



#### Product Summary

The GPL6205 series are a group of positive voltage regulators manufactured by CMOS technologies with high ripple rejection, ultra-low noise, low power consumption and low dropout voltage, which can prolong battery life in portable electronics. The GPL6205 series work with low-ESR ceramic capacitors, reducing the amount of board space necessary for power applications. The GPL6205 series consume less than 0.1µA in shutdown mode and have fast turn-on time less than 50µS. The series are very suitable for the battery-powered equipments, such as RF applications and other systems requiring a quiet voltage source.

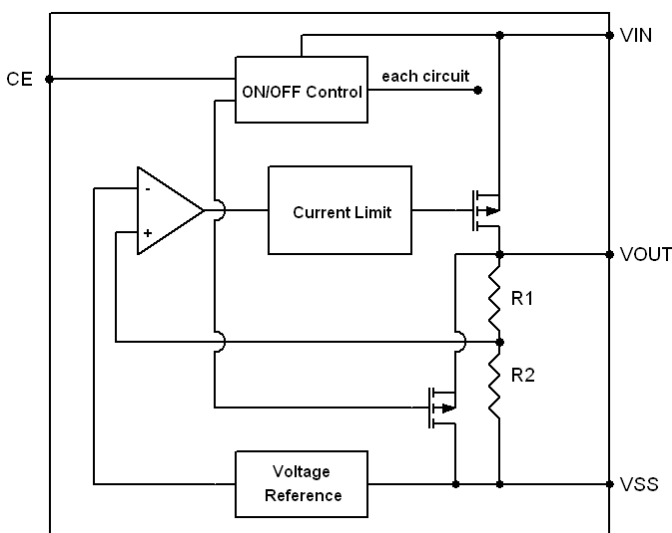
#### Features

- Low Quiescent Current: 50µA
- Low Output Noise: 40µVRMS(10Hz~100kHz)
- Operating Voltage Range: 2.0V~6.0V
- Low Dropout Voltage: 150mV@150mA
- Output Voltage: 1.2~ 5.0V
- High Accuracy: ±2%(Typ.)
- TTL-Logic-Controlled Shutdown Input
- Excellent Line and Load Transient Response
- Built-in Current Limiter, Short-Circuit Protection

#### Applications

- Cellular and Smart Phones
- Radio control systems
- Laptop, Palmtops and PDAs
- Digital Still and Video Cameras
- MP3, MP4 Player
- Battery-Powered Equipment

#### Block Diagram

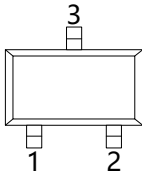
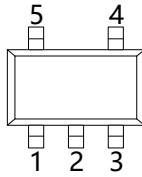
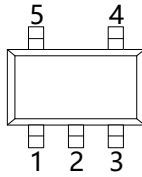
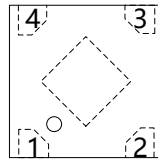
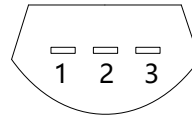
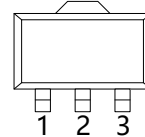
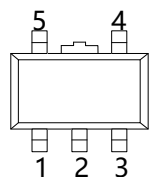


#### Order Information

GPL6205V①②

Designator	Description
①	Output Voltage e.g. 1.8V=18
②	Package: SOT-23-3L=K3 SOT-23-5L=K5 WBFBP-04C(DFN1*1-4)=H4 SOT-89-3L=KE SOT-89-5L=KT TO-92=Z

## Pin Configuration

**SOT-23-3**

**SOT-23-5**

**SOT-353**

**WFBFP-04C**

**TO-92**

**SOT-89-3**

**SOT-89-5**


Pin Number			Pin Name	Function
SOT-23-3	TO-92	SOT-89-3		
1	1	1	$V_{SS}$	Ground
2	3	3	$V_{OUT}$	Output
3	2	2	$V_{IN}$	Power input

Pin Number		Pin Name	Function
SOT-23-5L	SOT-353		
1	1	$V_{IN}$	Power Input Pin
2	2	$V_{SS}$	Ground
3	3	CE	Chip Enable Pin
4	4	NC	No Connection
5	5	$V_{OUT}$	Output Pin

### WFBFP-04C

Pin Number	Pin Name	Function
1	$V_{OUT}$	Output Pin
2	$V_{SS}$	Ground
3	CE	Chip Enable Pin
4	$V_{IN}$	Power Input Pin

### SOT-89-5L

Pin Number	Pin Name	Function
1	$V_{OUT}$	Output Pin
2	$V_{SS}$	Ground
3	NC	No Connection
4	CE	Chip Enable Pin
5	$V_{IN}$	Power Input Pin

