

## 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.

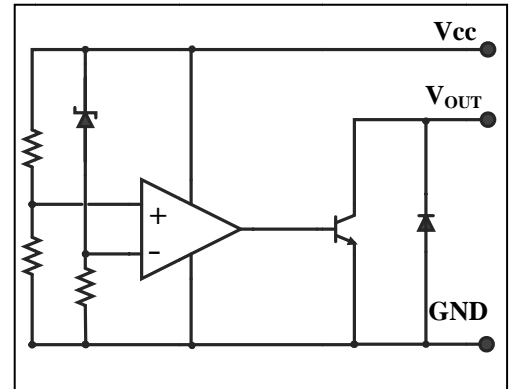
## Features

- 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

## 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.

## Equivalent Circuit



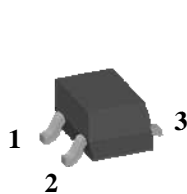
## Ordering Information

Type NO.	Marking	Package Code
SJ73Lxxx	$L \begin{array}{ c } \hline \square \\ \hline \end{array} \begin{array}{ c } \hline \square \\ \hline \end{array} \begin{array}{ c } \hline \square \\ \hline \end{array}$ ① ② ③	SOT-23
	$73L \begin{array}{ c } \hline \square \\ \hline \end{array} \begin{array}{ c } \hline \square \\ \hline \end{array} \begin{array}{ c } \hline \square \\ \hline \end{array}$ ① ② ③	SOT-89 TO-92M / TO-92

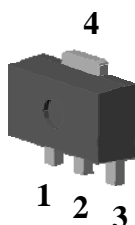
③ Device Code    ② Detecting Voltage Code ----- ( First Line )

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

## Pin Assignment ( Marking Side View )



**SJ73LxxS**  
 1. : V<sub>OUT</sub>  
 2. : V<sub>CC</sub>  
 3. : GND



**SJ73LxxF**  
 1. : V<sub>CC</sub>  
 2. : GND  
 3. : V<sub>OUT</sub>  
 4. : GND



**SJ73LxxM**  
 1. : V<sub>CC</sub>  
 2. : GND  
 3. : V<sub>OUT</sub>



**SJ73Lxx**  
 1. : V<sub>CC</sub>  
 2. : GND  
 3. : V<sub>OUT</sub>

## Maximum ratings

(Ta=25°C)

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

\* With PCB(50mm<sup>2</sup> copper area) at glass epoxy board (t=1.7mm, area=50×50mm)

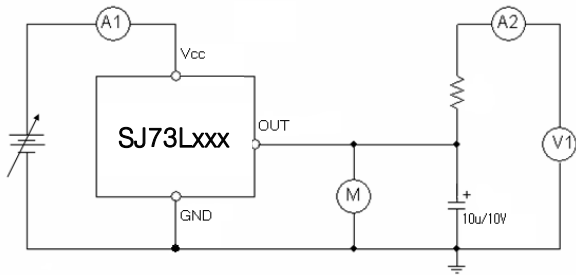
## Electrical Characteristics

(Ta=25°C)

