

MSKSEMI

SEMICONDUCTOR



ESD



TVS



TSS



MOV



GDT

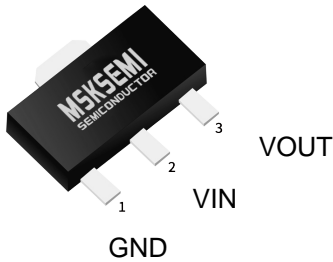


PLED

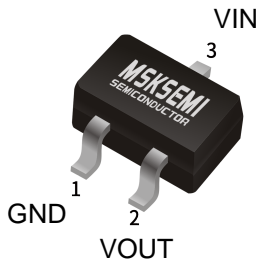
Product data sheet

www.msksemi.com

SOT-89



SOT-23



引脚功能

序号	符号	功能描述
1	GND	芯片接地端
2	VIN	输入
3	VOUT	输出

输出电压选型表

P/N	输出电压	封装类型
HT7528-1	2.8V	SOT-89/SOT-23/T0-92
HT7530-1	3.0V	
HT7533-1	3.3V	
HT7536-1	3.6V	
HT7540-1	4.0V	
HT7544-1	4.4V	
HT7550-1	5.0V	
HT7590-1	9.0V	

注：“XX”代表输出电压。

产品概述

HT75XX是一款采用CMOS技术的低压差线性稳压器。最高工作电压可达24V，有几种固定输出电压值，输出范围为2.8V~9.0V，具有较低的静态功耗，广泛用于各类音频、视频设备和通信等设备的供电。

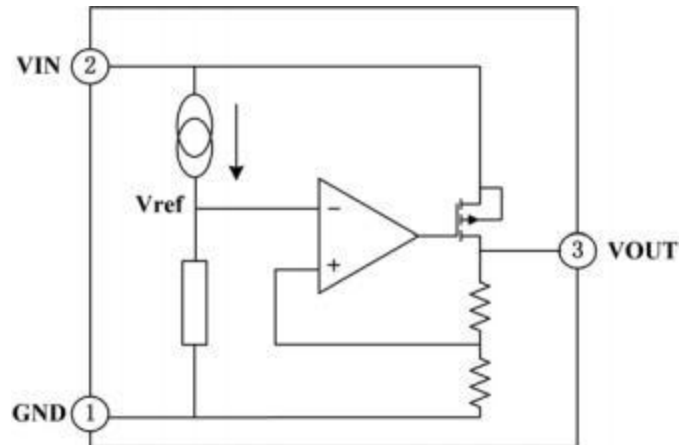
主要特点

- 低功耗
- 输入输出电压差低
- 温度漂移系数小
- 最高工作电压可达 24V
- 静态电流 1.5 μ A
- 输出电压精度： $\pm 2\%$
- 高输出电流：100mA

典型应用

- 各类电源设备
- 通信设备
- 音频、视频设备

电路功能框图



最大额定值

参数说明	符号	数值范围	单位
工作电压	V_{IN}	$-0.3 \sim +30$	V
贮存温度	T_{STG}	$-50 \sim +125$	C
工作温度	T_A	$-40 \sim +85$	C

注意： 如果器件运行条件超过上述各项最大额定值，可能对器件造成永久性损坏。上述参数仅是运行条件的极大值，我们不建议器件在该规范范围外运行。如果器件长时间工作在绝对最大极限条件下，其稳定性可能会受到影响。

散热信息

参数说明	符号	封装类型	数值范围	单位
热阻	θ_{JA}	SOT89	200	$^{\circ}C/W$
		TO92	200	C/W
功耗	P_D	SOT89	500	mW
		TO92	500	mW

直流电特性 (除特别说明外, $T_A=+25^{\circ}\text{C}$)

