Low power consumption, Low ESR Cap. Compatible

General Description

ME6216 series are highly precise, low power consumption, positive voltage regulators manufactured using CMOS 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

- Output voltage range：1.0V~5.0V
- Input voltage: up to 6 V
- Dropout Voltage:110mV@ I_{OUT} =100mA
  240mV@ I_{OUT} =200mA
- Highly Accuracy: ±1%
- Low power consumption：6uA(TYP.)
- Large output current：300mA (V_{IN}＝4.3V,V_{OUT}＝3.3V)
- Excellent Input Stability
- Be available to regulator and reference voltage

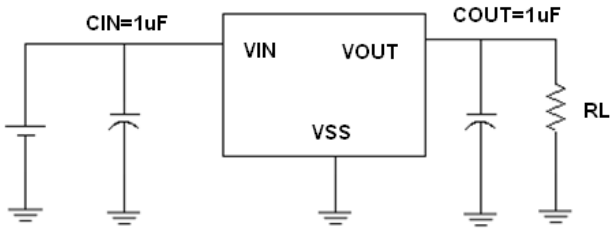
Typical Application

- Communication tools
- Mobile phones
- Portable games
- Portable AV systems
- Cameras, Video systems
- Reference voltage sources

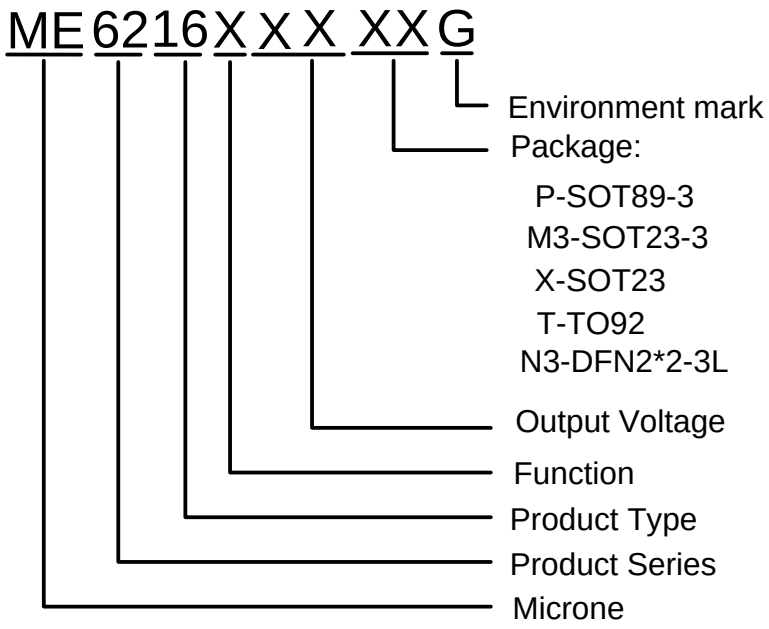
Package

- 3-pin SOT89-3，SOT23-3，SOT23，TO92，DFN2*2-3L

Typical Application Circuit



Selection Guide

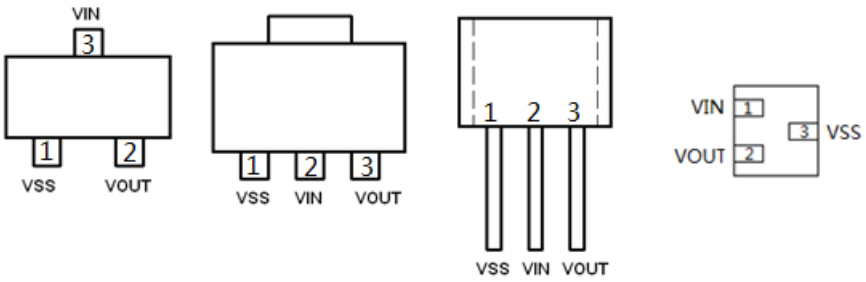


product series	product description
ME6216A10PG	V_{OUT} =1.0V； Package：SOT89-3
ME6216A12M3G	V_{OUT} =1.2V； Package：SOT23-3
ME6216A14M3G	V_{OUT} =1.4V； Package：SOT23-3
ME6216A28M3G	V_{OUT} =2.8V； Package：SOT23-3
ME6216A38M3G	V_{OUT} =3.8V； Package：SOT23-3
ME6216A30XG	V_{OUT} =3.0V； Package：SOT23
ME6216A18TG	V_{OUT} =1.8V； Package：TO92
ME6216A18N3AG	V_{OUT} =1.8V；Package： DFN2*2-3L(2.0*2.0*0.55-1.30)

NOTE:

1. At present ,there are twelve kinds of voltage value: 1.0V、1.2V、1.3V、1.4V、1.5V、1.8V、2.0V、2.5V、2.7V、2.8V、3.0V、3.3V、3.6V、3.8V、5.0V。
2. If you need other voltage and package, please contact our sales staff。

