



**TX72XX Series**

**350mA Low Power LDO**

**Features**

- Low voltage drop: 0.17V@100mA
- High input voltage: 15V
- Low temperature coefficient
- Large Output Current: >0.35A
- Low Quiescent Current: 1.5uA
- Output voltage accuracy: tolerance  $\pm 2\%$
- Built-in current limiter
- SOT89 and SOT23-3 package

**Applications**

- Battery-powered equipment
- Hand-Hold Equipment
- GRS Receivers
- Wireless LAN

**General Description**

The TX72XX series is a group of positive voltage output, three-pin regulators, that provide a high current even when the input/output voltage differential is small. Low power consumption and high accuracy is achieved through CMOS and laser trimming technologies.

The TX72XX consists of a high-precision voltage reference, an error amplification circuit, and a current limited output driver. Transient response to load variations have improved in comparison to the existing series. SOT89 and SOT23-3 packages are available.

**Selection Table**

Part No.	Output Voltage	Package	Marking
TX7228xx	2.8V	SOT89 SOT23	
TX7230xx	3.0V		
TX7233xx	3.3V		
TX7236xx	3.6V		
TX7250xx	5.0V		

**Order Information**

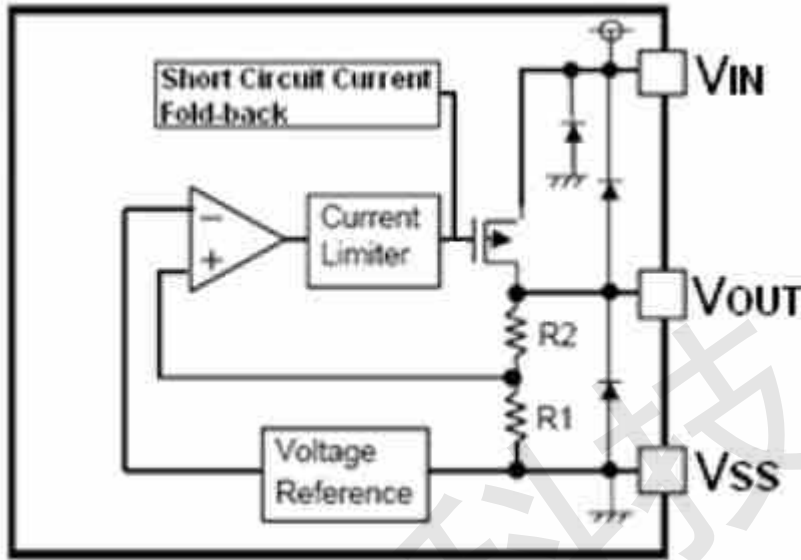
TX72①②③④

Designator	Symbol	Description
① ②	Integer	Output Voltage(2.1~5.0V)
	P	Package:SOT89
	M	Package:SOT23-3
④	R	RoHS / Pb Free
	G	Halogen Free

Note: "①②" stands for output voltages. Other voltages can be specially customized

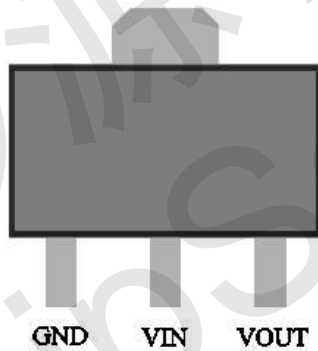


Block Diagram

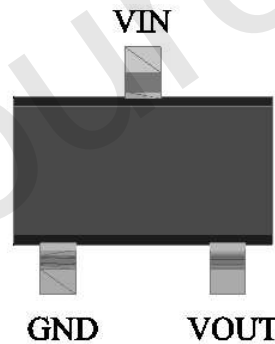


Pin Assignment

SOT89 (Top view)



SOT23-3 (Top view)



Absolute Maximum Ratings

Supply Voltage .....-0.3V to 18V

Storage Temperature .....-40°C to 125°C

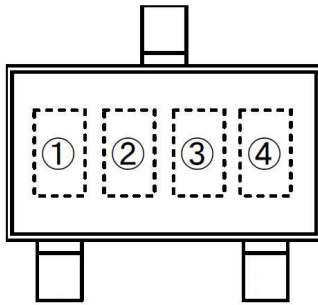
Operating Temperature .....-40°C to 85°C

Note: These are stress ratings only. Stresses exceeding the range specified under “Absolute Maximum Ratings” may cause substantial damage to the device. Functional operation of this device at other conditions beyond those listed in the specification is not implied and prolonged exposure to extreme conditions may affect device reliability.