● 输出型号 HT7528-1

参数说明	符号	测试条件	最小值	典型值	最大值	单位
输出电压	V_{OUT}	$V_{IN}=V_{OUT}+2.0\text{V}$, $I_{OUT}=10\text{mA}$	2.744	2.80	2.856	V
输出电流	I_{OUT}	$V_{IN}=V_{OUT}+2.0\text{V}$	70	100	—	mA
负载调整率	ΔV_{OUT}	$V_{IN}=V_{OUT}+2.0\text{V}$ $1\text{mA}\leq I_{OUT}\leq 50\text{mA}$	—	25	60	mV
低压差	V_{DIF}	$I_{OUT}=1\text{mA}$, $\Delta V_{OUT}=2\%$	—	30	100	mV
静态电流	I_{SS}	无负载	—	1.5	3.0	μA
线性调整率	$\frac{\Delta V_{OUT}}{V_{OUT}} / \Delta V_{IN}$	$V_{OUT}+1.0\text{V}\leq V_{IN}\leq 24\text{V}$, $I_{OUT}=1\text{mA}$	—	—	0.2	%/V
输入电压	V_{IN}	—	—	—	24	V
温度系数	$\frac{\Delta V_{OUT}}{\Delta T_A} / V_{OUT}$	$V_{OUT}+2.0\text{V}$, $I_{OUT}=10\text{mA}$, $-40^{\circ}\text{C}\leq T_A\leq 85^{\circ}\text{C}$	—	100	—	ppm/ C

注: 当 $V_{IN}=V_{OUT}+2.0\text{V}$, 固定负载条件下使输出电压下降 2%, 此时输入电压和输出电压的差值为低压差值 V_{DIF} .

● 输出型号 HT7530-1

参数说明	符号	测试条件	最小值	典型值	最大值	单位
输出电压	V_{OUT}	$V_{IN}=V_{OUT}+2.0\text{V}$, $I_{OUT}=10\text{mA}$	2.94	3.00	3.06	V
输出电流	I_{OUT}	$V_{IN}=V_{OUT}+2.0\text{V}$	70	100	-	mA
负载调整率	ΔV_{OUT}	$V_{IN}=V_{OUT}+2.0\text{V}$ $1\text{mA}\leq I_{OUT}\leq 50\text{mA}$	-	25	60	mV
低压差	V_{DIF}	$I_{OUT}=1\text{mA}$, $\Delta V_{OUT}=2\%$	-	30	100	mV
静态电流	I_{SS}	无负载	-	1.5	3.0	μA
线性调整率	$\frac{\Delta V_{OUT}}{V_{OUT}} / \Delta V_{IN}$	$V_{OUT}+1.0\text{V}\leq V_{IN}\leq 24\text{V}$, $I_{OUT}=1\text{mA}$	-	-	0.2	%/V
输入电压	V_{IN}	-	-	-	24	V
温度系数	$\frac{\Delta V_{OUT}}{\Delta T_A} / V_{OUT}$	$V_{IN}=V_{OUT}+2.0\text{V}$, $I_{OUT}=10\text{mA}$, $-40^{\circ}\text{C}\leq T_A\leq 85^{\circ}\text{C}$	-	100	-	ppm/ $^{\circ}\text{C}$

注: 当 $V_{IN}=V_{OUT}+2.0\text{V}$, 固定负载条件下使输出电压下降 2%, 此时输入电压和输出电压的差值为低压差值 V_{DIF} .

● 输出型号 HT7533-1

参数说明	符号	测试条件	最小值	典型值	最大值	单位
输出电压	V_{OUT}	$V_{IN}=V_{OUT}+2.0V$, $I_{OUT}=10mA$	3.234	3.30	3.366	V
输出电流	I_{OUT}	$V_{IN}=V_{OUT}+2.0V$	70	100	-	mA
负载调整率	ΔV_{OUT}	$V_{IN}=V_{OUT}+2.0V$ $1mA \leq I_{OUT} \leq 50mA$	-	25	60	mV
低压差	V_{DIF}	$I_{OUT}=1mA$, $\Delta V_{OUT}=2\%$	-	25	55	mV
静态电流	I_{SS}	无负载	-	1.5	3.0	μA
线性调整率	$\frac{\Delta V_{OUT}}{V_{OUT}} \cdot \Delta V_{IN}$	$V_{OUT}+1.0V \leq V_{IN} \leq 24V$, $I_{OUT}=1mA$	-	-	0.2	%/V
输入电压	V_{IN}	-	-	-	24	V
温度系数	$\frac{\Delta V_{OUT}}{\Delta T_A} \cdot V_{OUT}$	$V_{IN}=V_{OUT}+2.0V$, $I_{OUT}=10mA$, $-40^\circ C \leq T_A \leq 85^\circ C$	-	100	-	ppm/ $^\circ C$