## Absolute Maximum Ratings ( $T_a=25^\circ\text{C}$ , unless otherwise noted)

Parameter	Symbol	Ratings	Units	
Input Voltage	$V_{IN}$	$V_{SS}-0.3\sim V_{SS}+7$	V	
Output Voltage	$V_{OUT}$	$V_{SS}-0.3\sim V_{IN}+0.3$	V	
Output Current	$I_{OUT}$	600	mA	
Power Dissipation	SOT-23	$P_D$	0.37	W
	SOT-23-5	$P_D$	0.25	W
	SOT-89/TO-92	$P_D$	0.50	W
	DFN1*1-4	$P_D$	0.40	W
Operating Free Air Temperature Range	$T_A$	-40~85	$^\circ\text{C}$	
Operating Junction Temperature Range	$T_j$	-40~125	$^\circ\text{C}$	
Storage Temperature	$T_{stg}$	-40~125	$^\circ\text{C}$	
Lead Temperature(Soldering, 10 sec)	$T_{solder}$	260	$^\circ\text{C}$	

## Electrical Characteristics( $V_{IN}=V_{OUT}+1\text{V}$ , $C_{IN}=C_{OUT}=1\mu\text{F}$ , $T_A=25^\circ\text{C}$ , unless otherwise specified)

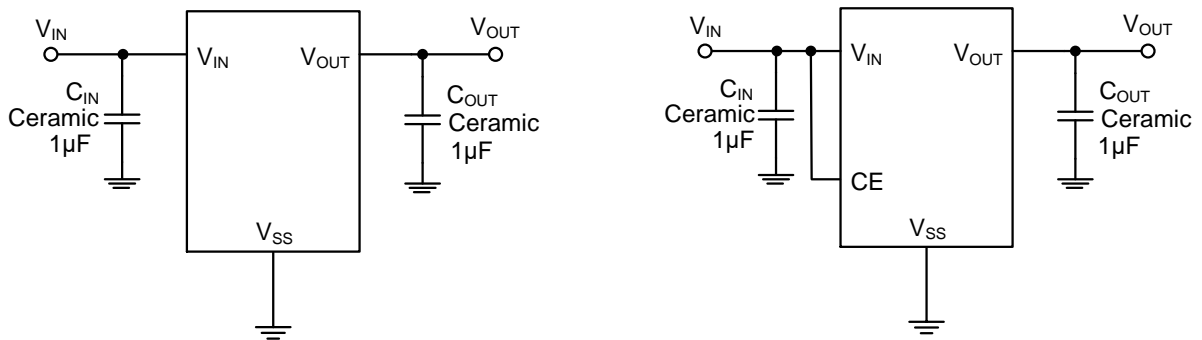
Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Output Voltage	$V_{OUT(E)}^{2)}$	$I_{OUT}=1\text{mA}$	$V_{OUT}*0.98$	$V_{OUT}$	$V_{OUT}*1.02$	V
Supply Current	$I_{SS}$	$I_{OUT}=0$		50	100	$\mu\text{A}$
Standby Current	$I_{STBY}$	$CE = V_{SS}$			0.1	$\mu\text{A}$
Output Current	$I_{OUT}$	—	500			mA
Dropout Voltage3)	$V_{dif}$	$I_{OUT}=150\text{mA}$ $V_{OUT}\geq 2.8\text{V}$		150		mV
Load Regulation	$\Delta V_{OUT}$	$V_{IN}=V_{OUT}+1\text{V}$ , $1\text{mA}\leq I_{OUT}\leq 100\text{mA}$		10		mV
Line Regulation		$I_{OUT}=10\text{mA}$ $V_{OUT}+1\text{V}\leq V_{IN}\leq 6\text{V}$		0.01	0.2	%/V
Output Voltage Temperature Characteristics		$I_{OUT}=10\text{mA}$ $-40\leq T\leq +85$		100		ppm
Short Current	$I_{Short}$	$V_{OUT}=V_{SS}$		100		mA
Input Voltage	$V_{IN}$	—	2.0		6.0	V
Power Supply Rejection Rate	217Hz	$I_{OUT}=50\text{mA}$		80		dB
	1kHz			75		
	10kHz			70		
CE "High" Voltage	$V_{CE"H"}$		1.5		$V_{IN}$	V
CE "Low" Voltage	$V_{CE"L"}$				0.3	V

- 1)  $V_{OUT}$ : Specified Output Voltage.
- 2)  $V_{OUT(E)}$ : Effective Output Voltage ( i.e. The output voltage when  $V_{IN} = (V_{OUT} + 1.0\text{V})$  and maintain a certain  $I_{OUT}$  Value).
- 3)  $V_{dif}$ : The Difference Of Output Voltage And Input Voltage When Input Voltage Is Decreased Gradually Till Output Voltage Equals To 98% Of  $V_{OUT(E)}$ .