Marking Rule

(1) SOT23-3



SOT-23  
(TOP VIEW)

List of Product Name vs. Product Code

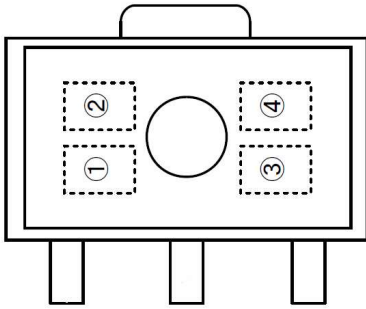
Product Name	Product Code		
	(1)	(2)	(3)
S-1206B12-M3T1G	S	A	A
S-1206B13-M3T1G	S	A	B
S-1206B14-M3T1G	S	A	C
S-1206B15-M3T1G	S	A	D
S-1206B16-M3T1G	S	A	E
S-1206B17-M3T1G	S	A	F
S-1206B18-M3T1G	S	A	G
S-1206B1J-M3T1G	S	A	H
S-1206B19-M3T1G	S	A	I
S-1206B20-M3T1G	S	A	J
S-1206B21-M3T1G	S	A	K
S-1206B22-M3T1G	S	A	L
S-1206B23-M3T1G	S	A	M
S-1206B24-M3T1G	S	A	N
S-1206B25-M3T1G	S	A	O
S-1206B26-M3T1G	S	A	P
S-1206B27-M3T1G	S	A	Q
S-1206B28-M3T1G	S	A	R
S-1206B2J-M3T1G	S	A	S
S-1206B29-M3T1G	S	A	T
S-1206B30-M3T1G	S	A	U
S-1206B31-M3T1G	S	A	V

Product Name	Product Code		
	(1)	(2)	(3)
S-1206B32-M3T1G	S	A	W
S-1206B33-M3T1G	S	A	X
S-1206B34-M3T1G	S	A	Y
S-1206B35-M3T1G	S	A	Z
S-1206B36-M3T1G	S	B	A
S-1206B37-M3T1G	S	B	B
S-1206B38-M3T1G	S	B	C
S-1206B39-M3T1G	S	B	D
S-1206B40-M3T1G	S	B	E
S-1206B41-M3T1G	S	B	F
S-1206B42-M3T1G	S	B	G
S-1206B43-M3T1G	S	B	H
S-1206B44-M3T1G	S	B	I
S-1206B45-M3T1G	S	B	J
S-1206B46-M3T1G	S	B	K
S-1206B47-M3T1G	S	B	L
S-1206B48-M3T1G	S	B	M
S-1206B49-M3T1G	S	B	N
S-1206B50-M3T1G	S	B	O
S-1206B51-M3T1G	S	B	P
S-1206B52-M3T1G	S	B	Q

Remark Please contact our sales office for products with output voltage values other than the above.



(2) SOT89



SOT-89  
(TOP VIEW)

Product Code: E

Output Voltage Code

Vout	Code	Vout	Code	Vout	Code
1.5V	1	2.7V	C	3.9V	O
1.6V	2	2.8V	D	4.0V	P
1.7V	3	2.9V	E	4.1V	Q
1.8V	4	3.0V	F	4.2V	R
1.9V	5	3.1V	G	4.3V	S
2.0V	6	3.2V	H	4.4V	T
2.1V	7	3.3V	I	4.5V	U
2.2V	8	3.4V	J	4.6V	V
2.3V	9	3.5V	K	4.7V	W
2.4V	0	3.6V	L	4.8V	X
2.5V	A	3.7V	M	4.9V	Y
2.6V	B	3.8V	N	5.0V	Z

Data Code: XX

Note: The last two of them are based on the time of this product which is the first time into production, and the third is the launch of this product ,it can be in 1 ~ 9 , which is expressed in "0" in October, in November with an "A", in December with "B"; the fourth is of the launch of the product, such as expressed in "0" in 2010, in "3" in 2013. For example: EZ81 represents TX7250PR product is first put into production in August in 2011.