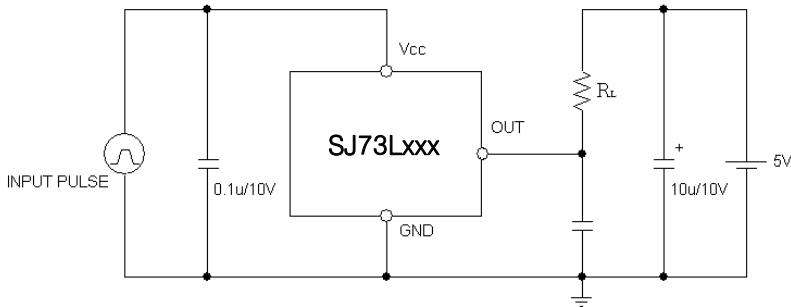
Characteristic	Symbol	Test Circuit	Test Condition	Min.	Typ.	Max.	Unit	
Detecting Voltage	V <sub>S</sub>	1	R <sub>L</sub> =200Ω V <sub>CC</sub> =H→L V <sub>OL</sub> ≤0.4V	SJ73L19x	1.75	1.90	2.05	V
				SJ73L21x	1.95	2.10	2.25	
				SJ73L23x	2.15	2.30	2.45	
				SJ73L25x	2.35	2.50	2.65	
				SJ73L27x	2.55	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 <sub>S</sub>	1	R <sub>L</sub> =200Ω, V <sub>CC</sub> =L→H→L	30	50	100	mV	
Temperature Coefficient of Detecting Voltage	V <sub>S</sub> /ΔT	1	R <sub>L</sub> =200Ω, Ta= -30 ~ +75°C	-	±0.01	-	%/°C	
Low Level Output voltage	V <sub>OL</sub>	1	R <sub>L</sub> =200Ω, V <sub>CC</sub> =V <sub>S</sub> Min-0.05V	-	-	0.4	V	
Output Leakage Current	I <sub>LEAK</sub>	1	V <sub>OUT</sub> =15V	-	-	0.1	μA	
Circuit Current at ON	I <sub>CCL</sub>	1	V <sub>CC</sub> = V <sub>S</sub> Min - 0.05V	-	300	500	μA	
Circuit Current at OFF	I <sub>CCH</sub>	1	V <sub>CC</sub> = 5.25V	-	30	50	μA	
Threshold Operating Voltage	V <sub>OPR</sub>	1	R <sub>L</sub> =200Ω, V <sub>OL</sub> ≤0.4V	-	0.8	1.6	V	
Output Current at ON I	I <sub>OL I</sub>	1	R <sub>L</sub> =0Ω, V <sub>CC</sub> = V <sub>S</sub> Min - 0.05V	20	-	-	mA	
Output Current at ON II	I <sub>OL II</sub>	1	R <sub>L</sub> =0Ω, V <sub>CC</sub> = V <sub>S</sub> Min - 0.05V Ta= -30 ~ +75°C	16	-	-	mA	
L→H Transmission delay time	t <sub>PLH</sub>	2	R <sub>L</sub> =1.0 kΩ, C <sub>L</sub> =100 pF	-	15	-	μs	
H→L Transmission delay time	t <sub>PHL</sub>	2	R <sub>L</sub> =1.0 kΩ, C <sub>L</sub> =100 pF	-	10	-	μs	