注：当 $V_{IN}=V_{OUT}+2.0V$ ，固定负载条件下使输出电压下降 2%，此时输入电压和输出电压的差值为低压差值 V_{DIF} 。

● 输出型号 HT7536-1

参数说明	符号	测试条件	最小值	典型值	最大值	单位
输出电压	V_{OUT}	$V_{IN}=V_{OUT}+2.0V$, $I_{OUT}=10mA$	3.528	3.60	3.672	V
输出电流	I_{OUT}	$V_{IN}=V_{OUT}+2.0V$	70	100	-	mA
负载调整率	ΔV_{OUT}	$V_{IN}=V_{OUT}+2.0V$ $1mA \leq I_{OUT} \leq 50mA$	-	25	60	mV
低压差	V_{DIF}	$I_{OUT}=1mA$, $\Delta V_{OUT}=2\%$	-	25	55	mV
静态电流	I_{SS}	无负载	-	1.5	3.0	μA
线性调整率	$\frac{\Delta V_{OUT}}{V_{OUT}} \cdot \Delta V_{IN}$	$V_{OUT}+1.0V \leq V_{IN} \leq 24V$, $I_{OUT}=1mA$	-	-	0.2	%/V
输入电压	V_{IN}	-	-	-	24	V
温度系数	$\frac{\Delta V_{OUT}}{\Delta T_A} \cdot V_{OUT}$	$V_{IN}=V_{OUT}+2.0V$, $I_{OUT}=10mA$, $-40^\circ C \leq T_A \leq 85^\circ C$	-	100	-	ppm/ $^\circ C$

注：当 $V_{IN}=V_{OUT}+2.0V$ ，固定负载条件下使输出电压下降 2%，此时输入电压和输出电压的差值为低压差值 V_{DIF} 。

● 输出型号 HT7540-1

参数说明	符号	测试条件	最小值	典型值	最大值	单位
输出电压	V_{OUT}	$V_{IN}=V_{OUT}+2.0V$, $I_{OUT}=10mA$	3.92	4.0	4.08	V
输出电流	I_{OUT}	$V_{IN}=V_{OUT}+2.0V$	70	100	-	mA
负载调整率	ΔV_{OUT}	$V_{IN}=V_{OUT}+2.0V$ $1mA \leq I_{OUT} \leq 50mA$	-	25	60	mV
低压差	V_{DIF}	$I_{OUT}=1mA$, $\Delta V_{OUT}=2\%$	-	25	55	mV
静态电流	I_{SS}	无负载	-	1.5	3.0	μA
线性调整率	$\frac{\Delta V_{OUT}}{V_{OUT}} \cdot \Delta V_{IN}$	$V_{OUT}+1.0V \leq V_{IN} \leq 24V$, $I_{OUT}=1mA$	-	-	0.2	%/V
输入电压	V_{IN}	-	-	-	24	V
温度系数	$\frac{\Delta V_{OUT}}{\Delta T_A} \cdot V_{OUT}$	$V_{IN}=V_{OUT}+2.0V$, $I_{OUT}=10mA$, $-40^\circ C \leq T_A \leq 85^\circ C$	-	100	-	ppm/ $^\circ C$