Pin Configuration



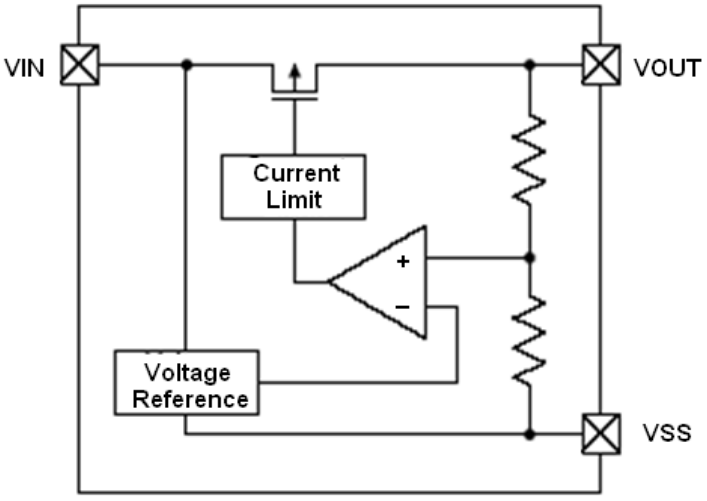
SOT23/SOT23-3 SOT89 TO92 DFN2*2-3L

Pin Assignment

ME6216Axx

Pin					Name	Function
M3	P	X	T	N3		
SOT23-3	SOT89-3	SOT23	TO-92	DFN3L		
1	1	1	1	3	VSS	Ground
2	3	2	3	2	VOUT	Output
3	2	3	2	1	VIN	Input

Block Diagram



Absolute Maximum Ratings

Parameter		Symbol	Description	Units
Input Voltage		V_{IN}	6.5	V
Output Current		I_{OUT}	390	mA
Output Voltage		V_{OUT}	Vss-0.3 ~ Vout+0.3	V
Power Dissipation	SOT23-3	Pd	300	mW
	SOT89-3	Pd	500	mW
	SOT23	Pd	300	mW
	TO-92	Pd	500	mW
	DFN3L	Pd	500	mW
Operating Ambient Temperature		T_{Opr}	-25 ~ +125	℃
Storage Temperature		T_{stg}	-40 ~ +125	℃

Electrical Characteristics

ME6216 (Vout=1.2V)

(V_{IN}=V_{OUT}+1V,CIN=COUT=1uF,Ta=25^{O}C Unless otherwise stated)

PARAMETER	SYMBOL	CONDITION	MIX	TYP	MAX	UNIT
Output Voltage (Vout=1.0~1.3V)	V_{OUT}(E) (Note 2)	I_{OUT}=10mA, V_{IN}=V_{OUT}+1V	V_{OUT}(T) -0.015	V_{OUT}(T) (Note 1)	V_{OUT}(T) +0.015	V
Input Voltage	V_{IN}				6	V
Maximum Output Current	I_{OUT} (max)	V_{IN}= V_{OUT} +1V		250		mA
Load Regulation	ΔV_{OUT}	V_{IN}= V_{OUT} +1V 1mA≤I_{OUT}≤100mA		8	12	mV
Dropout Voltage (Note 3)	V_{dif1}	I_{OUT} =100mA		320	350	mV
	V_{dif2}	I_{OUT} =200mA		570	600	mV
Supply Current	I_{SS}	V_{IN}= V_{OUT} +1V		6	8	μA
Line Regulations	$\frac{\Delta V_{OUT}}{\Delta V_{IN} \bullet V_{OUT}}$	I_{OUT} =10mA Vout+1V ≤V_{IN}≤6V		0.05	0.2	%/V
Power Supply Ripple Rejection Ratio	PSRR	Vin= [V_{OUT} +1]V +1Vp-pAC I_{OUT} =10mA,f=1kHz		65		dB
Short Circuit Current	I_{short}	Vin= V_{OUT} (T)+1V V_{OUT} =VSS		50	70	mA
Over Current Protection	I_{limit}	V_{IN}= V_{OUT} +1V		310	340	mA

ME6216 (Vout=1.4V)

(V_{IN}=V_{OUT}+1V,CIN=COUT=1uF,Ta=25^{O}C Unless otherwise stated)

PARAMETER	SYMBOL	CONDITION	MIX	TYP	MAX	UNIT
Output Voltage	V_{OUT}(E) (Note 2)	I_{OUT}=10mA, V_{IN}=V_{OUT}+1V	X 0.99	V_{OUT}(T) (Note 1)	X 1.01	V
Input Voltage	V_{IN}				6	V
Maximum Output Current	I_{OUT} (max)	V_{IN}= V_{OUT} +1V		250		mA
Load Regulation	ΔV_{OUT}	V_{IN}= V_{OUT} +1V 1mA≤I_{OUT}≤100mA		8	12	mV
Dropout Voltage (Note 3)	V_{dif1}	I_{OUT} =100mA		280	300	mV
	V_{dif2}	I_{OUT} =200mA		510	530	mV
Supply Current	I_{SS}	V_{IN}= V_{OUT} +1V		6	8	μA
Line Regulations	$\frac{\Delta V_{OUT}}{\Delta V_{IN} \bullet V_{OUT}}$	I_{OUT} =10mA Vout+1V ≤V_{IN}≤6V		0.05	0.2	%/V
Power Supply Ripple Rejection Ratio	PSRR	Vin= [V_{OUT} +1]V +1Vp-pAC I_{OUT} =10mA,f=1kHz		65		dB
Short Circuit Current	I_{short}	Vin= V_{OUT} (T)+1V V_{OUT} =VSS		50	70	mA
Over Current Protection	I_{limit}	V_{IN}= V_{OUT} +1V		380	420	mA

ME6216 (Vout=1.8V)

