250mA CMOS LOW IQ
LOW-DROPOUT VOLTAGE REGULATOR

A6250

Description

The A6250 is a series of low dropout regulators to provide fixed positive output from 1.2V~6.0V (0.1V increasing).

The A6250 offers low quiescent current (Iq=3.0uA) to have longer battery life.

The A6250 offers current limit function to assure the stability of chip and power system. And it uses trimming technique to guarantee output voltage accuracy within ±2%

The A6250 is available in TO92, SOT-23 and SOT-89-3 package.

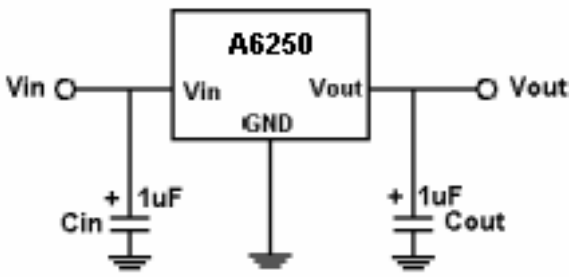
Features

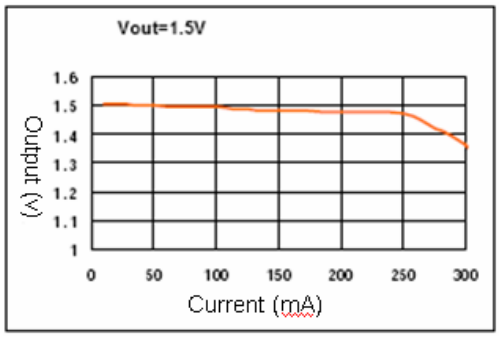
- Low Iq: 3.0uA (typ.)
- Max Output current 250mA
- Min in/out voltage difference
  170mV@100mA (Vout=3.0V)
  400mV@250mA (Vout=3.0V)
- Input Range: 1.5V~10V
- Output Range: 1.2V~6V (1V increasing)
- Output voltage accuracy within ±2%
- Current Limit Protection

Application

- Power Management for Battery Equipment
- MP3, PDA, DSC, Mouse, PS2 Games
- Voltage Reference

Typical Application



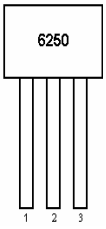
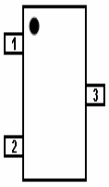
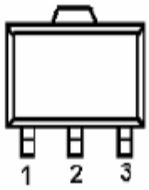


1. Recommend using 1uF tan cap as Cin for all application circuit
2. Recommend using 1uF tan cap to assure circuit stability

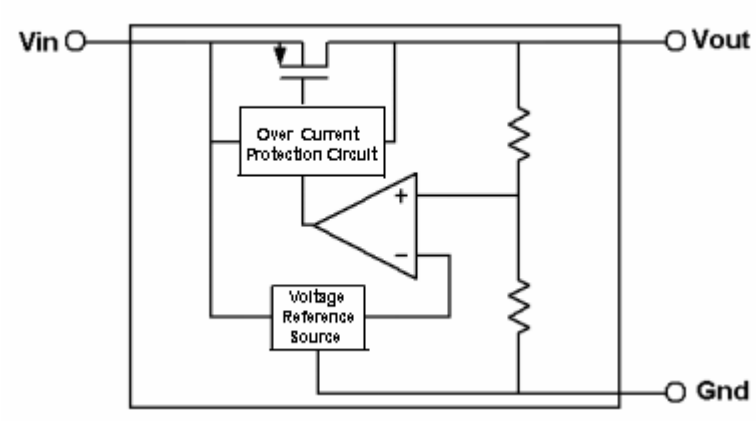
Ordering Information

Output Voltage	TO-92	SOT-23	SOT-89 (A)	SOT-89 (B)	SOT-89 (C)
1.2V	A6250Z-12	A6250E3-12	A6250K-12A	A6250K-12B	A6250K-12C
1.5V	A6250Z-15	A6250E3-15	A6250K-15A	A6250K-15B	A6250K-15C
2.1V	A6250Z-21	A6250E3-21	A6250K-21A	A6250K-21B	A6250K-21C
2.5V	A6250Z-25	A6250E3-25	A6250K-25A	A6250K-25B	A6250K-25C
3.0V	A6250Z-30	A6250E3-30	A6250K-30A	A6250K-30B	A6250K-30C
…….	…….	…….	…….	…….	…….
5.0V	A6250Z-50	A6250E3-50	A6250K-50A	A6250K-50B	A6250K-50C