**Dropout Voltage Chart**

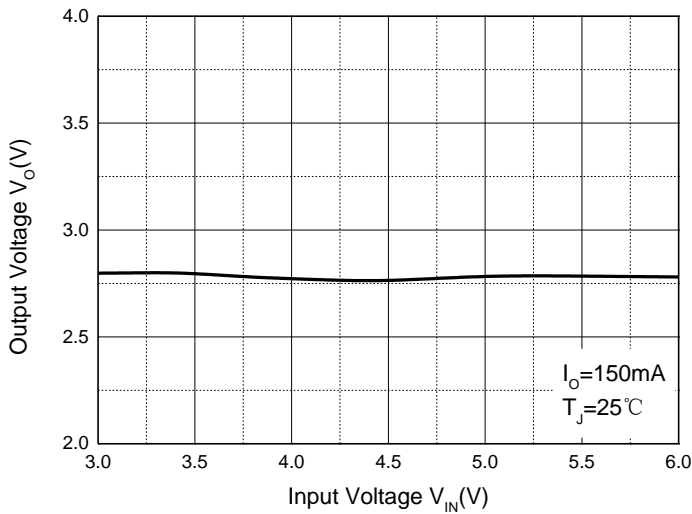
Setting Output Voltage $V_{OUT}(V)$	Dropout Voltage(mV) @ $I_{OUT}=150mA$	
	Typ.	Max.
1.5	270	600
1.8	230	600
2.5	180	400
2.8	160	220
3.0	155	220
3.3	150	220

