

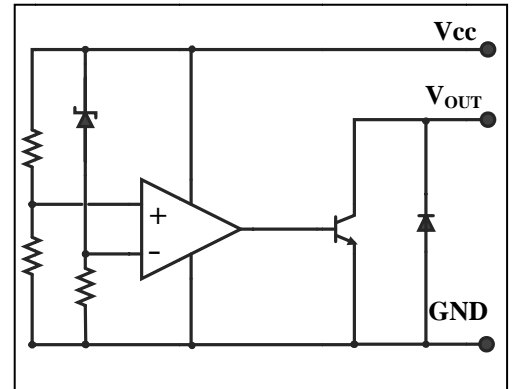
Description

- The SJ73Lxxx prevents the error of system from supply voltage below normal voltage level at the time of the power on and instantaneous power off in systems.

Features

- Current Consumption is Low ($I_{CCL}=300 \mu A$ Typ. $I_{CCH}=30 \mu A$ Typ.)
- Resetting Output Minimum Guarantee Voltage is Low (0.8V Typ.)
- Hysteresis Voltage is Provided (50 mV Typ.)
- Open Collector Output Configuration

Equivalent Circuit



Applications

- As Control Circuit of Battery-Backed Memory
- As Measure Against Erroneous Operations at Power On-Off
- As Resetting Function for the CPU-Mounted Equipment --- PC, Printer, DVD, STB, Fax, C-TV etc.
- As Measure Against System Runaway at Instantaneous Break of Power Supply etc.

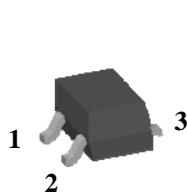
Ordering Information

| Type NO. | Marking | Package Code |
|----------|--------------------|--------------------------|
| SJ73Lxxx | L □ □ □ ① ② ③ | SOT-23 |
| | 73L □ □ □ ① ② ③ | SOT-89 TO-92M / TO-92 |

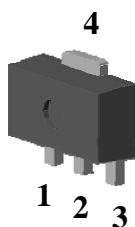
③ Device Code ② Detecting Voltage Code ----- (First Line)

③ Year&Week Code ----- (SOT-23: First Line, SOT-89/TO-92M/TO-92 : Second Line)

Pin Assignment (Marking Side View)



SJ73LxxS
1. : V_{OUT}
2. : V_{cc}
3. : GND



SJ73LxxF
1. : V_{cc}
2. : GND
3. : V_{OUT}
4. : GND



SJ73LxxM
1. : V_{cc}
2. : GND
3. : V_{OUT}



SJ73Lxx
1. : V_{cc}
2. : GND
3. : V_{OUT}

Maximum ratings

(Ta=25°C)

| Characteristic | | Symbol | Ratings | Unit |
|-----------------------------|----------|------------------|------------|------|
| Supply Voltage | | V _{CC} | -0.3 ~ +15 | V |
| Power Dissipation | SJ73LxxS | P _D | 300 | mW |
| | SJ73LxxF | | 500 | |
| | SJ73Lxx | | 625 | |
| | SJ73LxxM | | 400 | |
| Output Voltage | | V _{OUT} | -0.3 ~ +15 | V |
| Operating Temperature Range | | T _{OPR} | -30 ~ +85 | °C |
| Storage Temperature Range | | T _{STG} | -55 ~ +150 | °C |

* With PCB(50mm² copper area) at glass epoxy board (t=1.7mm, area=50×50mm)

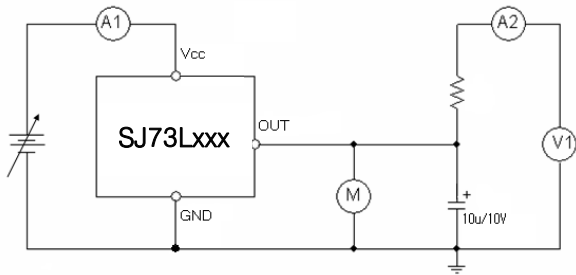
Electrical Characteristics

(Ta=25°C)