Pin Description

Package	TO-92		SOT-23		SOT-89			
P/N	A6250Z-XX		A6250E3-XX		A6250K-XXA	A6250K-XXB	A6250XXC	
Pin#	Descrip.		Descrip.		Type A	Type B	Type C	
1	Vss		Vss		Vss	Vout	Vss	
2	Vin		Vout		Vout	Vss	Vin	
3	Vout		Vin		Vin	Vin	Vout	

Block Diagram



Absolute Maximum Ratings

Max Input Voltage	10V
Junction Temperature(T_J)	125°C
Environment Temperature (T_A)	-40°C ~ 85°C
Power Dissipation	
TO-92	0.5W
SOT-23	0.15W
SOT-89	0.25W
Storage Temperature (Ts)	-45°C~150°C
Lead Temperature and Time	260°C, 10S

Electrical Characteristics

Test Conditions: Cin=1uF, Cout=1uF, TA=25°C, unless otherwise noted.

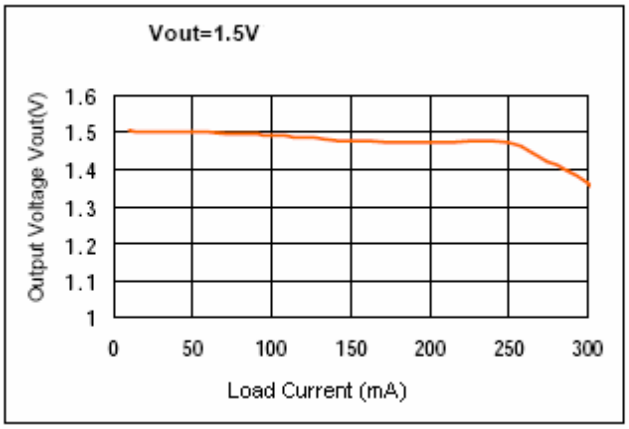
A6250-1.5V

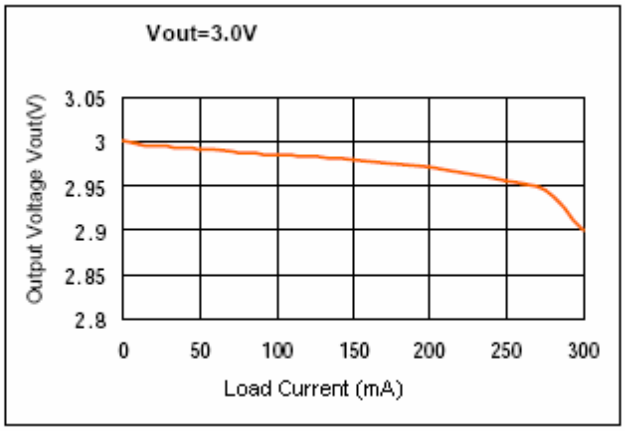
Symbol	Parameter	Conditions	Min	Typ	Max	Unit
Vin	Input Voltage				8	V
Vout	Output Voltage		2.47	1.5	1.53	V
Iout (Max)	Output Current		250			mA
Iq	Quiescent Current			3.0	5.0	uA
$\triangle V_{OI}$	Line Regulation	Iout=40mA 1.6V≦Vin≦8V		0.2	0.3	%/V
$\triangle V_{OL}$	Load Regulation	Vin=2.5V 1mA≦Iout≦100mA		20	40	mV
$\triangle V$	Dropout Voltage	Iout=100mA		270	400	mV
I_{CL}	Current Limit		250			mA
Temperature Coefficient				50		ppm/°C