## Electrical Characteristics

TX72XX for any output voltage

(Ta=25°C)

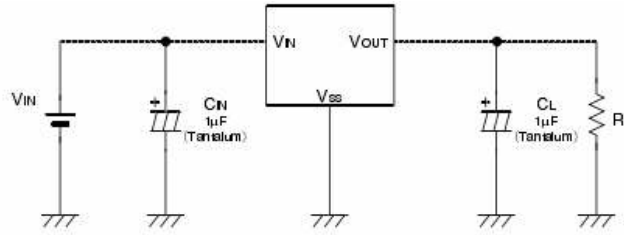
Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Output Voltage	Vout	Vin=Vout+1V 1.0mA≤Iout≤30mA	Vout×0.98	--	Vout×1.02	V
Output Current*1	Iout	Vin-Vout=1V	--	350	--	mA
Low dropout*2	Vdrop	Refer to the next table				
Line Regulation	$\frac{V_{OUT}}{V_{IN}} \frac{V_{OUT}}{V_{OUT}}$	1.6V≤Vin≤8V Iout=100mA	--	0.05	0.2	%/V
Load Regulation	ΔVout	Vin=Vout+1V 1.0mA≤Iout≤100mA	--	12	30	mV
Output voltage Temperature Coefficiency	$\frac{V_{OUT}}{Ta}$	Iout=30mA 0°C≤Ta≤70°C	--	±100	--	Ppm/°C
PSRR	PSRR	F=1KHz Vin=Vout+1V	--	40	--	dB
Supply Current	Iss1	--	--	1	2	uA
Input Voltage	Vin	--	--	--	15	V

### Electrical Characteristics by Output Voltage:

Output Voltage Vout(V)	Dropout Voltage Vdif (V)		
	Conditions	Typ.	Max.
Vout ≤ 2.0V	Iout=60 mA	0.1	0.12
2.0 < Vout ≤ 3.0	Iout=80 mA	0.12	0.14
3.0 < Vout ≤ 4.0	Iout=100 mA	0.16	0.18
4.0 < Vout ≤ 5.0		0.17	0.18
3.0 < Vout ≤ 4.0	Iout=200 mA	0.21	0.24
4.0 < Vout ≤ 6.0		0.20	0.22
3.0 < Vout ≤ 4.0	Iout=350 mA	0.7	0.75
4.0 < Vout ≤ 6.0		0.72	0.76



## Typical Application

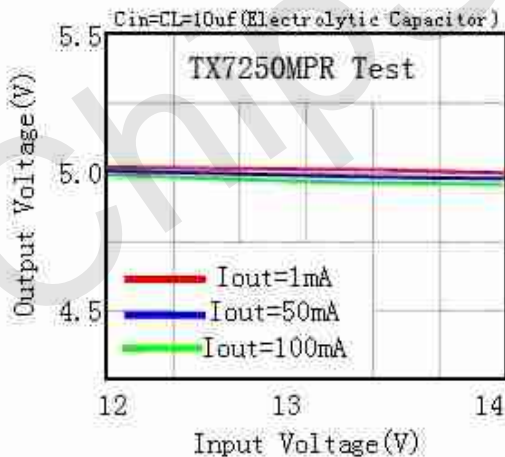
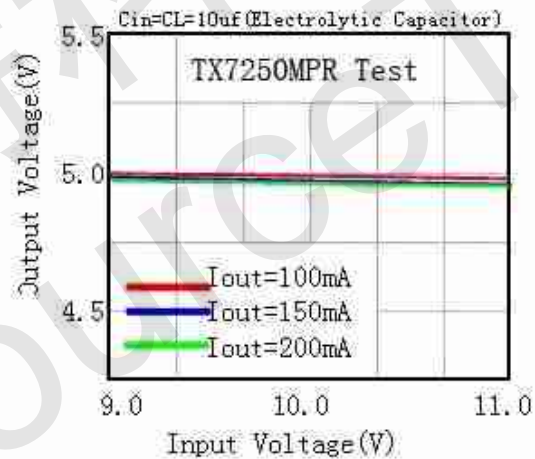
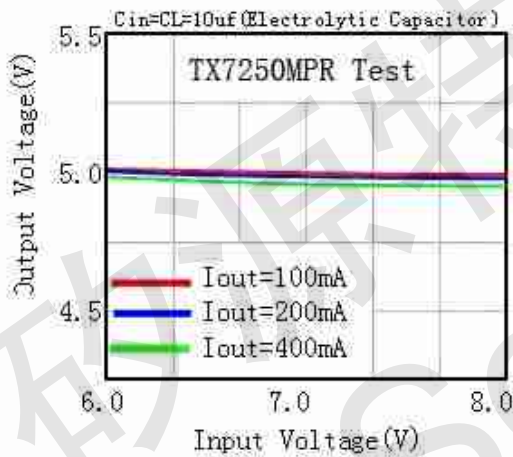


Note1: Input capacitor  $C_{IN}=1\mu F$ .