注：当 $V_{IN}=V_{OUT}+2.0V$ ，固定负载条件下使输出电压下降 2%，此时输入电压和输出电压的差值为低压差值 V_{DIF} 。

● 输出型号 HT7544-1

参数说明	符号	测试条件	最小值	典型值	最大值	单位
输出电压	V_{OUT}	$V_{IN}=V_{OUT}+2.0V$, $I_{OUT}=10mA$	4.312	4.4	4.488	V
输出电流	I_{OUT}	$V_{IN}=V_{OUT}+2.0V$	70	100	-	mA
负载调整率	ΔV_{OUT}	$V_{IN}=V_{OUT}+2.0V$ $1mA \leq I_{OUT} \leq 50mA$	-	25	60	mV
低压差	V_{DIF}	$I_{OUT}=1mA$, $\Delta V_{OUT}=2\%$	-	25	55	mV
静态电流	I_{SS}	无负载	-	1.5	3.0	μA
线性调整率	$\frac{\Delta V_{OUT}}{V_{OUT}} \cdot \Delta V_{IN}$	$V_{OUT}+1.0V \leq V_{IN} \leq 24V$, $I_{OUT}=1mA$	-	-	0.2	%/V
输入电压	V_{IN}	-	-	-	24	V
温度系数	$\frac{\Delta V_{OUT}}{\Delta T_A} \cdot V_{OUT}$	$V_{IN}=V_{OUT}+2.0V$, $I_{OUT}=10mA$, $-40^\circ C \leq T_A \leq 85^\circ C$	-	100	-	ppm/ $^\circ C$

注：当 $V_{IN}=V_{OUT}+2.0V$ ，固定负载条件下使输出电压下降 2%，此时输入电压和输出电压的差值为低压差值 V_{DIF} 。

● 输出型号 HT7550-1

参数说明	符号	测试条件	最小值	典型值	最大值	单位
输出电压	V_{OUT}	$V_{IN}=V_{OUT}+2.0V$, $I_{OUT}=10mA$	4.9	5.0	5.1	V
输出电流	I_{OUT}	$V_{IN}=V_{OUT}+2.0V$	100	150	-	mA
负载调整率	ΔV_{OUT}	$V_{IN}=V_{OUT}+2.0V$ $1mA \leq I_{OUT} \leq 70mA$	-	25	60	mV
低压差	V_{DIF}	$I_{OUT}=1mA$, $\Delta V_{OUT}=2\%$	-	25	55	mV
静态电流	I_{SS}	无负载	-	1.5	3.0	μA
线性调整率	$\frac{\Delta V_{OUT}}{V_{OUT}} / \frac{\Delta V_{IN}}{V_{IN}}$	$V_{OUT}+1.0V \leq V_{IN} \leq 24V$, $I_{OUT}=1mA$	-	-	0.2	%/V
输入电压	V_{IN}	-	-	-	24	V
温度系数	$\frac{\Delta V_{OUT}}{\Delta T_A} / V_{OUT}$	$V_{IN}=V_{OUT}+2.0V$, $I_{OUT}=10mA$, $-40^\circ C \leq T_A \leq 85^\circ C$	-	100	-	ppm/ $^\circ C$