A6250-3.0V

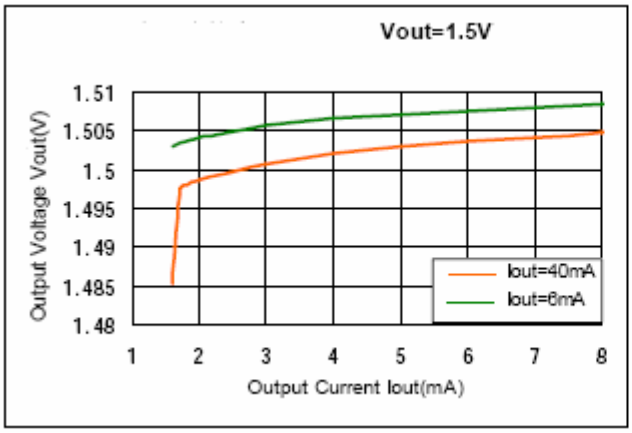
Symbol	Parameter	Conditions	Min	Typ	Max	Unit
Vin	Input Voltage				8	V
Vout	Output Voltage		2.94	3.0	3.06	V
Iout (Max)	Output Current		250			mA
Iq	Quiescent Current			3.0	5.0	uA
$\triangle V_{OI}$	Line Regulation	Iout=40mA 3.2V≦Vin≦8V		0.2	0.3	%/V
$\triangle V_{OL}$	Load Regulation	Vin=4.0V 1mA≦Iout≦100mA		20	40	mV
$\triangle V$	Dropout Voltage	Iout=100mA		170	300	mV
		Iout=200mA		320	500	
I_{CL}	Current Limit		250			mA
Temperature Coefficient				50		ppm/°C