(V_{IN}=V_{OUT}+1V,CIN=COUT=1uF,Ta=25^{O}C Unless otherwise stated)

PARAMETER	SYMBOL	CONDITION	MIX	TYP	MAX	UNIT
Output Voltage	V_{OUT}(E) (Note 2)	I_{OUT}=10mA, V_{IN}=V_{OUT}+1V	X 0.99	V_{OUT}(T) (Note 1)	X 1.01	V
Input Voltage	V_{IN}				6	V
Maximum Output Current	I_{OUT} (max)	V_{IN}= V_{OUT} +1V		300		mA
Load Regulation	ΔV_{OUT}	V_{IN}= V_{OUT} +1V 1mA≤I_{OUT}≤100mA		8	12	mV
Dropout Voltage (Note 3)	V_{dif1}	I_{OUT} =100mA		190	210	mV
	V_{dif2}	I_{OUT} =200mA		380	400	mV
Supply Current	I_{SS}	V_{IN}= V_{OUT} +1V		6	8	μA
Line Regulations	$\frac{\Delta V_{OUT}}{\Delta V_{IN} \bullet V_{OUT}}$	I_{OUT} =10mA Vout+1V ≤V_{IN}≤6V		0.05	0.2	%/V

Power Supply Ripple Rejection Ratio	PSRR	Vin= [V_{OUT} +1]V +1Vp-pAC I_{OUT} =10mA,f=1kHz		65		dB
Short Circuit Current	I_{short}	Vin= V_{OUT} (T)+1V V_{OUT} =VSS		50	70	mA
Over Current Protection	I_{limit}	V_{IN}= V_{OUT} +1V		380	420	mA

ME6216(Vout=2.8V)

(V_{IN}=V_{OUT}+1V,CIN=COUT=1uF,Ta=25^{O}C Unless otherwise stated)

PARAMETER	SYMBOL	CONDITION	MIX	TYP	MAX	UNIT
Output Voltage	V_{OUT}(E) (Note 2)	I_{OUT}=10mA, V_{IN}=V_{OUT}+1V	X 0.99	V_{OUT}(T) (Note 1)	X 1.01	V
Input Voltage	V_{IN}				6	V
Maximum Output Current	I_{OUT} (max)	V_{IN}= V_{OUT} +1V		300		mA
Load Regulation	ΔV_{OUT}	V_{IN}= V_{OUT} +1V 1mA≤I_{OUT}≤100mA		8	14	mV
Dropout Voltage (Note 3)	V_{dif1}	I_{OUT} =100mA		120	140	mV
	V_{dif2}	I_{OUT} =200mA		230	250	mV
Supply Current	I_{SS}	V_{IN}= V_{OUT} +1V		5	8	μA
Line Regulations	$\frac{\Delta V_{OUT}}{\Delta V_{IN} \bullet V_{OUT}}$	I_{OUT} =10mA Vout+1V ≤V_{IN}≤6V		0.05	0.2	%/V
Power Supply Ripple Rejection Ratio	PSRR	Vin= [V_{OUT} +1]V +1Vp-pAC I_{OUT} =10mA,f=1kHz		65		dB
Short Circuit Current	I_{short}	Vin= V_{OUT} (T)+1V V_{OUT} =VSS		50	70	mA
Over Current Protection	I_{limit}	V_{IN}= V_{OUT} +1V		380	420	mA

ME6216(Vout=3.3V)

(V_{IN}=V_{OUT}+1V,CIN=COUT=1uF,Ta=25^{O}C Unless otherwise stated)

PARAMETER	SYMBOL	CONDITION	MIX	TYP	MAX	UNIT
Output Voltage	V_{OUT}(E) (Note 2)	I_{OUT}=10mA, V_{IN}=V_{OUT}+1V	X 0.99	V_{OUT}(T) (Note 1)	X 1.01	V
Input Voltage	V_{IN}				6	V
Maximum Output Current	I_{OUT} (max)	V_{IN}= V_{OUT} +1V		300		mA
Load Regulation	ΔV_{OUT}	V_{IN}= V_{OUT} +1V 1mA≤I_{OUT}≤100mA		14	18	mV
Dropout Voltage (Note 3)	V_{dif1}	I_{OUT} =100mA		100	120	mV
	V_{dif2}	I_{OUT} =200mA		210	260	mV

Supply Current	I_{SS}	V_{IN}= V_{OUT} +1V		4	8	μA
Line Regulations	$\frac{\Delta V_{OUT}}{\Delta V_{IN} \bullet V_{OUT}}$	I_{OUT} =10mA Vout+1V ≤V_{IN}≤6V		0.07	0.2	%/V
Power Supply Ripple Rejection Ratio	PSRR	Vin= [V_{OUT} +1]V +1Vp-pAC I_{OUT} =10mA,f=1kHz		65		dB
Short Circuit Current	I_{short}	Vin= V_{OUT} (T)+1V V_{OUT} =VSS		50	70	mA
Over Current Protection	I_{limit}	V_{IN}= V_{OUT} +1V		380	420	mA

ME6216(Vout=5.0V)

(V_{IN}=V_{OUT}+1V,CIN=COUT=1uF,Ta=25^{O}C Unless otherwise stated)