**Typical Application**

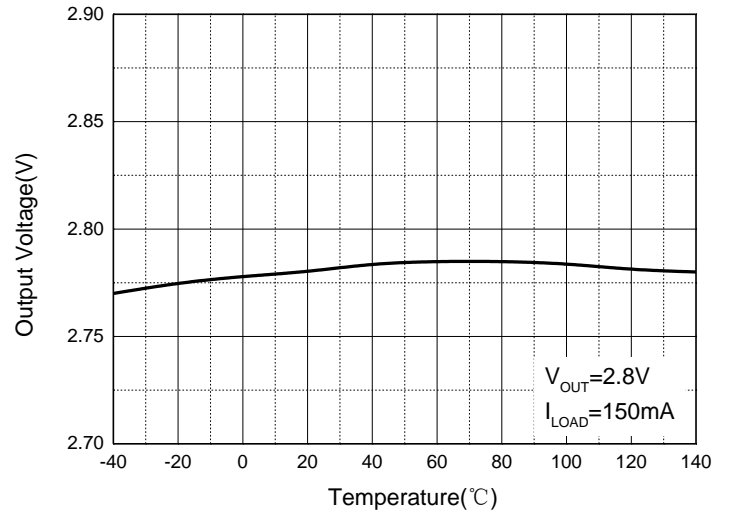


## Typical Performance Characteristics

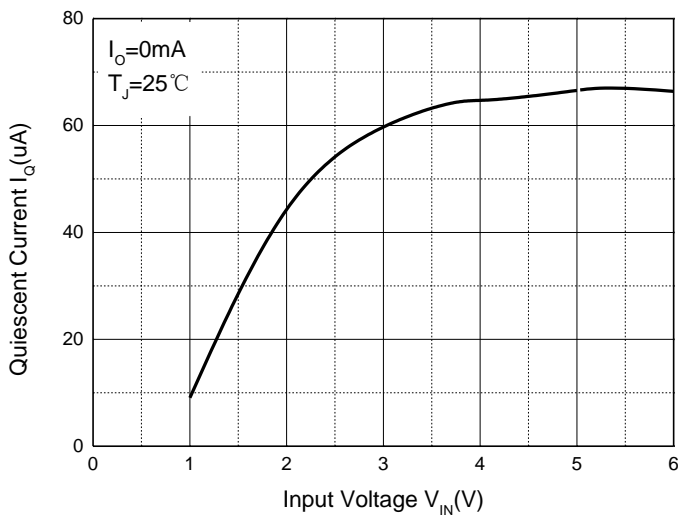
### Output Characteristics



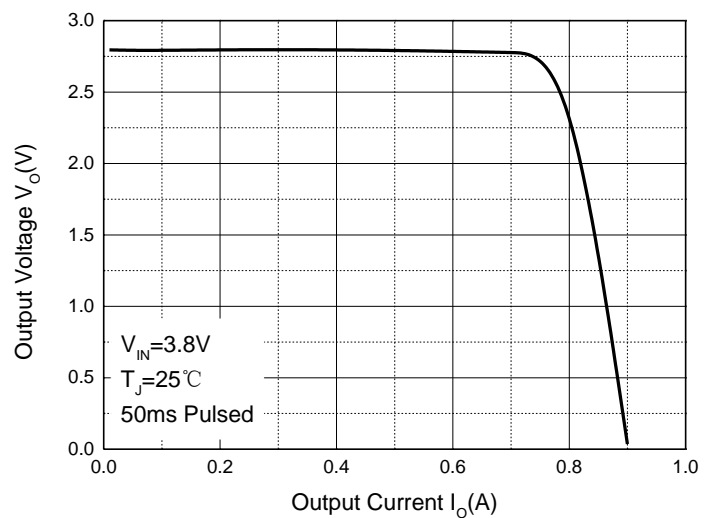
### Output Voltage vs. Temperature



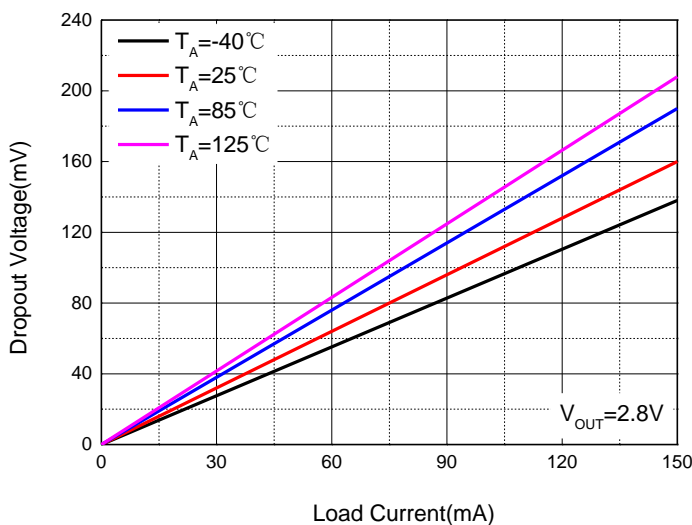
### Quiescent Current



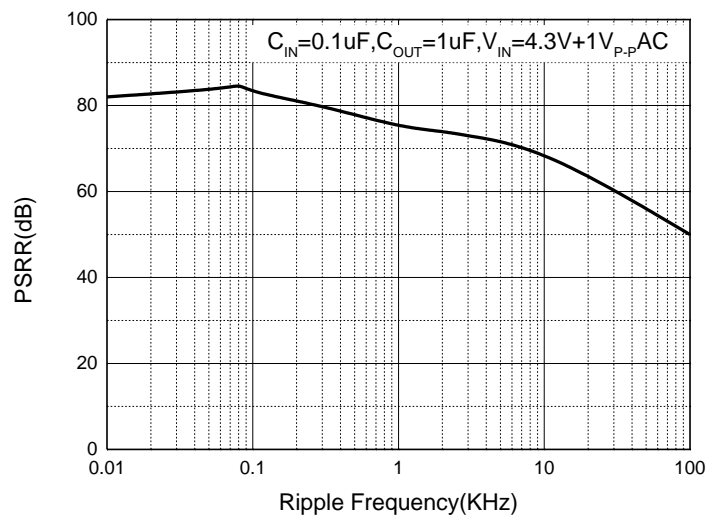
### Current Cut-off Grid Voltage



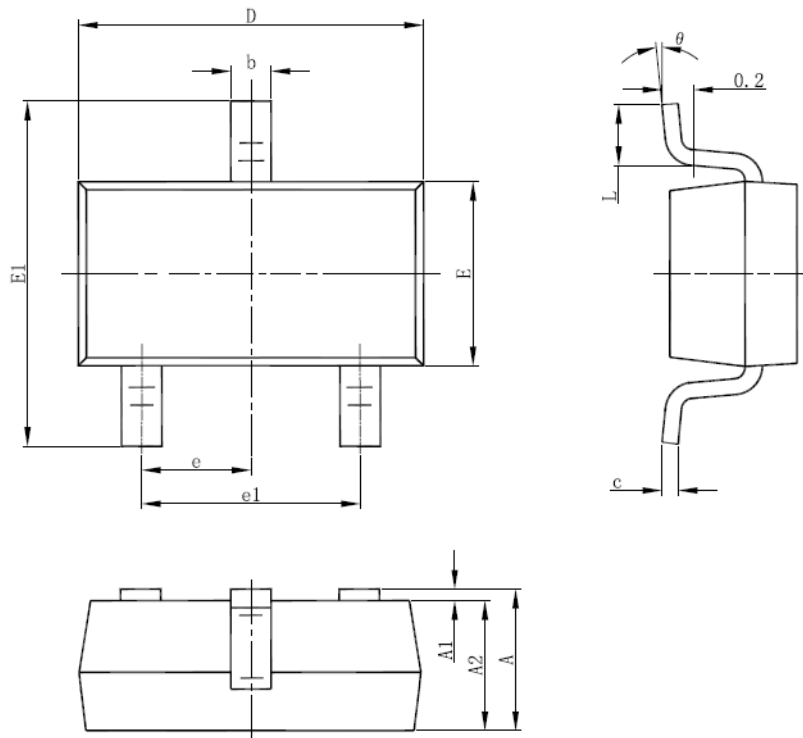
### Dropout Voltage vs. Load Current



### PSRR vs. Frequency

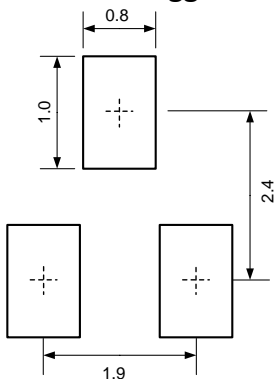