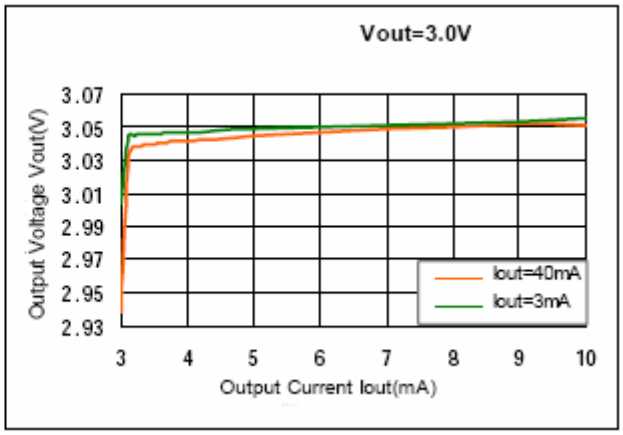
1. Load Characteristic



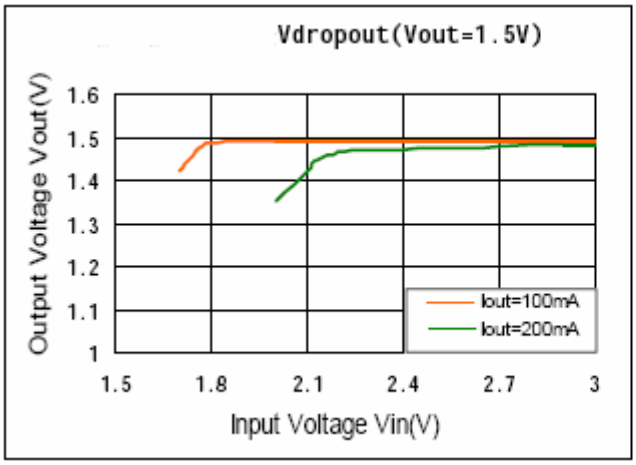


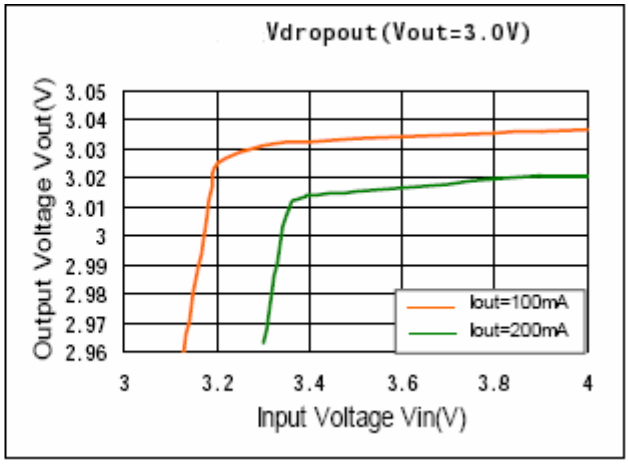
2. Voltage Linearity Characteristic





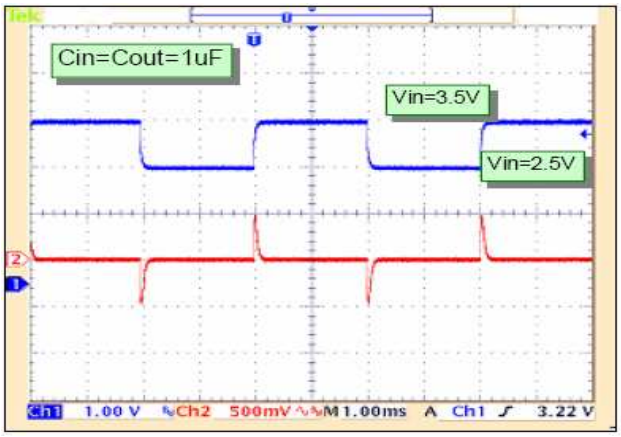
3. Input Voltage vs Output Voltage