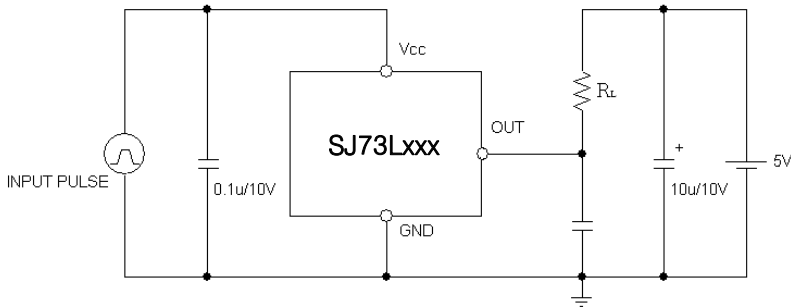
| Characteristic | Symbol | Test Circuit | Test Condition | Min. | Typ. | Max. | Unit | |
|--|--------------------|--------------|---|----------|-------|------|------|---|
| Detecting Voltage | V _S | 1 | R _L =200Ω V _{CC} =H→L V _{OL} ≤0.4V | SJ73L19x | 1.75 | 1.90 | 2.05 | V |
| | | | | SJ73L21x | 1.95 | 2.10 | 2.25 | |
| | | | | SJ73L23x | 2.15 | 2.30 | 2.45 | |
| | | | | SJ73L25x | 2.35 | 2.50 | 2.65 | |
| | | | | SJ73L27x | 2.55 | 2.70 | 2.85 | |
| | | | | SJ73L29x | 2.75 | 2.90 | 3.05 | |
| | | | | SJ73L31x | 2.95 | 3.10 | 3.25 | |
| | | | | SJ73L32x | 3.05 | 3.20 | 3.35 | |
| | | | | SJ73L33x | 3.15 | 3.30 | 3.45 | |
| | | | | SJ73L34x | 3.25 | 3.40 | 3.55 | |
| | | | | SJ73L35x | 3.35 | 3.50 | 3.65 | |
| | | | | SJ73L36x | 3.45 | 3.60 | 3.75 | |
| | | | | SJ73L39x | 3.75 | 3.90 | 4.05 | |
| | | | | SJ73L42x | 4.05 | 4.20 | 4.35 | |
| SJ73L45x | 4.35 | 4.50 | 4.65 | | | | | |
| Hysteresis Voltage | ΔV _S | 1 | R _L =200Ω, V _{CC} =L→H→L | 30 | 50 | 100 | mV | |
| Temperature Coefficient of Detecting Voltage | V _S /ΔT | 1 | R _L =200Ω, Ta= -30 ~ +75°C | - | ±0.01 | - | %/°C | |
| Low Level Output voltage | V _{OL} | 1 | R _L =200Ω, V _{CC} =V _S Min-0.05V | - | - | 0.4 | V | |
| Output Leakage Current | I _{LEAK} | 1 | V _{OUT} =15V | - | - | 0.1 | μA | |
| Circuit Current at ON | I _{CCL} | 1 | V _{CC} =V _S Min - 0.05V | - | 300 | 500 | μA | |
| Circuit Current at OFF | I _{CCH} | 1 | V _{CC} =5.25V | - | 30 | 50 | μA | |
| Threshold Operating Voltage | V _{OPR} | 1 | R _L =200Ω, V _{OL} ≤0.4V | - | 0.8 | 1.6 | V | |
| Output Current at ON I | I _{OL I} | 1 | R _L =0Ω, V _{CC} =V _S Min - 0.05V | 20 | - | - | mA | |
| Output Current at ON II | I _{OL II} | 1 | R _L =0Ω, V _{CC} =V _S Min - 0.05V Ta= -30 ~ +75°C | 16 | - | - | mA | |
| L→H Transmission delay time | t _{PLH} | 2 | R _L =1.0 kΩ, C _L =100 pF | - | 15 | - | μs | |
| H→L Transmission delay time | t _{PHL} | 2 | R _L =1.0 kΩ, C _L =100 pF | - | 10 | - | μs | |