PARAMETER	SYMBOL	CONDITION	MIX	TYP	MAX	UNIT
Output Voltage	V_{OUT}(E) (Note 2)	I_{OUT}=10mA, V_{IN}=V_{OUT}+1V	X 0.99	V_{OUT}(T) (Note 1)	X 1.01	V
Input Voltage	V_{IN}				6	V
Maximum Output Current	I_{OUT} (max)	V_{IN}= V_{OUT} +1V		500		mA
Load Regulation	ΔV_{OUT}	V_{IN}= V_{OUT} +1V 1mA≤I_{OUT}≤100mA		8	14	mV
Dropout Voltage (Note 3)	V_{dif1}	I_{OUT} =100mA		90	110	mV
	V_{dif2}	I_{OUT} =200mA		170	200	mV
Supply Current	I_{SS}	V_{IN}= V_{OUT} +1V		7	8	μA
Power Supply Ripple Rejection Ratio	PSRR	Vin= [V_{OUT} +1]V +1Vp-pAC I_{OUT} =10mA,f=1kHz		65		dB
Short Circuit Current	I_{short}	Vin= V_{OUT} (T)+1V V_{OUT} =VSS		50	70	mA
Over Current Protection	I_{limit}	V_{IN}= V_{OUT} +1V		550	600	mA

Note :

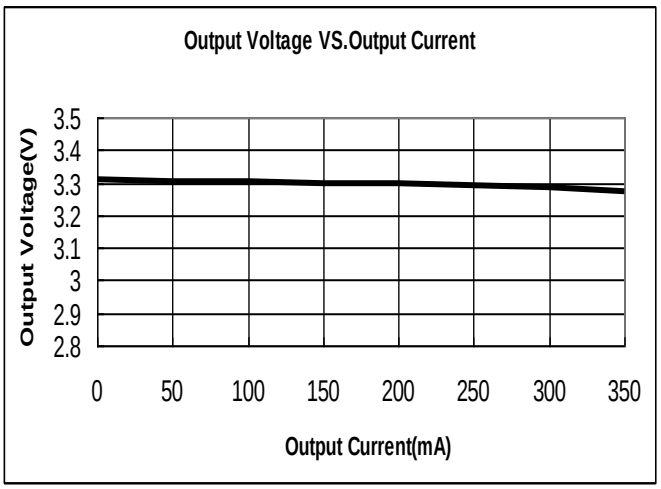
1. V_{OUT} (T) ： Specified Output Voltage
2. V_{OUT} (E) ： Effective Output Voltage (Ie. The output voltage when "V_{OUT} (T)+1.0V"is provided at the Vin pin while maintaining a certain I_{OUT} value.)
3. V_{dif} ： V_{IN1} –V_{OUT} (E)'

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

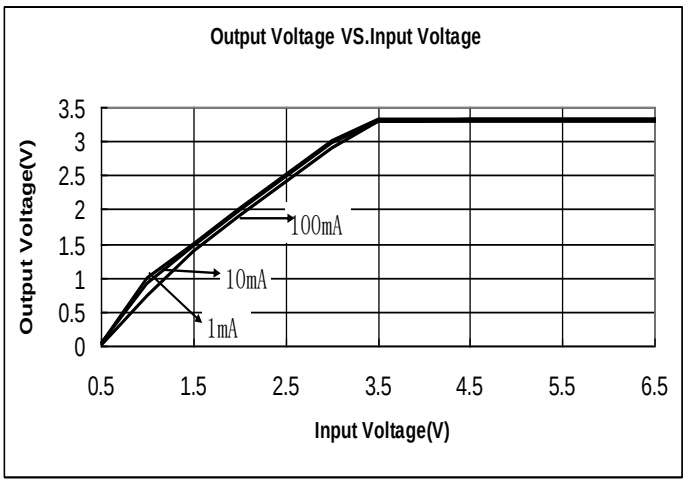
   V_{OUT} (E)'=A voltage equal to 98% of the output voltage whenever an amply stabilized I_{OUT} {V_{OUT} (T)+1.0V} is input.

Type Characteristics (ME6216A33)

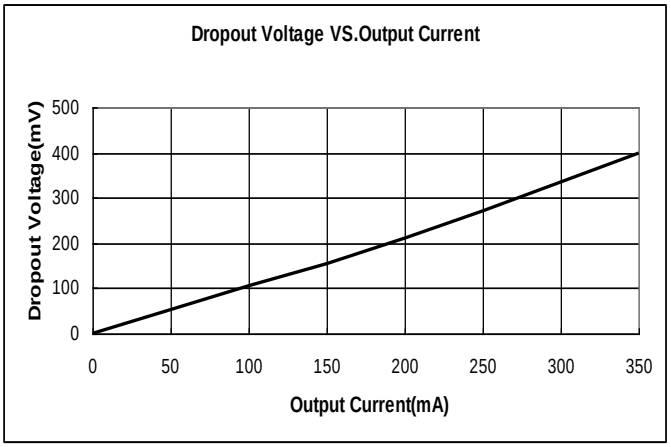
（1）Output Voltage VS. Output Current
（V_{IN}=V_{OUT}+1, **Ta = 25 °C**）