## Application Circuit

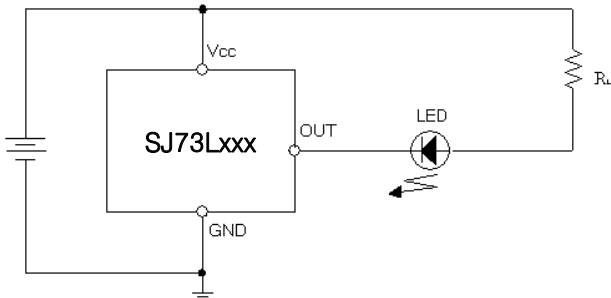
### Test Circuit 1



### Test Circuit 2

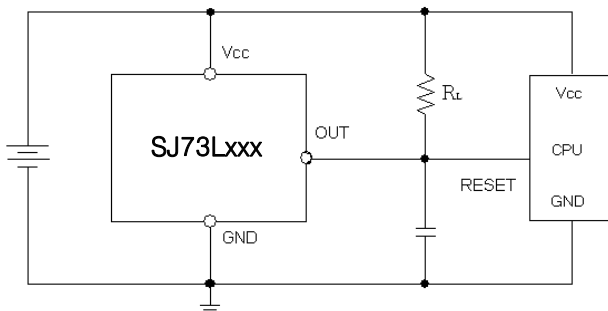


#### (1) Battery Low Indicator



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

#### (2) Resetting for CPU



Electrical Characteristic Curves

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

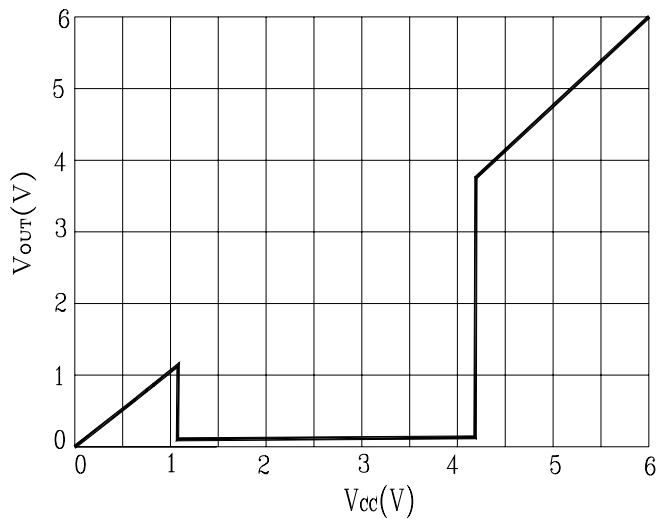


Fig. 2  $I_{CC} - V_{CC}$

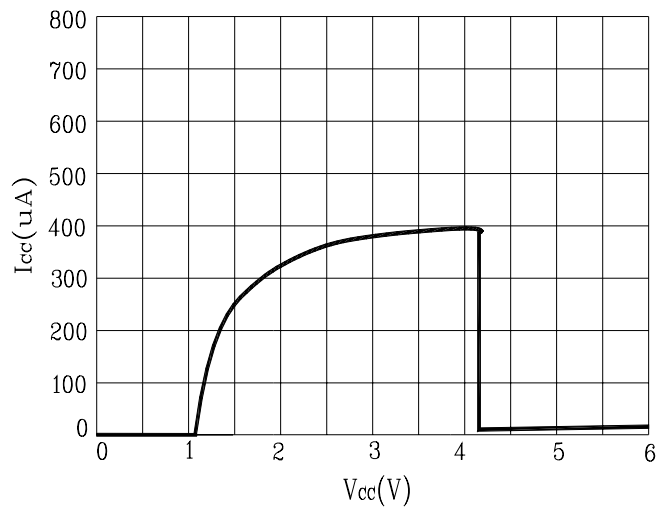


Fig. 3  $I_{CCH} - T_a$

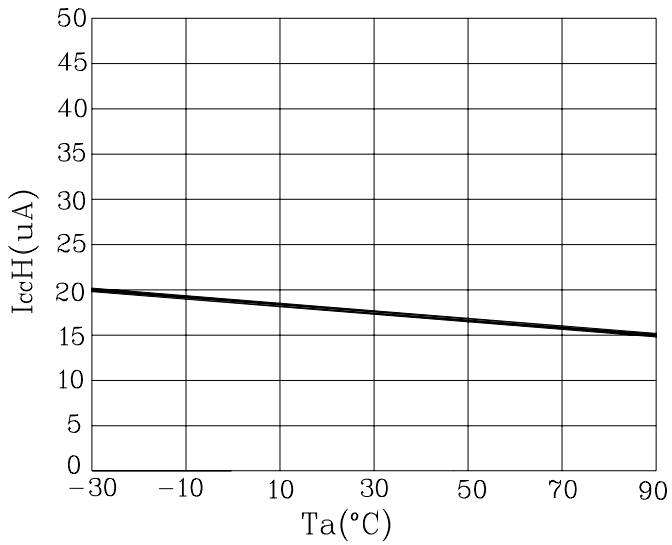
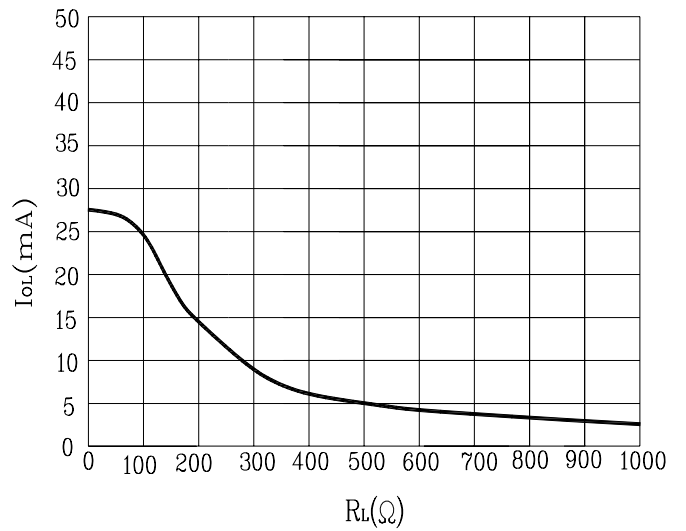
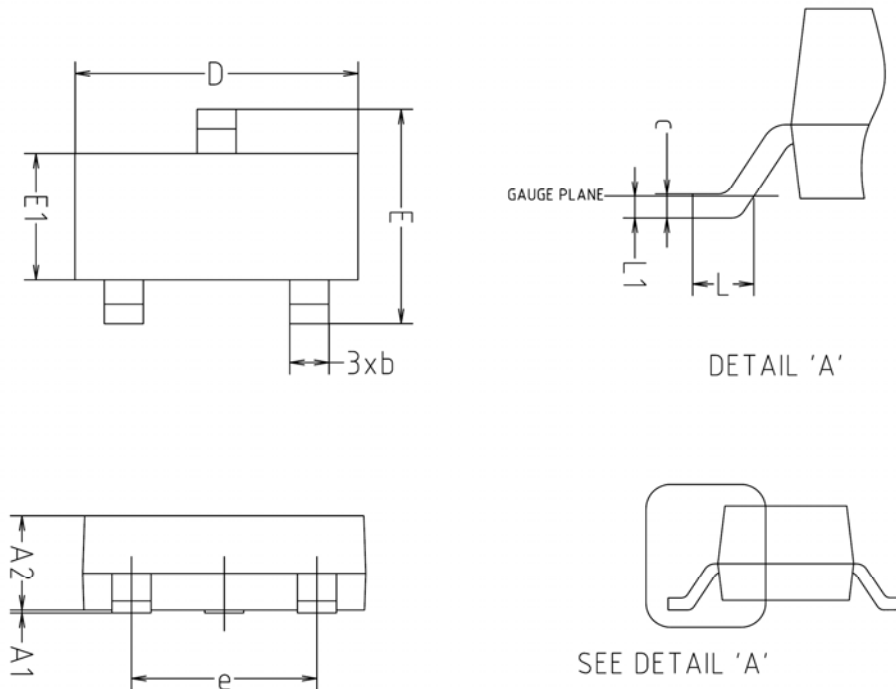