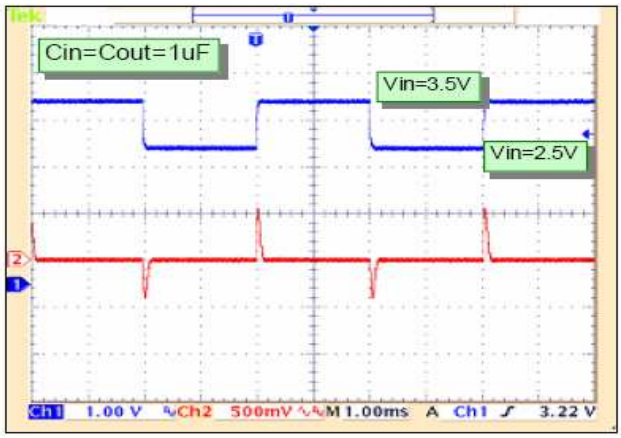


4. Transient Response

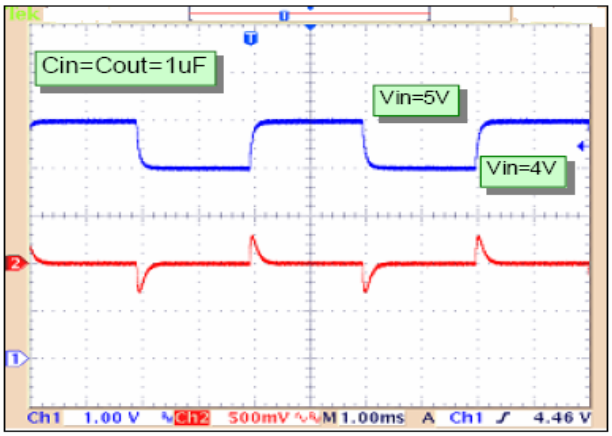
Vout=1.5V, Iout=10mA



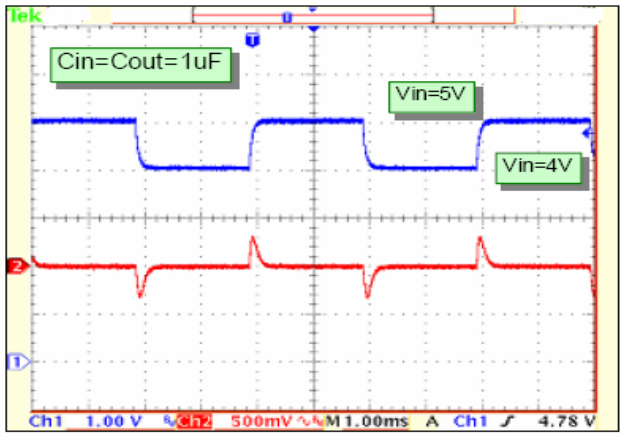
Vout=1.5V, Iout=1mA



Vout=3.0V, Iout=10mA

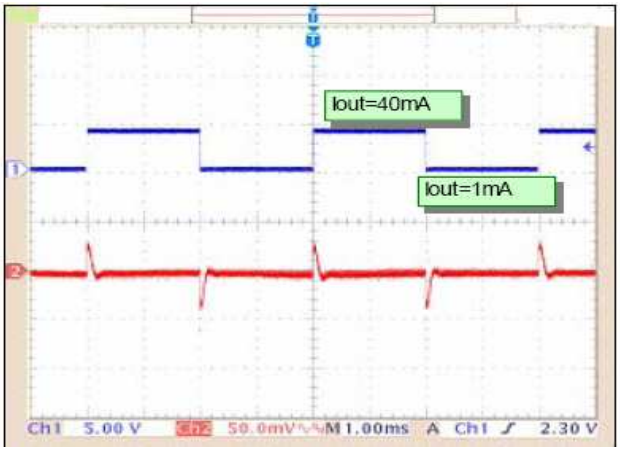


Vout=3.0V, Iout=1mA