Application Circuit

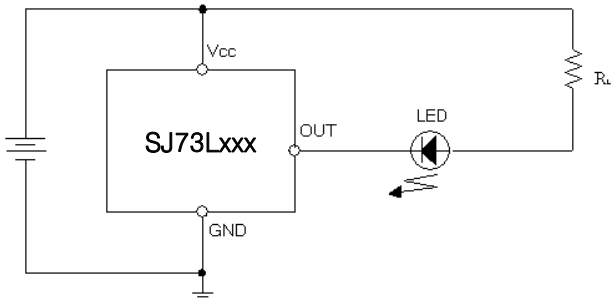
Test Circuit 1



Test Circuit 2

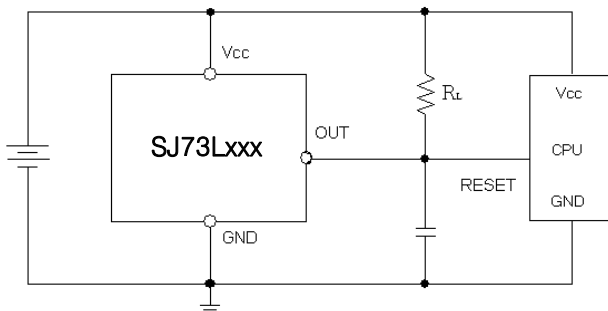


(1) Battery Low Indicator



Note 1. : Connecting of LED and R2 obtains a voltage drop indicator.

