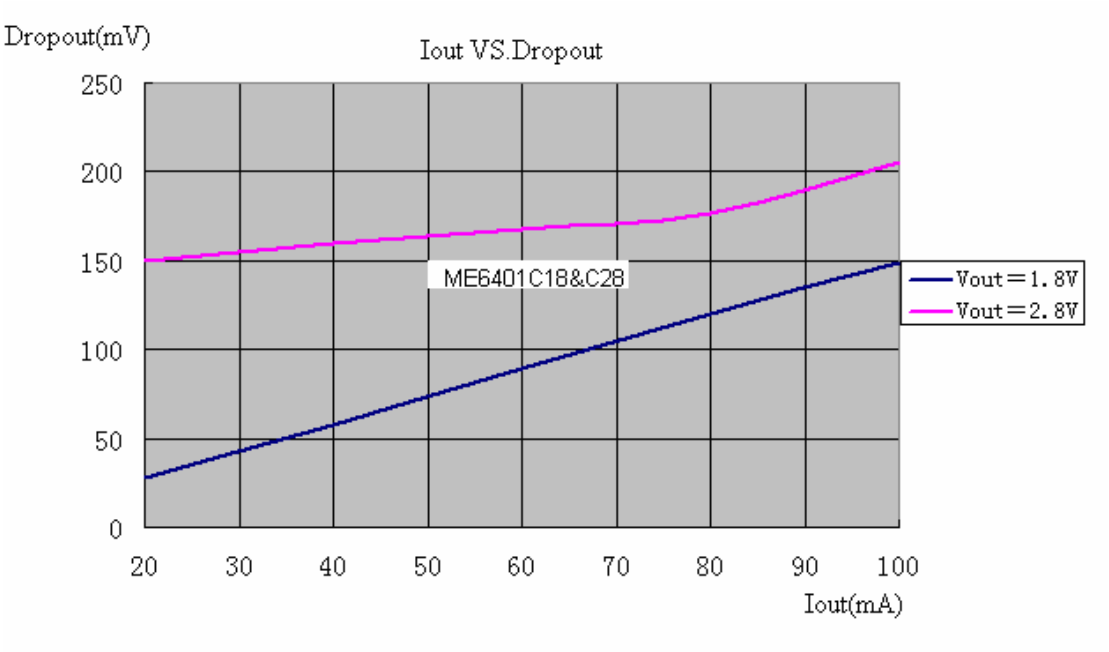
Test Circuits

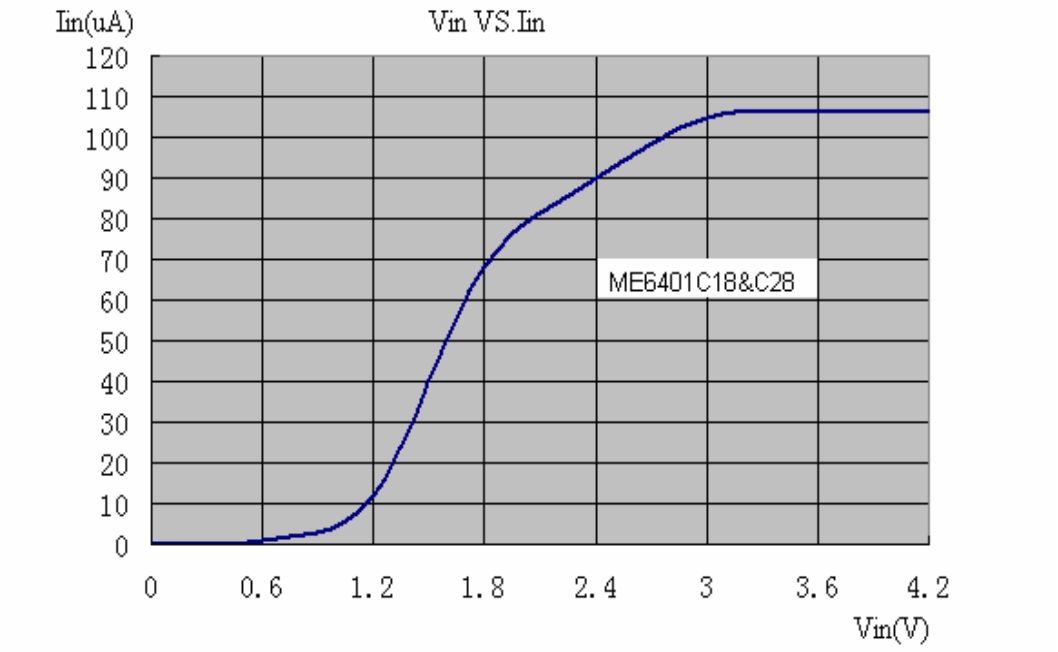


Type Characteristics

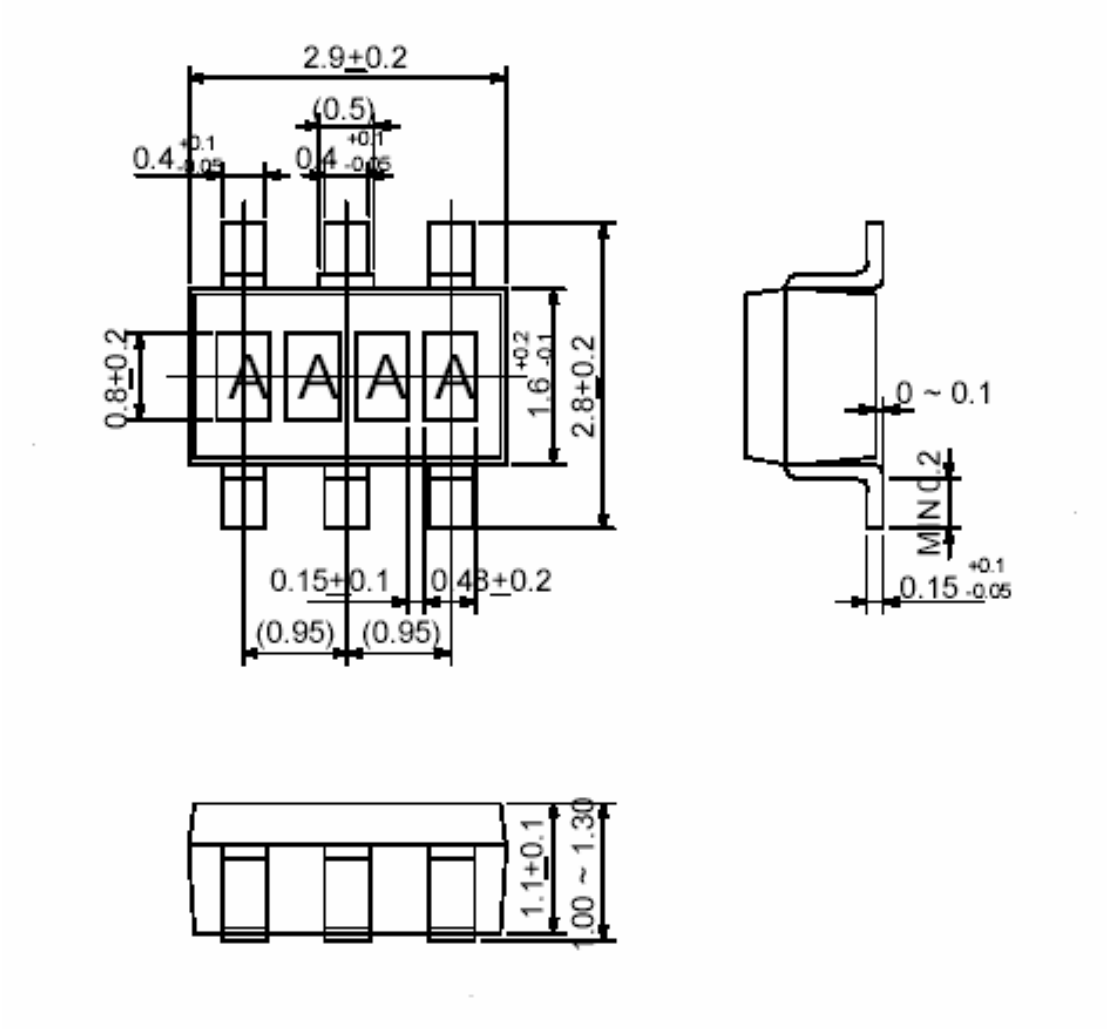





Dropout(mV)
Iout VS.Dropout
250
200
150
100
50
0
20
30
40
50
60
70
80
90
100
Iout(mA)
ME6401C18&C28
Vout＝1.8V
Vout＝2.8V


Iin(uA)
Vin VS.Iin
120
110
100
90
80
70
60
50
40
30
20
10
0
0
0.6
1.2
1.8
2.4
3
3.6
4.2
Vin(V)
ME6401C18&C28

Package Dimensions



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