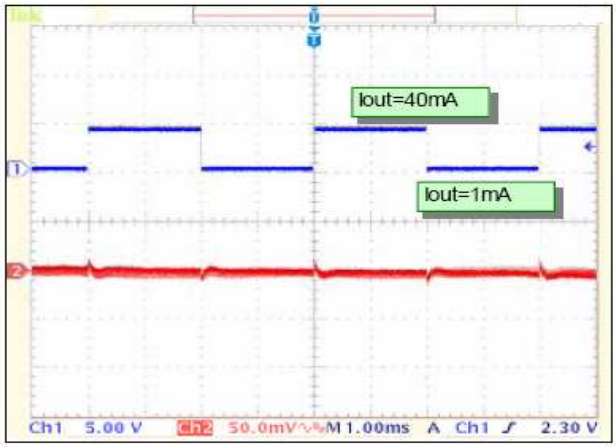


5. Output Transient Response

Vout=1.5V

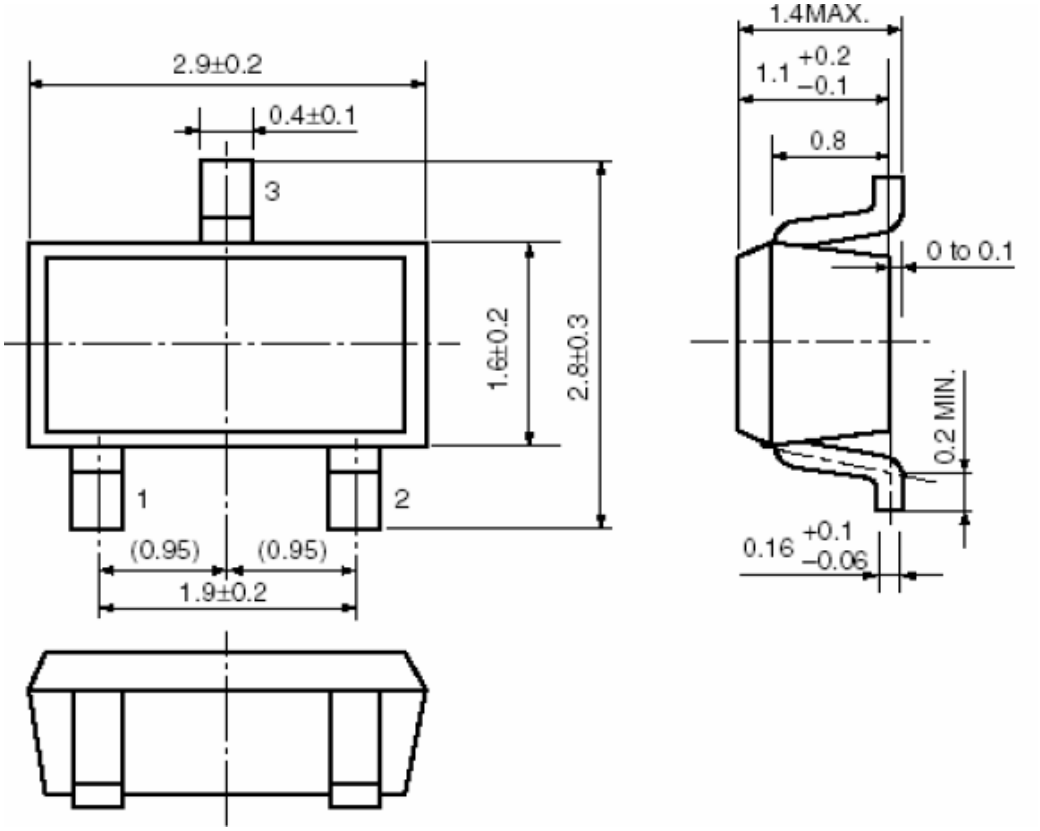


Vout=3.0V

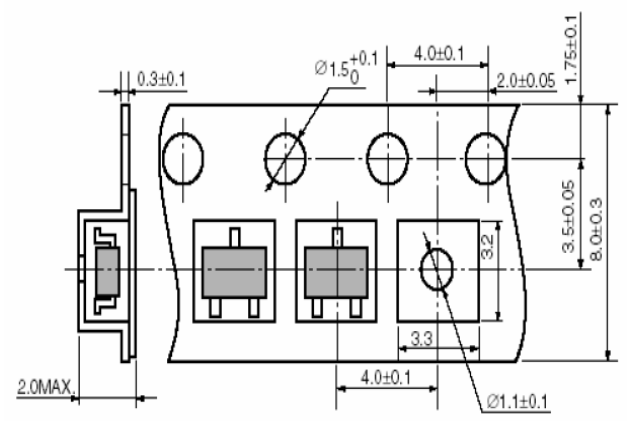


Package Information

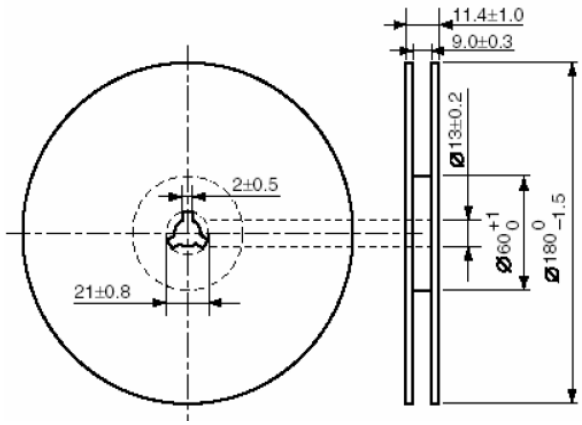
Dimension in SOT-23 (Unit: mm)