## SOT-23-3L Package Outline Dimensions



Symbol	Dimensions in millimeters	
	Min.	Max.
A	1.050	1.250
A1	0.000	0.100
A2	1.050	1.150
b	0.300	0.500
c	0.100	0.200
D	2.820	3.020
E	1.500	1.700
E1	2.650	2.950
e	0.950TYP	
e1	1.800	2.000
L	0.300	0.600
θ	0°	8°

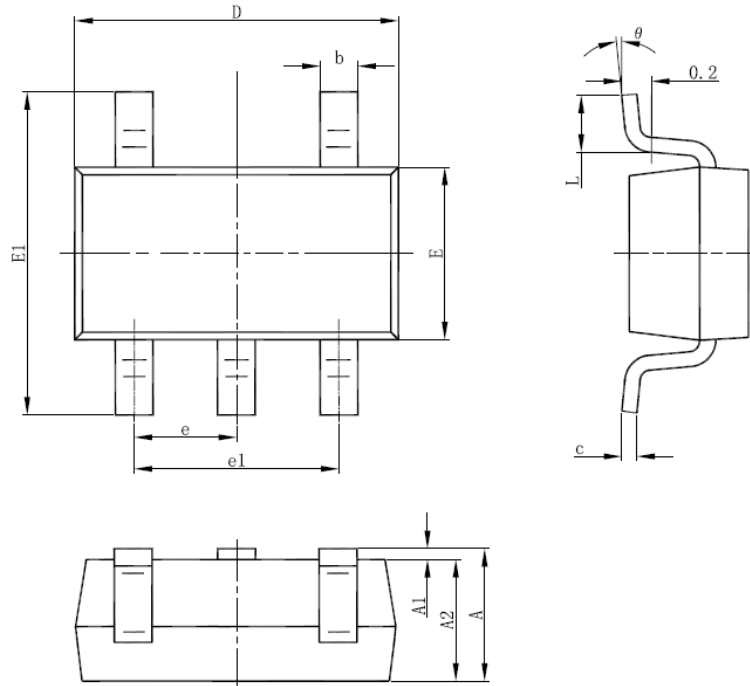
### SOT-23-3L Suggested Pad Layout (Unit: mm)



#### Notes:

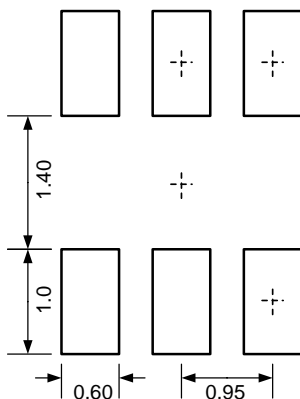
1. General tolerance:  $\pm 0.05\text{mm}$ .
2. The pad layout is for reference purposes only.