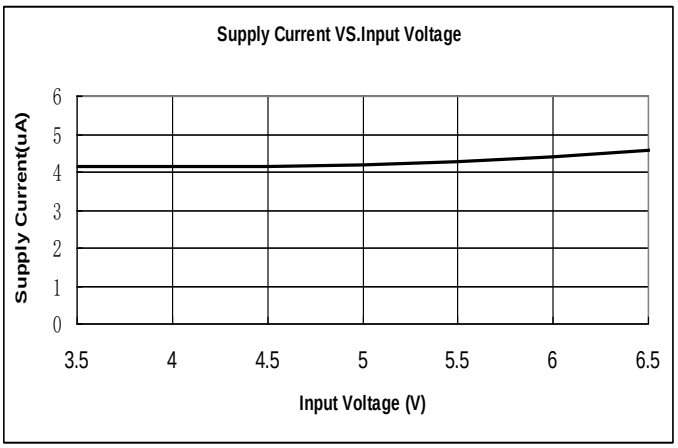
（2）Output Voltage VS. Input Voltage
（**Ta = 25 °C**）



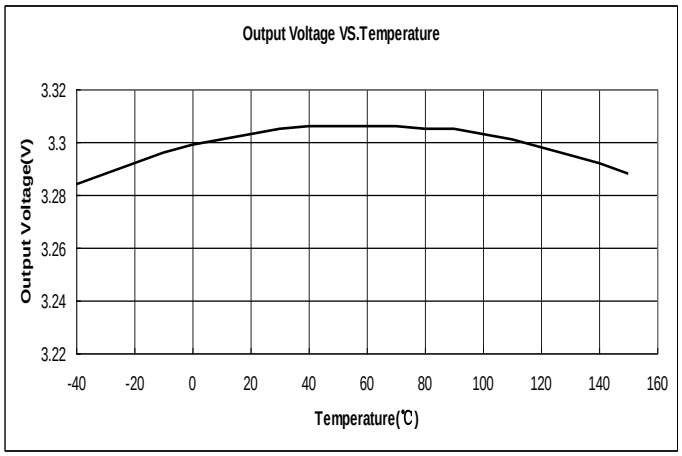
（3）Dropout Voltage VS. Output Current
（V_{IN}=V_{OUT}+1V,**Ta = 25 °C**）



（4）Supply Current VS. Input Voltage
（**Ta = 25 °C**）

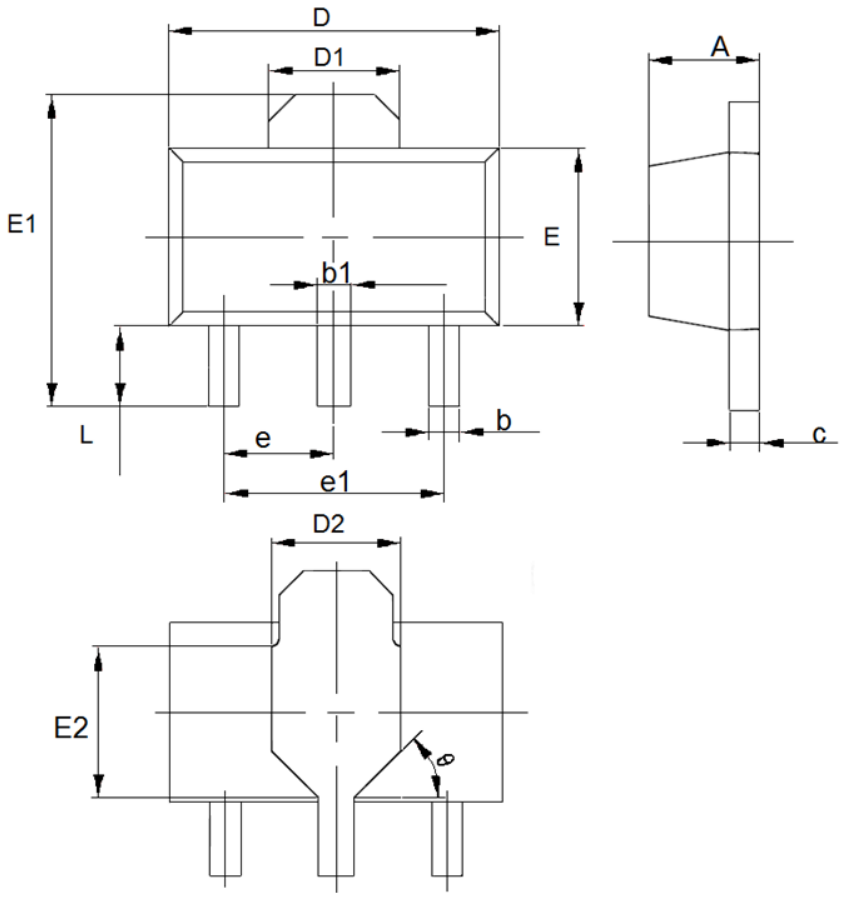


（5）Output Voltage VS. Temperature (V_{IN}=V_{OUT}+1V, I_{OUT} =10mA)