(2) Resetting for CPU



Electrical Characteristic Curves

Fig. 1 $V_{OUT} - V_{CC}$

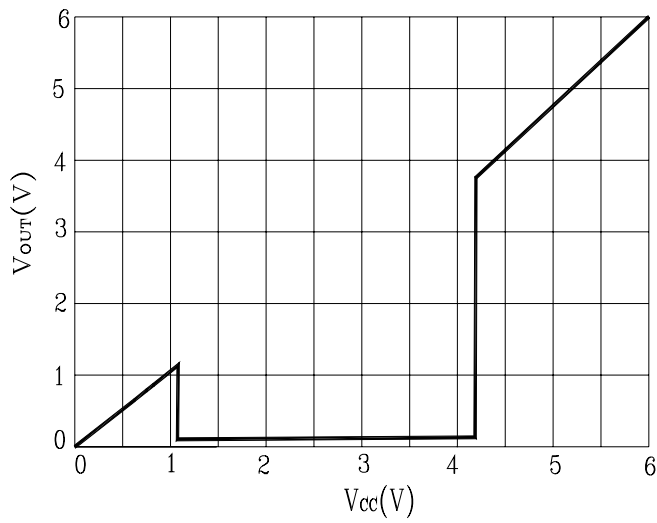


Fig. 2 $I_{CC} - V_{CC}$

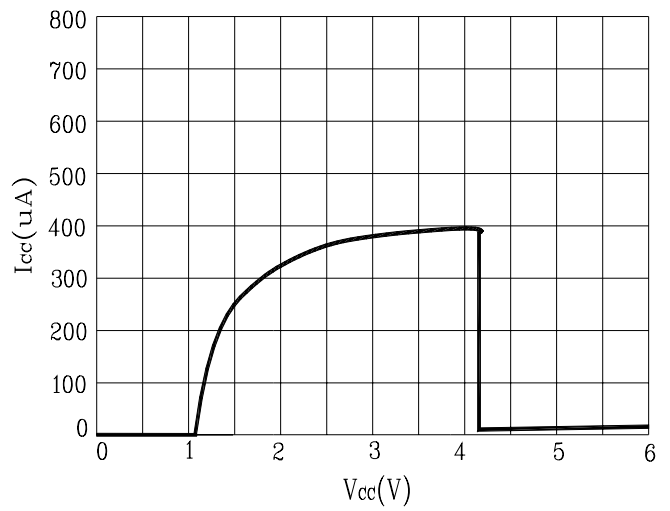


Fig. 3 $I_{CCH} - T_a$

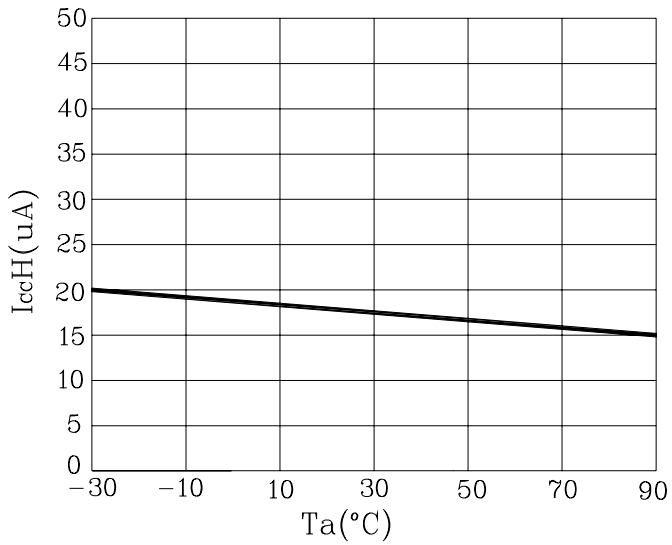
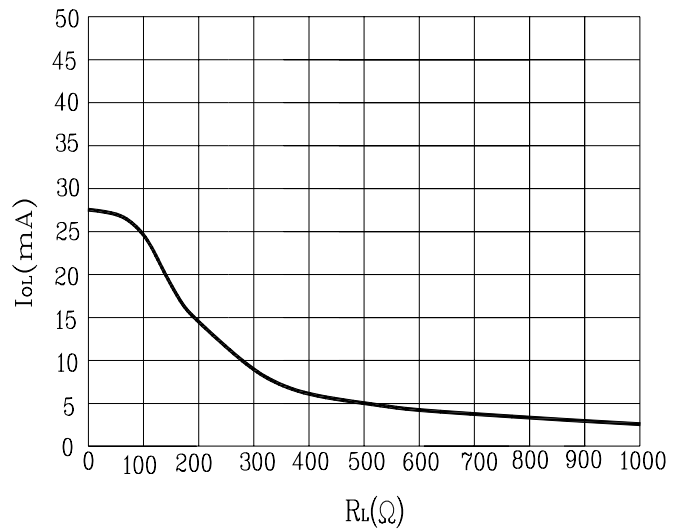
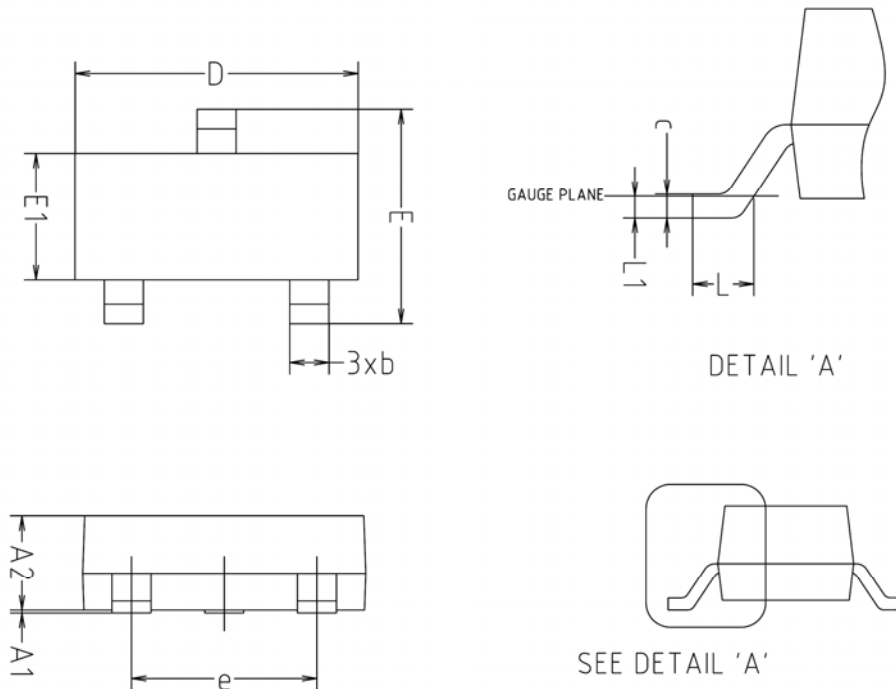