## SOT-23-5L Package Outline Dimensions



Symbol	Dimensions In Millimeters	
	Min.	Max.
A	1.050	1.250
A1	0.000	0.100
A2	1.050	1.150
b	0.300	0.500
c	0.100	0.200
D	2.820	3.020
E	1.500	1.700
E1	2.650	2.950
e	0.950(BSC)	
e1	1.800	2.000
L	0.300	0.600
$\theta$	0°	8°

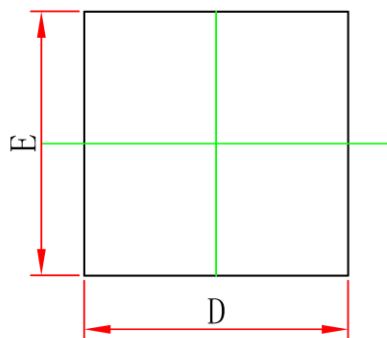
### SOT-23-5L Suggested Pad Layout (Unit: mm)



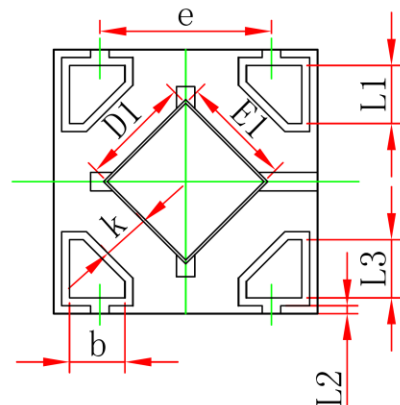
Notes:

1. General tolerance:  $\pm 0.05$ mm.
2. The pad layout is for reference purposes only.

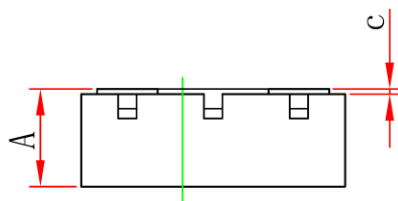
## WBFBP-04C Package Outline Dimensions



TOP VIEW  
[顶视图]



BOTTOM VIEW  
[背视图]

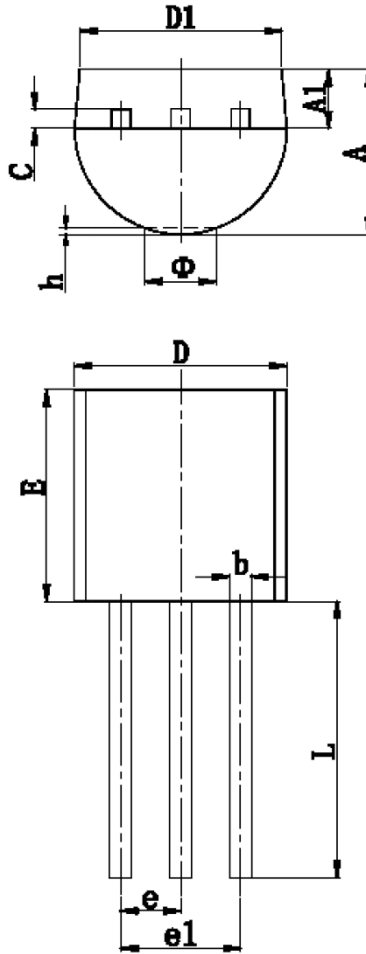


SIDE VIEW  
[侧视图]

Symbol	Dimensions in millimeters		Dimensions in inches	
	Min.	Max.	Min.	Max.
A	0.335	0.495	0.013	0.016
D	0.950	1.050	0.037	0.041
E	0.950	1.050	0.037	0.041
D1	0.037	0.047	0.015	0.019
E1	0.037	0.047	0.015	0.019
k	0.17MIN		0.007MIN	
b	0.160	0.260	0.006	0.010
c	0.010	0.090	0.000	0.004
e	0.600	0.700	0.024	0.028
L1	0.185	0.255	0.007	0.010
L2	0.030REF		0.001REF	
L3	0.185	0.255	0.007	0.010