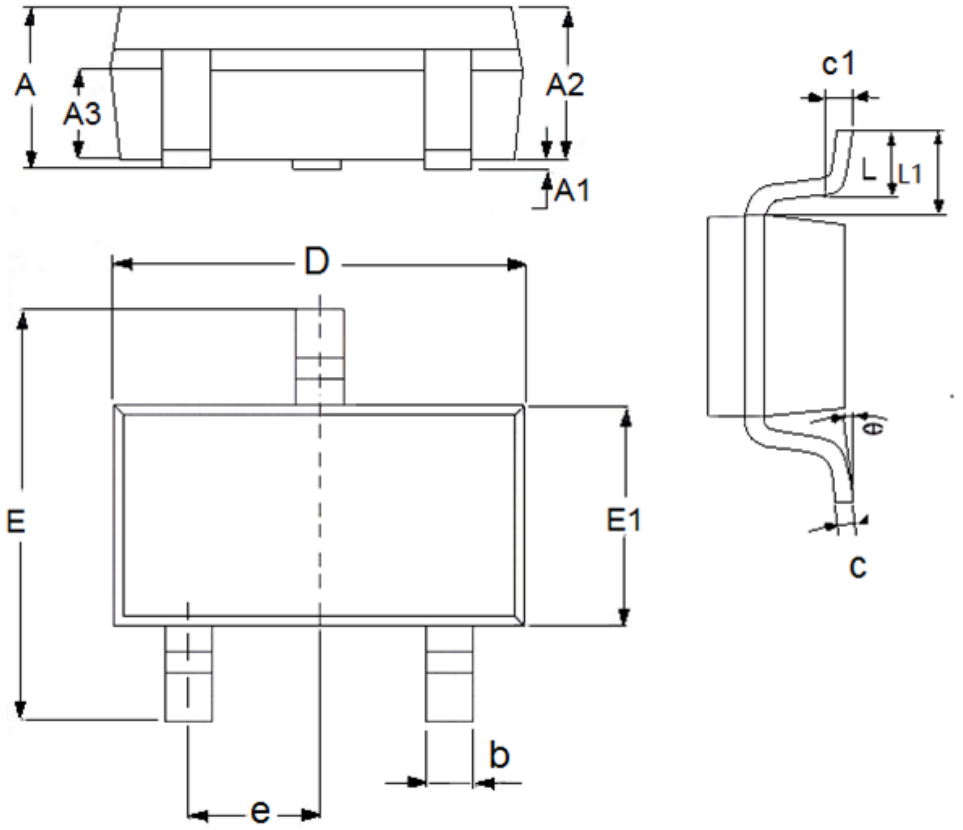
Packaging Information

- SOT89-3



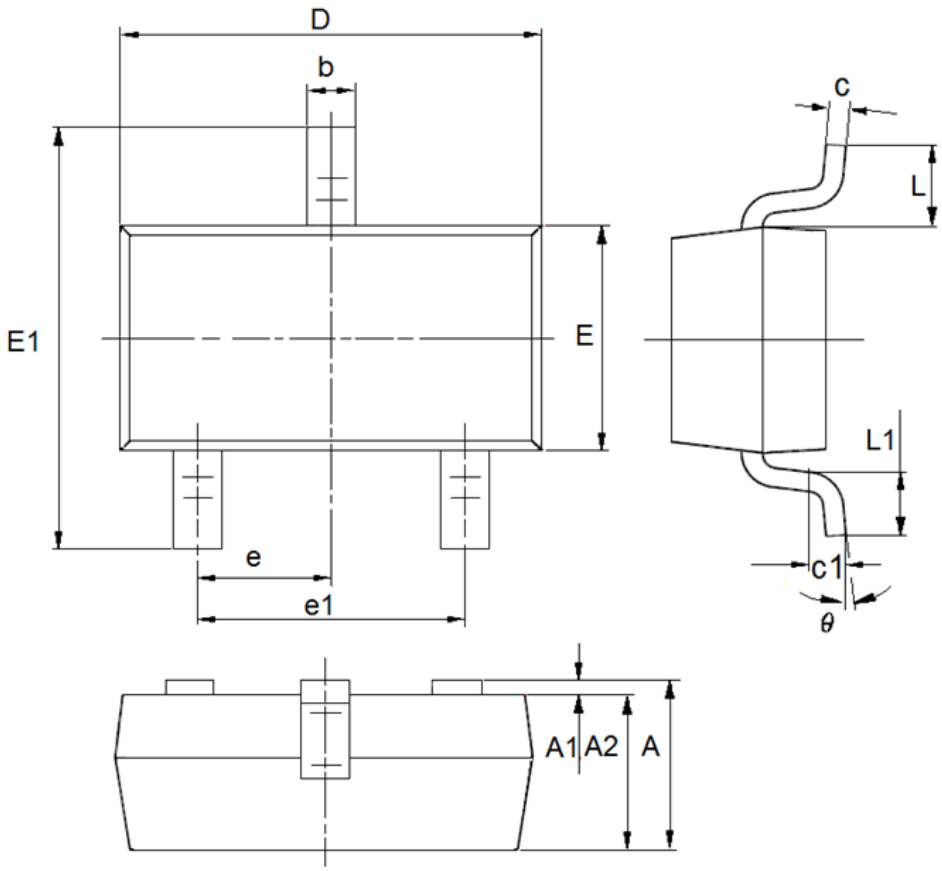
DIM	Millimeters		Inches	
	Min	Max	Min	Max
A	1.4	1.6	0.0551	0.063
b	0.32	0.52	0.0126	0.0205
b1	0.4	0.58	0.0157	0.0228
c	0.35	0.45	0.0138	0.01772
D	4.4	4.6	0.1732	0.1811
D1	1.55(TYP)		0.061(TYP)	
D2	1.75(TYP)		0.0689(TYP)	
e1	3(TYP)		0.1181(TYP)	
E	2.3	2.6	0.0906	0.1023
E1	3.94	4.4	0.1551	0.1732
E2	1.9(TYP)		0.0748(TYP)	
e	1.5(TYP)		0.0591(TYP)	
L	0.8	1.2	0.0315	0.0472
θ	45°		45°	