Fig. 4 $I_{OL} - R_L$

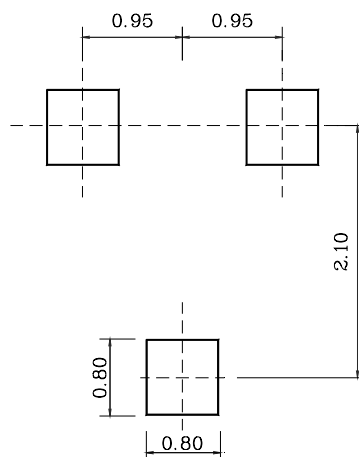


Outline Dimension (Unit : mm)

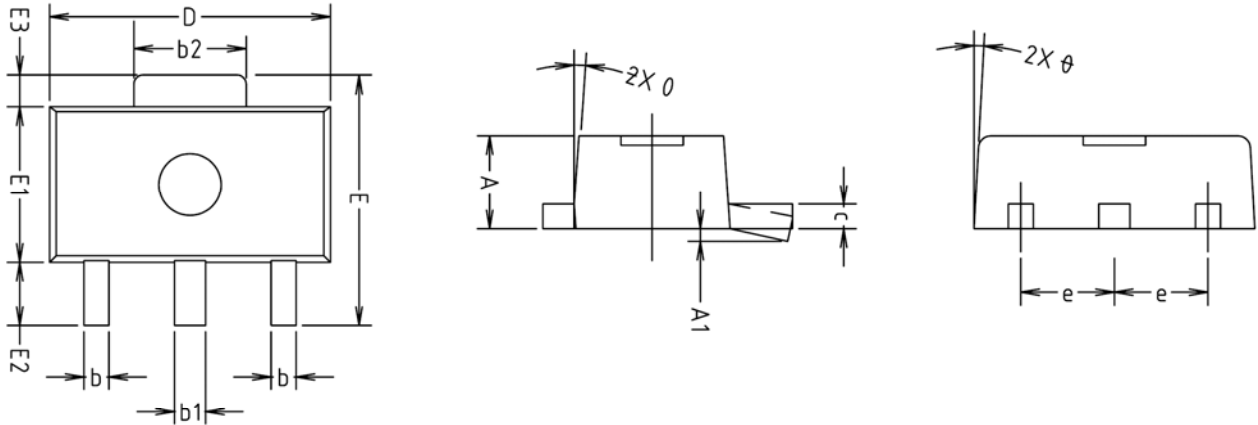


| SYMBOL | MILLIMETERS | | | NOTE |
|--------|-------------|---------|---------|------|
| | MINIMUM | NOMINAL | MAXIMUM | |
| A1 | 0.00 | - | 0.10 | |
| A2 | 0.82 | - | 1.02 | |
| b | 0.39 | 0.42 | 0.45 | |
| c | 0.09 | 0.12 | 0.15 | |
| D | 2.80 | 2.90 | 3.00 | |
| E | 2.20 | 2.40 | 2.60 | |
| E1 | 1.20 | 1.30 | 1.40 | |
| e | 1.90BSC | | | |
| L | 0.20 | - | - | |
| L1 | 0.12BSC | | | |