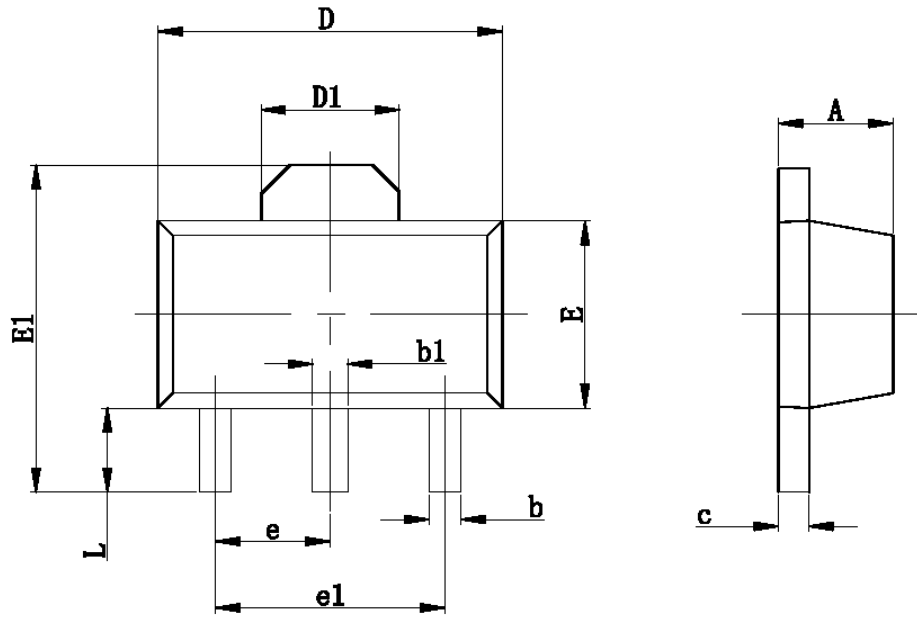


## TO-92 Package Outline Dimensions



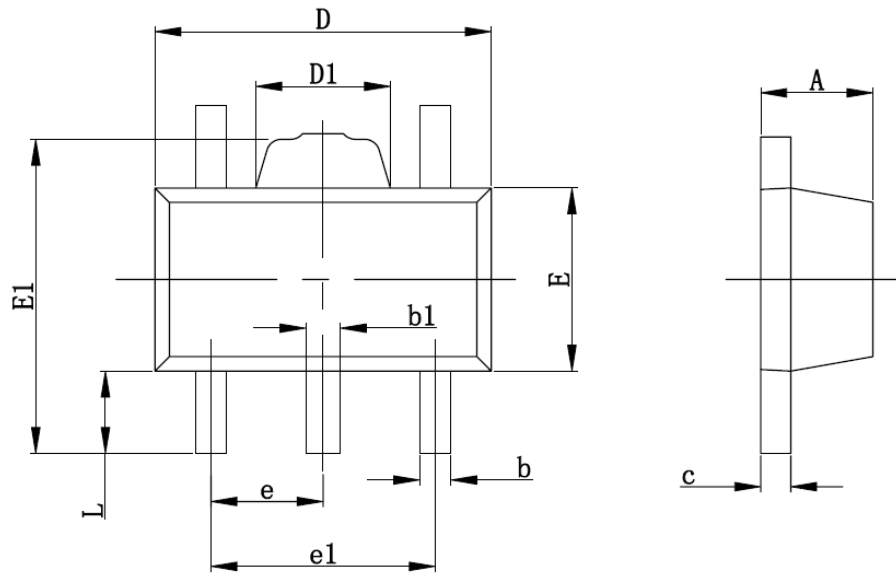
Symbol	Dimensions in millimeters		Dimensions in inches	
	Min.	Max.	Min.	Max.
A	3.300	3.700	0.130	0.146
A1	1.100	1.400	0.043	0.055
b	0.380	0.550	0.015	0.022
c	0.360	0.510	0.014	0.020
D	4.400	4.700	0.173	0.185
D1	3.430		0.135	
E	4.300	4.700	0.169	0.185
e	1.270TYP		0.050TYP	
e1	2.440	2.640	0.096	0.104
L	14.100	14.500	0.555	0.571
$\phi$		1.600		0.063
h	0.000	0.380	0.000	0.015