注：当 $V_{IN}=V_{OUT}+2.0V$ ，固定负载条件下使输出电压下降 2%，此时输入电压和输出电压的差值为低压差值 V_{DIF} 。

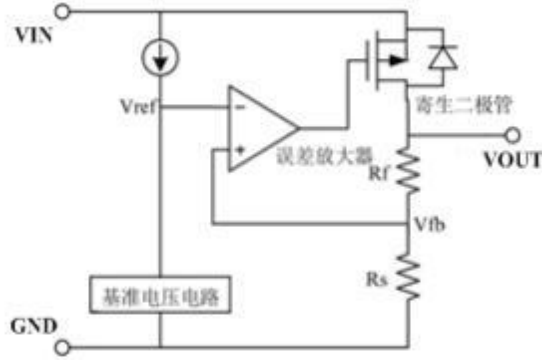
● 输出型号 HT7590-1

参数说明	符号	测试条件	最小值	典型值	最大值	单位
输出电压	V_{OUT}	$V_{IN}=V_{OUT}+2.0V$, $I_{OUT}=10mA$	8.82	9.0	9.18	V
输出电流	I_{OUT}	$V_{IN}=V_{OUT}+2.0V$	100	150	-	mA
负载调整率	ΔV_{OUT}	$V_{IN}=V_{OUT}+2.0V$ $1mA \leq I_{OUT} \leq 70mA$	-	25	60	mV
低压差	V_{DIF}	$I_{OUT}=1mA$, $\Delta V_{OUT}=2\%$	-	25	55	mV
静态电流	I_{SS}	无负载	-	1.5	3.0	μA
线性调整率	$\frac{\Delta V_{OUT}}{V_{OUT}} / \frac{\Delta V_{IN}}{V_{IN}}$	$V_{OUT}+1.0V \leq V_{IN} \leq 24V$, $I_{OUT}=1mA$	-	-	0.2	%/V
输入电压	V_{IN}	-	-	-	24	V
温度系数	$\frac{\Delta V_{OUT}}{\Delta T_A} / V_{OUT}$	$V_{IN}=V_{OUT}+2.0V$, $I_{OUT}=10mA$, $-40^\circ C \leq T_A \leq 85^\circ C$	-	100	-	ppm/ $^\circ C$

注：当 $V_{IN}=V_{OUT}+2.0V$ ，固定负载条件下使输出电压下降 2%，此时输入电压和输出电压的差值为低压差值 V_{DIF} 。

功能描述

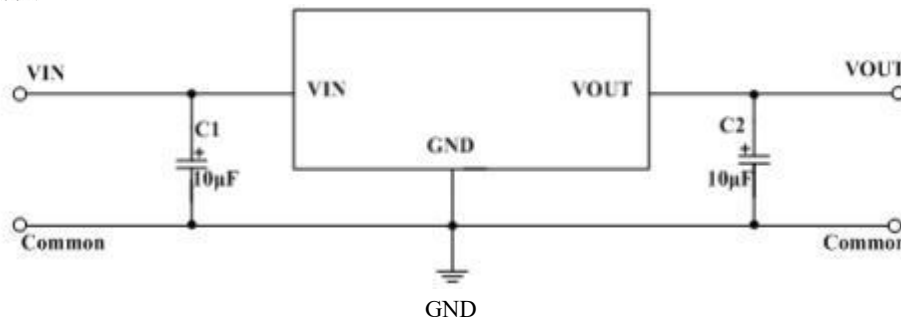
误差放大器根据反馈电阻 R_s 及 R_f 所构成的分压电阻的输入电压 V_{fb} 同基准电压 (V_{ref}) 相比较。通过此误差放大器向输出晶体管提供必要的门极电压，而使输出电压不受输入电压或温度变化的影响而保持一定。



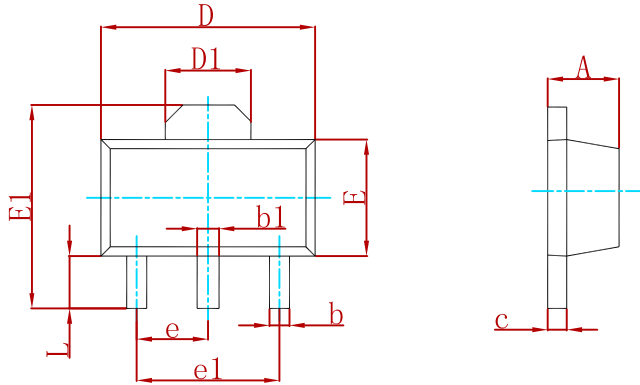
- 1、应用时尽量将电容接到 V_{IN} 和 V_{OUT} 脚位附近。
- 2、电路内部使用了相位补偿电路和利用输出电容的 ESR 来补偿。所以输出到地一定要接大于 $2.2\mu F$ 的电容器，推荐使用钽电容。
- 3、注意输入输出电压、负载电流的使用条件，避免 IC 内部的功耗超出封装允许的最大功耗值。