● SOT23-3



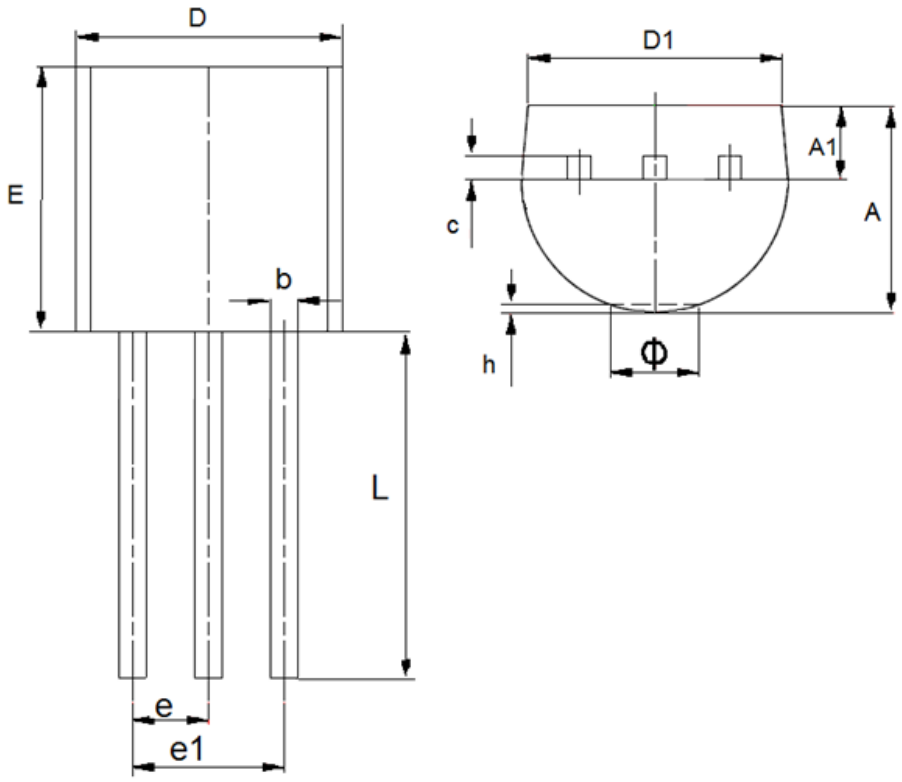
DIM	Millimeters		Inches	
	Min	Max	Min	Max
A	1	1.5	0.0394	0.0591
A1	0	0.15	0	0.0059
A2	0.9	1.3	0.0354	0.0512
A3	0.6	0.7	0.0236	0.0276
b	0.25	0.5	0.0098	0.0197
c	0.1	0.25	0.0039	0.0098
D	2.8	3.1	0.1102	0.122
E	2.6	3.1	0.1023	0.122
E1	1.5	1.8	0.0591	0.0709
e	0.95(TYP)		0.0374(TYP)	
L	0.25	0.6	0.0098	0.0236
L1	0.59(TYP)		0.0232(TYP)	
θ	0	8°	0	8°
c1	0.2(TYP)		0.0079(TYP)	

● SOT23



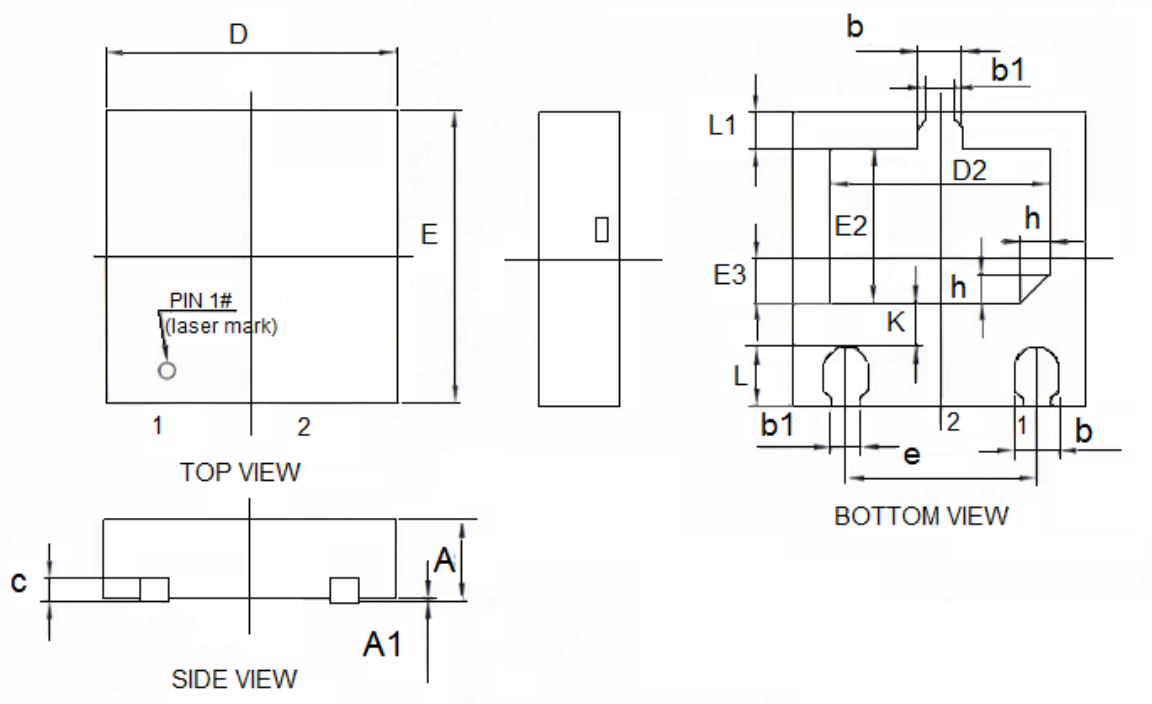
DIM	Millimeters		Inches	
	Min	Max	Min	Max
A	0.9	1.15	0.0354	0.0453
A1	0	0.14	0	0.0055
A2	0.9	1.05	0.0354	0.0413
b	0.28	0.52	0.011	0.0205
c	0.07	0.23	0.0028	0.0091
D	2.8	3	0.1102	0.1181
e1	1.8	2	0.0709	0.0787
E	1.2	1.4	0.0472	0.0551
E1	2.25	2.55	0.0886	0.1004
e	0.95(TYP)		0.0374(TYP)	
L	0.55(TYP)		0.0217(TYP)	
L1	0.25	0.55	0.0098	0.0217
θ	0	8°	0	8°
c1	0.25(TYP)		0.0098(TYP)	