## SOT-89-3L Package Outline Dimensions



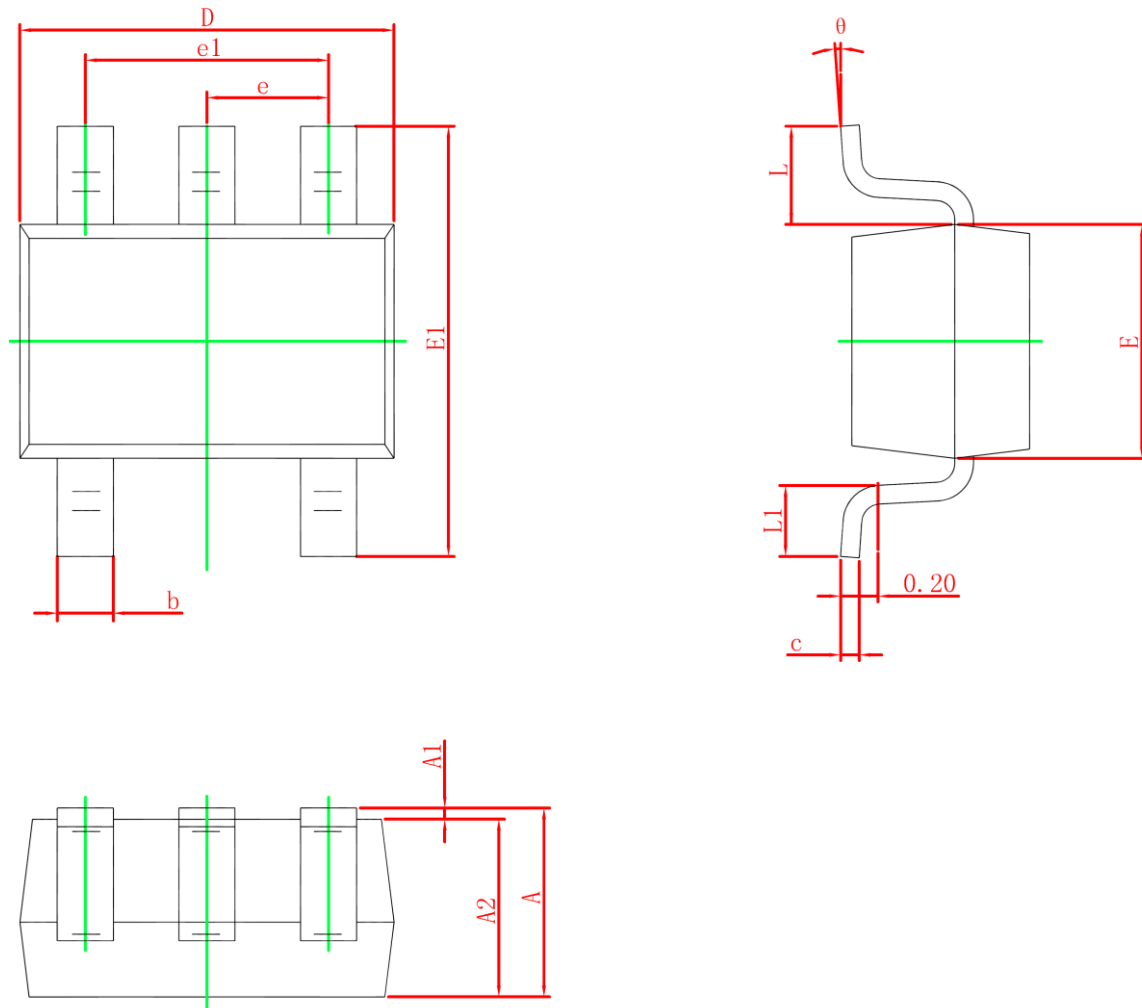
Symbol	Dimensions in millimeters		Dimensions in inches	
	Min.	Max.	Min.	Max.
A	1.400	1.600	0.055	0.063
b	0.320	0.520	0.013	0.197
b1	0.400	0.580	0.016	0.023
c	0.350	0.440	0.014	0.017
D	4.400	4.600	0.173	0.181
D1	1.550REF		0.061REF	
E	2.300	2.600	0.091	0.102
E1	3.940	4.250	0.155	0.167
e	1.500TYP		0.060TYP	
e1	3.000TYP		0.118TYP	
L	0.900	1.200	0.035	0.047

## SOT-89-5L Package Outline Dimensions



Symbol	Dimensions in millimeters		Dimensions in inches	
	Min.	Max.	Min.	Max.
A	1.400	1.600	0.055	0.063
b	0.320	0.520	0.013	0.197
b1	0.360	0.560	0.014	0.022
c	0.350	0.440	0.014	0.017
D	4.400	4.600	0.173	0.181
D1	1.400	1.800	0.055	0.071
E	2.300	2.600	0.091	0.102
E1	3.940	4.250	0.155	0.167
e	1.500TYP		0.060TYP	
e1	2.900	3.100	0.114	0.122
L	0.900	1.100	0.035	0.043

## SOT-353 Package Outline Dimensions



Symbol	Dimensions In Millimeters	
	Min.	Max.
A	0.900	1.100
A1	0.000	0.100
A2	0.900	1.000
b	0.150	0.350
c	0.110	0.175
D	2.000	2.200
E	1.150	1.350
E1	2.150	2.450
e	0.650 TYP	
e1	1.200	1.400
L	0.525 REF	
L1	0.260	0.460
$\theta$	0°	8°

单击下面可查看定价，库存，交付和生命周期等信息

[>>GP\(格瑞宝\)](#)