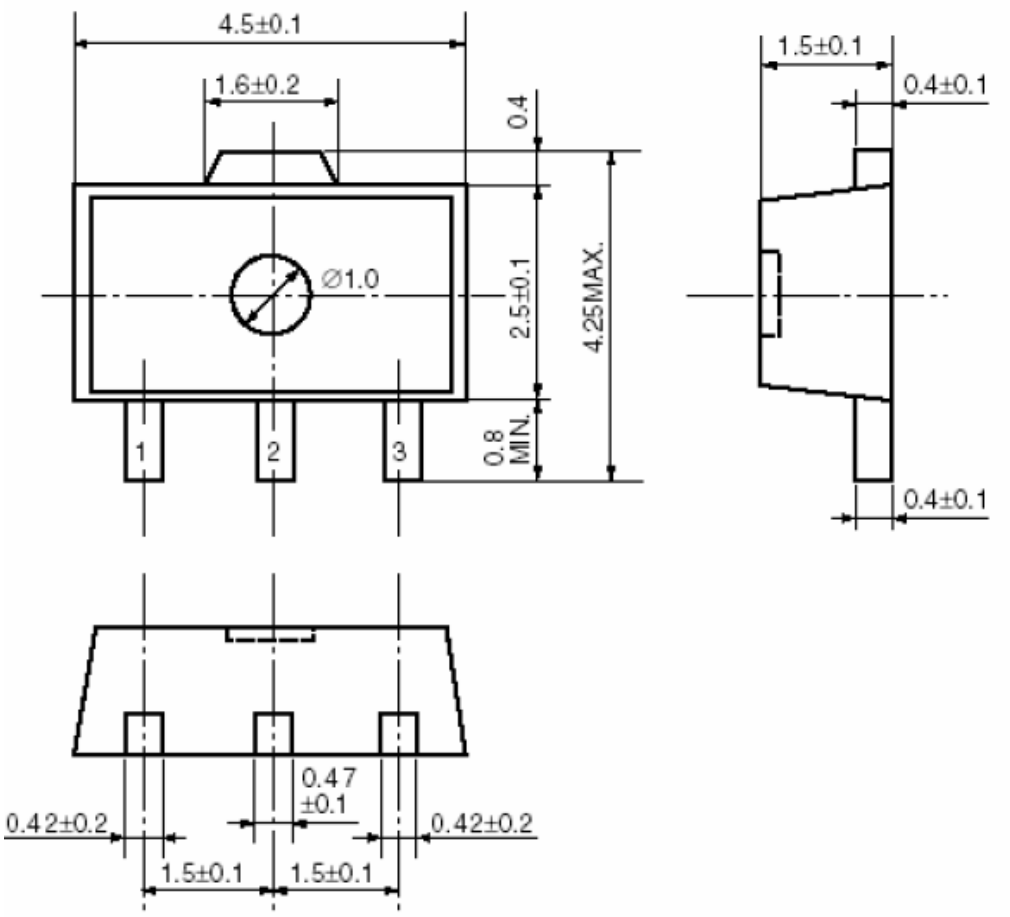
Tape Dimension



Tape & Reel Dimension

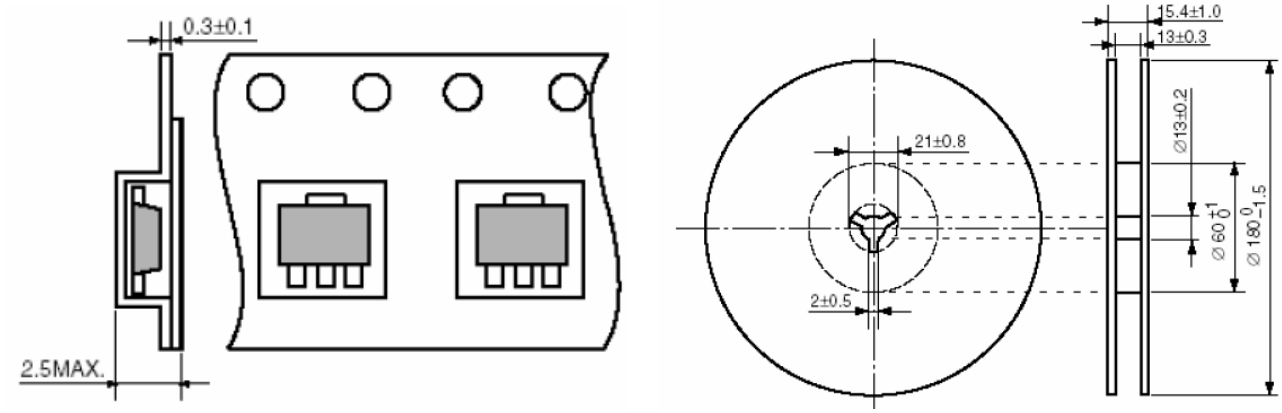


Dimension in SOT-89 (Unit: mm)



Tape Dimension

Tape & Reel Dimension



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