● TO-92



DIM	Millimeters		Inches	
	Min	Max	Min	Max
A	3.3	3.7	0.1299	0.1457
A1	1.1	1.4	0.0433	0.0551
b	0.38	0.55	0.015	0.0217
c	0.36	0.51	0.0142	0.0201
D	4.3	4.7	0.1693	0.185
D1	3.43	—	0.135	—
E	4.3	4.7	0.1693	0.185
e	1.27		0.05	
e1	2.44	2.64	0.0961	0.1039
L	14.1	14.5	0.5551	0.5709
h	0	0.38	0	0.015
Φ	—	1.6	—	0.063

● DFN3L(2.0*2.0*0.55-1.30)



DIM	Millimeters		Inches	
	Min	Max	Min	Max
A	0.5	0.6	0.0197	0.0236
A1	0	0.05	0	0.002
c	0.152REF		0.006REF	
b	0.25	0.35	0.0098	0.0138
D	1.9	2.1	0.0748	0.0827
b1	0.2REF		0.0079REF	
E	1.9	2.1	0.0748	0.0827
E2	0.95	1.15	0.0374	0.0453
E3	0.2	0.4	0.0079	0.0157
e	1.3BSC		0.0512BSC	
L	0.35	0.45	0.0138	0.0177
L1	0.2	0.3	0.00787402	0.01181103
h	0.2REF		0.0079REF	
D2	1.4	1.6	0.0551	0.063
K	0.2	0.4	0.0079	0.01579

- The information described herein is subject to change without notice.
- Nanjing Micro One Electronics Inc is not responsible for any problems caused by circuits or diagrams described herein whose related industrial properties, patents, or other rights belong to third parties. The application circuit examples explain typical applications of the products, and do not guarantee the success of any specific mass-production design.
- Use of the information described herein for other purposes and/or reproduction or copying without the express permission of Nanjing Micro One Electronics Inc is strictly prohibited.
- The products described herein cannot be used as part of any device or equipment affecting the human body, such as exercise equipment, medical equipment, security systems, gas equipment, or any apparatus installed in airplanes and other vehicles, without prior written permission of Nanjing Micro One Electronics Inc.
- Although Nanjing Micro One Electronics Inc exerts the greatest possible effort to ensure high quality and reliability, the failure or malfunction of semiconductor products may occur. The user of these products should therefore give thorough consideration to safety design, including redundancy, fire-prevention measures, and malfunction prevention, to prevent any accidents, fires, or community damage that may ensue.

X-ON Electronics

Largest Supplier of Electrical and Electronic Components

Click to view similar products for Linear Voltage Regulators ***category:***

Click to view products by Micro One ***manufacturer:***

Other Similar products are found below :

LV56831P-E LV5684PVD-XH MCDTSA6-2R L7815ACV-DG PQ3DZ53U LV56801P-E TLE42794G L78L05CZ/1SX L78LR05DL-MA-E 636416C 714954EB BA033LBSG2-TR LV5680P-E L78M15CV-DG TLS202B1MBV33HTSA1 L79M05T-E TLS202A1MBVHTSA1 L78LR05D-MA-E NCV317MBTG NTE7227 LV5680NPVC-XH LT1054CN8 MP2018GZD-5-Z MP2018GZD-33-Z MIC5281-3.3YMM RT9078-28GQZ MC78L06BP-AP TA48LS05F(TE85L,F) TC47BR5003ECT TCR2LN12,LF(S TCR2LN28,LF(S TCR2LN30,LF(S TCR3DF295,LM(CT TCR3DF40,LM(CT BA178M20CP-E2 L78M12ABDT LR645N3-G-P003 LR645N3-G-P013 ZXTR2005P5-13 SCD7812BTG TCR3DF335,LM(CT TLE42994E V33 ZXTR2008K-13 ZXTR2005K-13 L88R05DL-E ADP3300ARTZ-2.7RL7 LM120K-15/883 IFX54441LDVXUMA1 LM317D2T-TR LM350T/NOPB