典型应用线路图

1、基本应用图

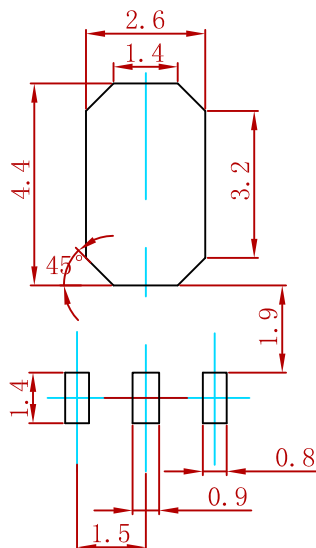


PACKAGE MECHANICAL DATA



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

Suggested Pad Layout

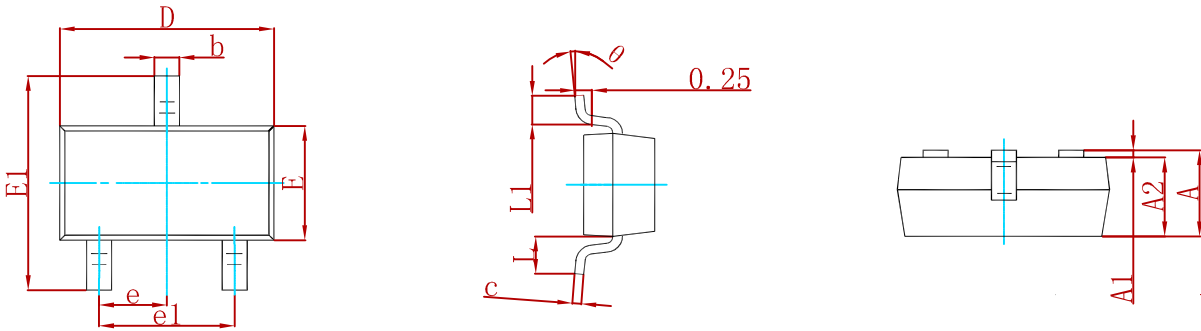


Note:
 1. Controlling dimension: in millimeters.
 2. General tolerance: $\pm 0.05\text{mm}$.
 3. The pad layout is for reference purposes only.

REEL SPECIFICATION

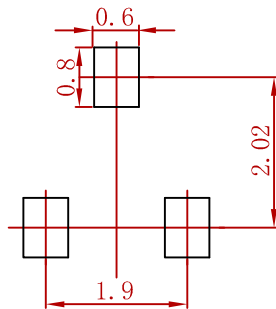
P/N	PKG	QTY
HT75XX	SOT-89	1000

PACKAGE MECHANICAL DATA



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950 TYP		0.037 TYP	
e1	1.800	2.000	0.071	0.079
L	0.550 REF		0.022 REF	
L1	0.300	0.500	0.012	0.020
θ	0°	8°	0°	8°