Recommend PCB Solder Land Dimension (Unit : mm)

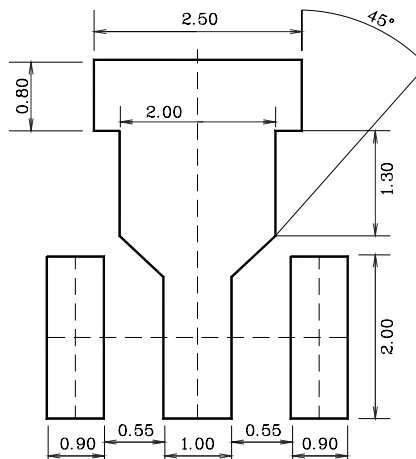


Outline Dimension (Unit : mm)

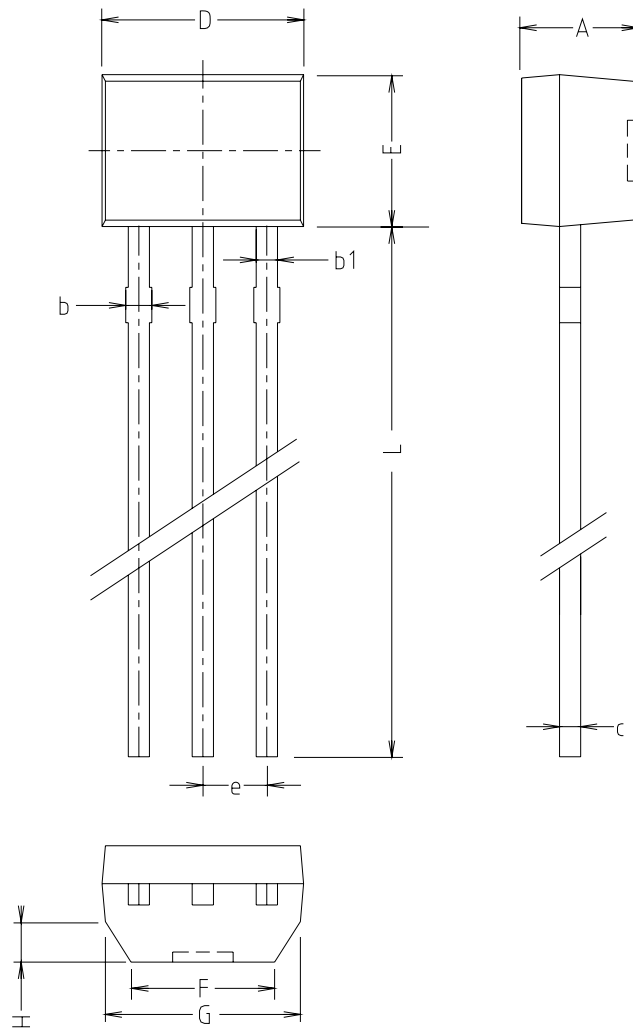


| SYMBOL | MILLIMETERS | | | NOTE |
|--------|-------------|---------|---------|------|
| | MINIMUM | NOMINAL | MAXIMUM | |
| A | 1.40 | 1.50 | 1.60 | |
| A1 | 0.00 | - | 0.10 | |
| b | 0.38 | 0.42 | 0.48 | |
| b1 | 0.48 | 0.52 | 0.58 | |
| b2 | 1.79 | 1.82 | 1.87 | |
| c | 0.40 | 0.42 | 0.46 | |
| D | 4.40 | 4.50 | 4.70 | |
| E | 3.70 | 4.00 | 4.30 | |
| E1 | 2.40 | 2.50 | 2.70 | |
| E2 | 0.80 | 1.00 | 1.20 | |
| E3 | 0.40 | 0.50 | 0.60 | |
| e | 1.50 TYP. | | | |
| theta | 4° TYP. | | | |