Note2: Output capacitor  $C_{OUT}=1\mu F/6.8\mu F$  (1µF Tantalum capacitor or 6.8µF ceramic capacitor is recommended).

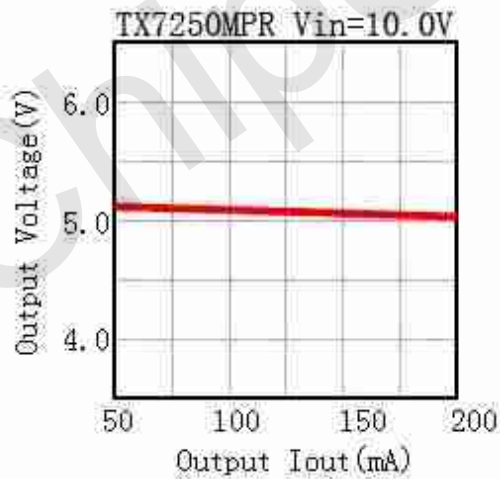
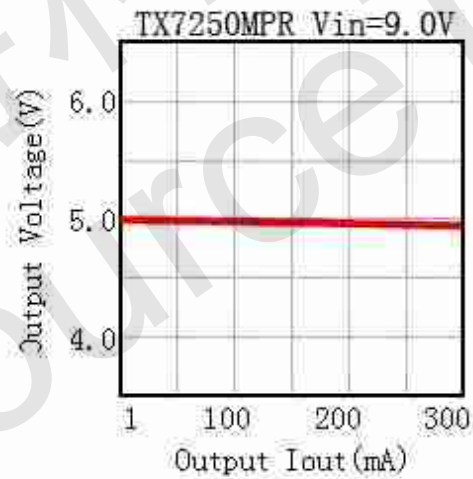
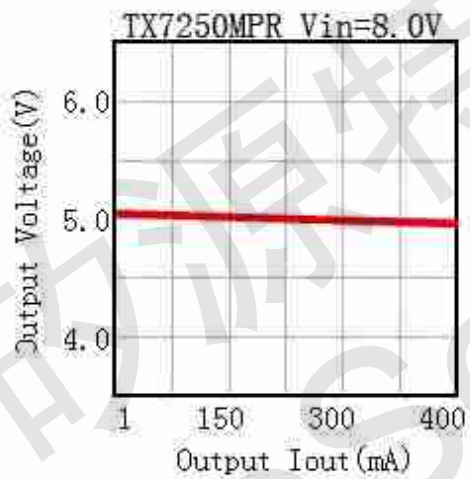
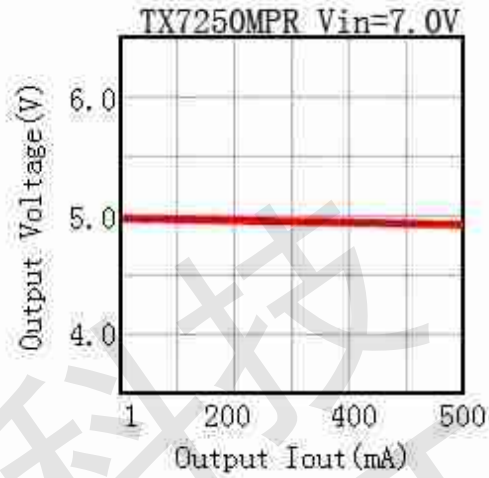
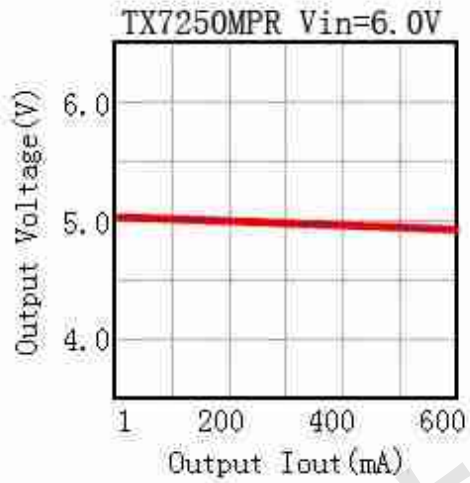
## Typical Performance Characteristics