Suggested Pad Layout

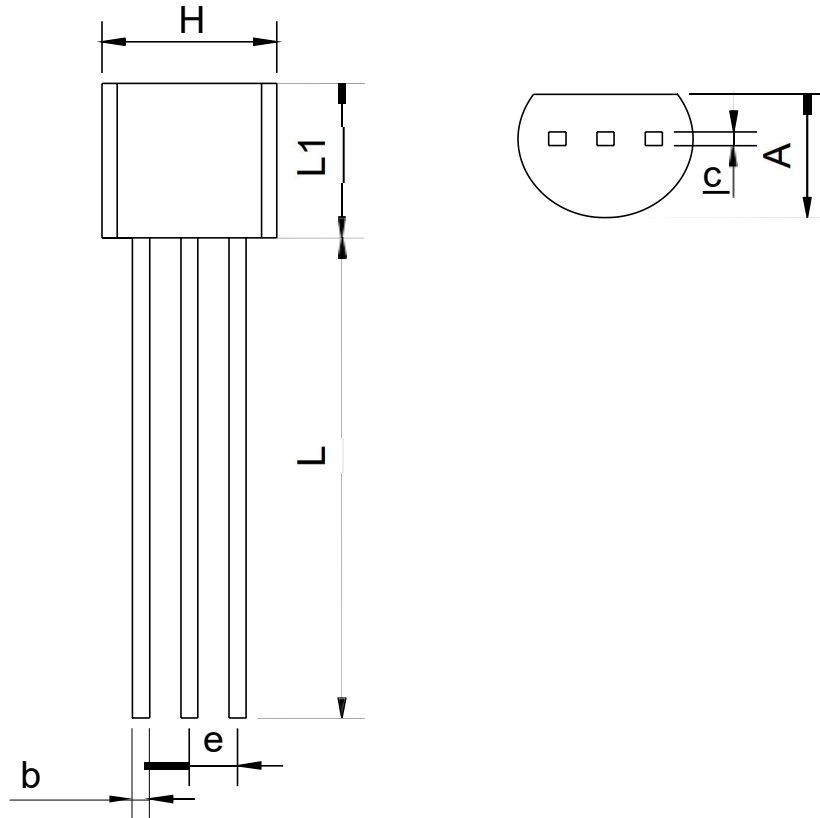


- Note:
1. Controlling dimension: in millimeters.
 2. General tolerance: ± 0.05mm.
 3. The pad layout is for reference purposes only.

REEL SPECIFICATION

P/N	PKG	QTY
HT75XX	SOT-23	3000

PACKAGE MECHANICAL DATA



SYMBOL	mm	
	min	max
A	3.40	3.80
b	0.40	0.50
c	0.35	0.45
e	1.27BSC	
H	4.40	4.80
L	13.00	15.00
L1	4.30	4.70

REEL SPECIFICATION

P/N	PKG	QTY
HT75XX	TO-92	1000

Attention

- Any and all MSKSEMI Semiconductor products described or contained herein do not have specifications that can handle applications that require extremely high levels of reliability, such as life-support systems, aircraft's control systems, or other applications whose failure can be reasonably expected to result in serious physical and/or material damage. Consult with your MSKSEMI Semiconductor representative nearest you before using any MSKSEMI Semiconductor products described or contained herein in such applications.
- MSKSEMI Semiconductor assumes no responsibility for equipment failures that result from using products at values that exceed, even momentarily, rated values (such as maximum ratings, operating condition ranges, or other parameters) listed in products specifications of any and all MSKSEMI Semiconductor products described or contained herein.
- Specifications of any and all MSKSEMI Semiconductor products described or contained herein stipulate the performance, characteristics, and functions of the described products in the independent state, and are not guarantees of the performance, characteristics, and functions of the described products as mounted in the customer's products or equipment. To verify symptoms and states that cannot be evaluated in an independent device, the customer should always evaluate and test devices mounted in the customer's products or equipment.
- MSKSEMI Semiconductor strives to supply high-quality high-reliability products. However, any and all semiconductor products fail with some probability. It is possible that these probabilistic failures could give rise to accidents or events that could endanger human lives, that could give rise to smoke or fire, or that could cause damage to other property. When designing equipment, adopt safety measures so that these kinds of accidents or events cannot occur. Such measures include but are not limited to protective circuits and error prevention circuits for safe design, redundant design, and structural design.
- In the event that any or all MSKSEMI Semiconductor products (including technical data, services) described or contained herein are controlled under any of applicable local export control laws and regulations, such products must not be exported without obtaining the export license from the authorities concerned in accordance with the above law.
- No part of this publication may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopying and recording, or any information storage or retrieval system, or otherwise, without the prior written permission of MSKSEMI Semiconductor.
- Information (including circuit diagrams and circuit parameters) herein is for example only ; it is not guaranteed for volume production. MSKSEMI Semiconductor believes information herein is accurate and reliable, but no guarantees are made or implied regarding its use or any infringement of intellectual property rights or other rights of third parties.
- Any and all information described or contained herein are subject to change without notice due to product/technology improvement, etc. When designing equipment, refer to the "Delivery Specification" for the MSKSEMI Semiconductor product that you intend to use.

单击下面可查看定价，库存，交付和生命周期等信息

[>>MSKSEMI\(美森科\)](#)