Recommend PCB Solder Land Dimension (Unit : mm)

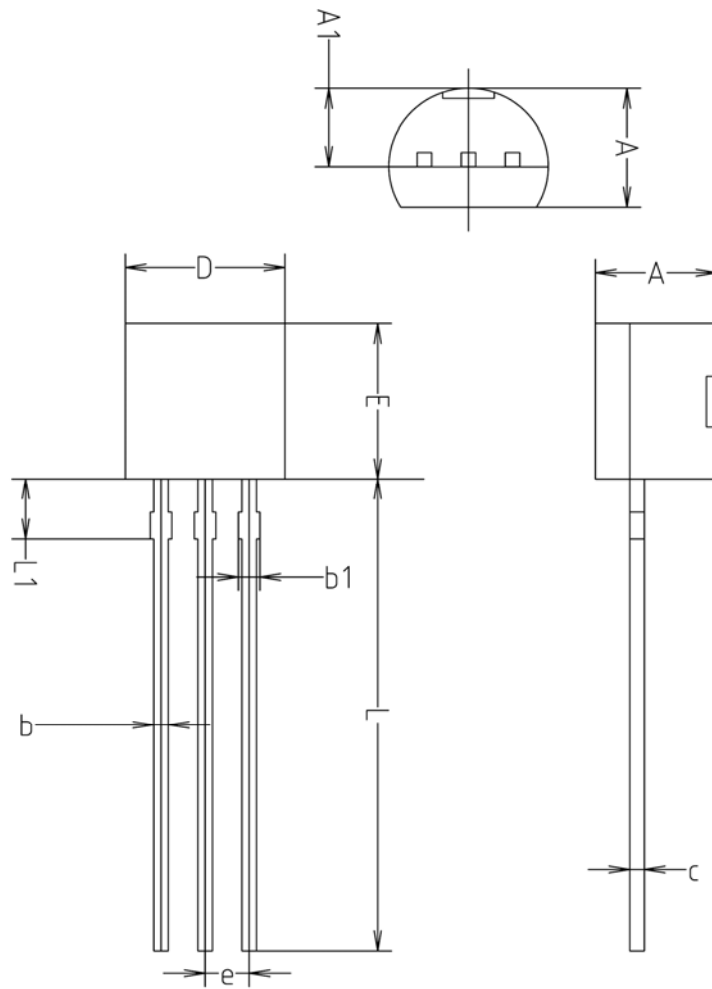


Outline Dimension (Unit : mm)



| SYMBOL | MILLMETERS(mm) | | |
|--------|----------------|---------|---------|
| | MINIMUM | NOMINAL | MAXIMUM |
| A | 2.20 | 2.30 | 2.40 |
| b | — | 0.50 | — |
| b1 | — | 0.44 | — |
| c | — | 0.42 | — |
| D | 3.90 | 4.00 | 4.10 |
| E | 2.90 | 3.00 | 3.10 |
| e | — | 1.27 | — |
| L | — | 14.50 | 15.00 |
| F | 2.80 | 2.85 | 2.90 |
| G | 3.80 | — | — |
| H | — | 0.70 | — |

Outline Dimension (Unit : mm)



| SYMBOL | MILLIMETERS(mm) | | |
|--------|-----------------|---------|---------|
| | MINIMUM | NOMINAL | MAXIMUM |
| A | 3.40 | 3.50 | 3.66 |
| A1 | 2.46 | 2.51 | 2.59 |
| b | 0.39 | 0.44 | 0.53 |
| b1 | 0.39 | - | 0.63 |
| c | 0.35 | 0.42 | 0.47 |
| D | 4.48 | 4.60 | 4.70 |
| E | 4.48 | 4.60 | 4.70 |
| e | 1.17 | 1.27 | 1.37 |
| L | 13.70 | 14.00 | 14.77 |
| L1 | 1.55 | 1.70 | 2.15 |

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