### (1) Output Voltage vs Input voltage



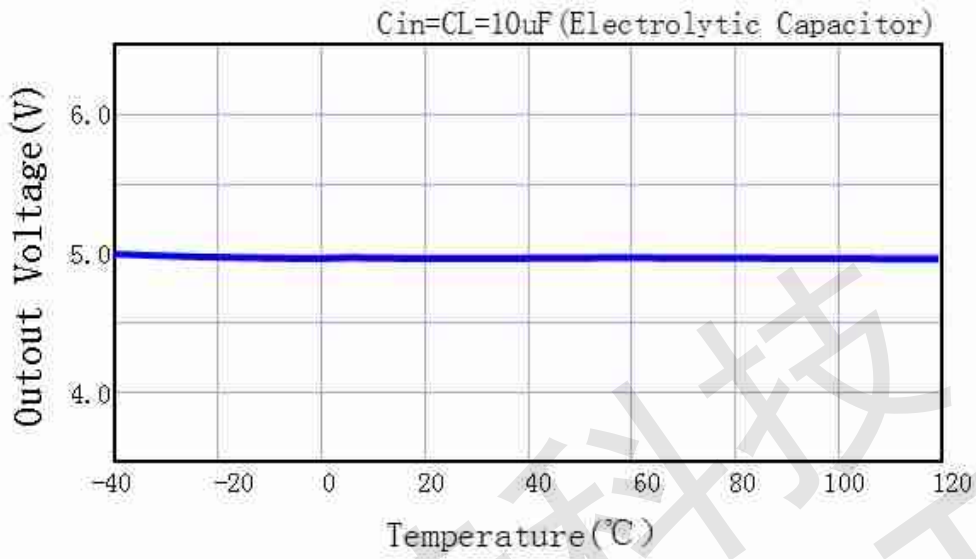


(2) Output Voltage vs. Output Current





(3) Output Voltage vs.Ambient Temperature

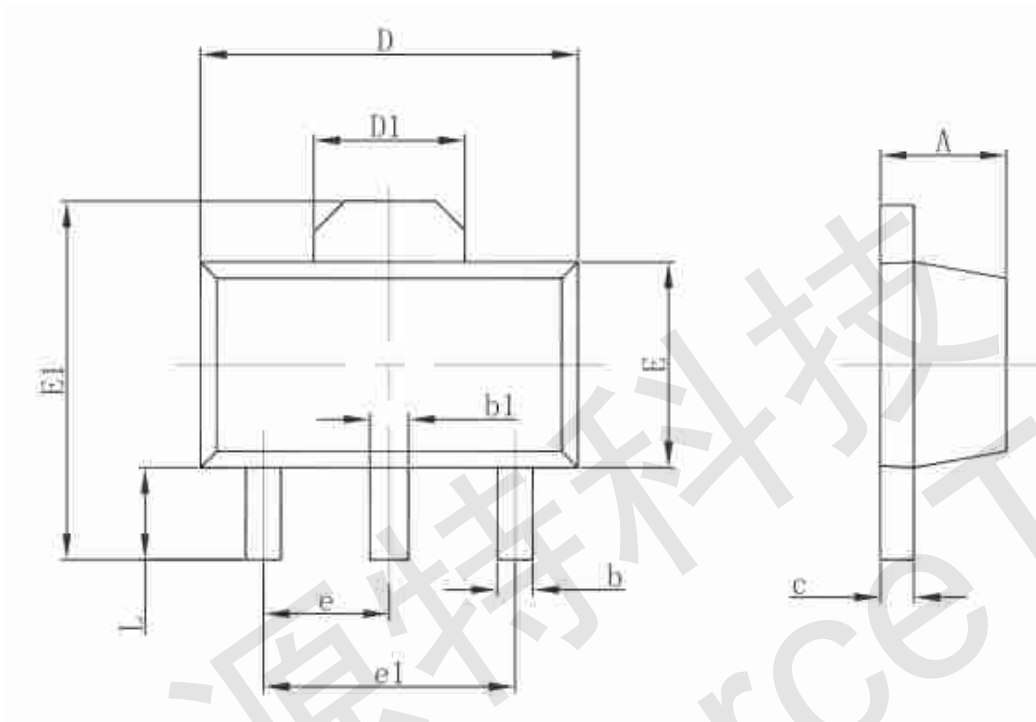






Package Information

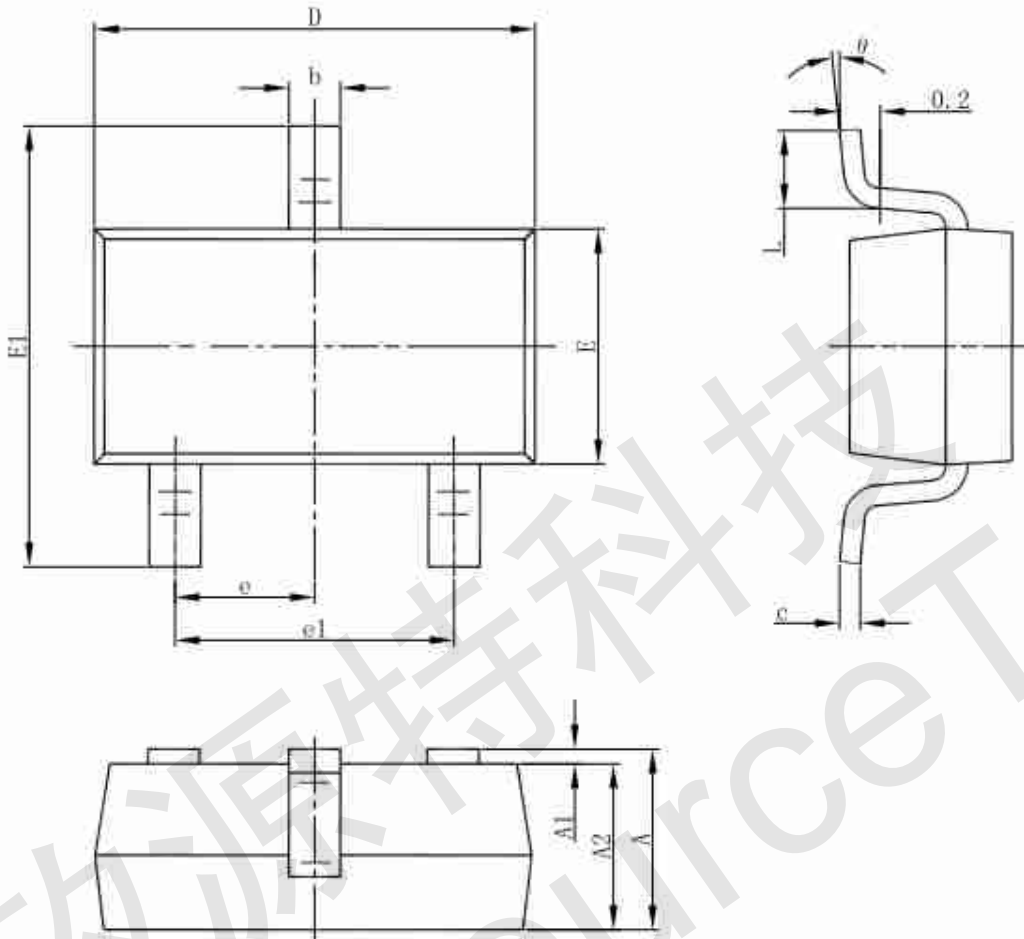
3-pin SOT89 Outline Dimensions



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	0.020
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	1.550 REF.		0.061 REF.	
E	2.300	2.600	0.091	0.102
E1	3.940	4.250	0.155	0.167
e	1.500 TYP.		0.060 TYP.	
e1	3.000 TYP.		0.118 TYP.	
L	0.900	1.200	0.035	0.047



3-pin SOT23-3 Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	1.050	1.250	0.041	0.049
A1	0.000	0.100	0.000	0.004
A2	1.050	1.150	0.041	0.045
b	0.300	0.500	0.012	0.020
c	0.100	0.200	0.004	0.008
D	2.820	3.020	0.111	0.119
E	1.500	1.700	0.059	0.067
E1	2.650	2.950	0.104	0.116
e	0.950(BSC)		0.037(BSC)	
e1	1.800	2.000	0.071	0.079
L	0.300	0.600	0.012	0.024
θ	0°	8°	0°	8°