Fig. 4  $I_{OL} - R_L$

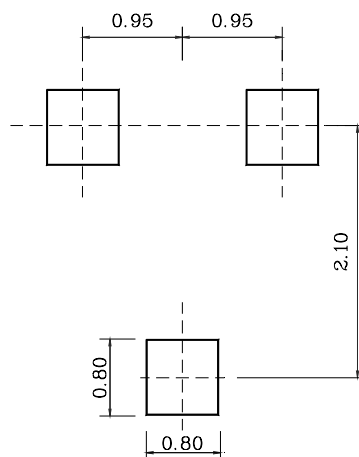


**Outline Dimension** (Unit : mm)

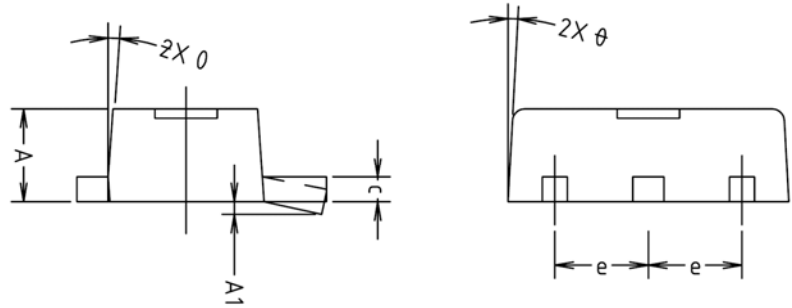
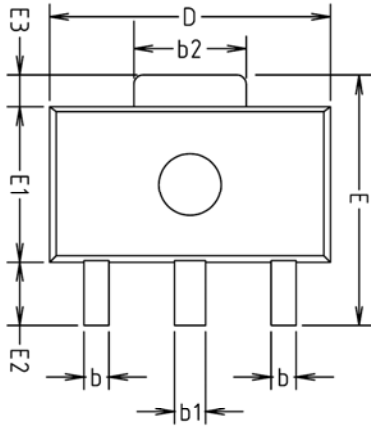


SYMBOL	MILLIMETERS			NOTE
	MINIMUM	NOMINAL	MAXIMUM	
A1	0.00	-	0.10	
A2	0.82	-	1.02	
b	0.39	0.42	0.45	
c	0.09	0.12	0.15	
D	2.80	2.90	3.00	
E	2.20	2.40	2.60	
E1	1.20	1.30	1.40	
e	1.90BSC			
L	0.20	-	-	
L1	0.12BSC			

**Recommend PCB Solder Land Dimension** (Unit : mm)

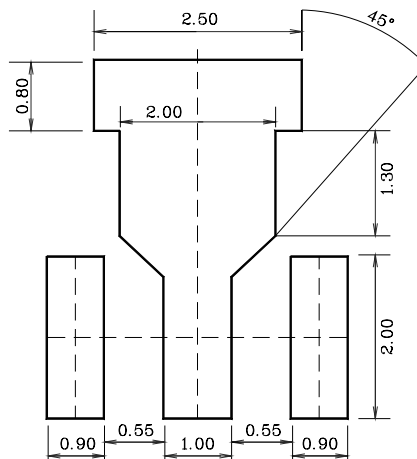


**Outline Dimension** (Unit : mm)

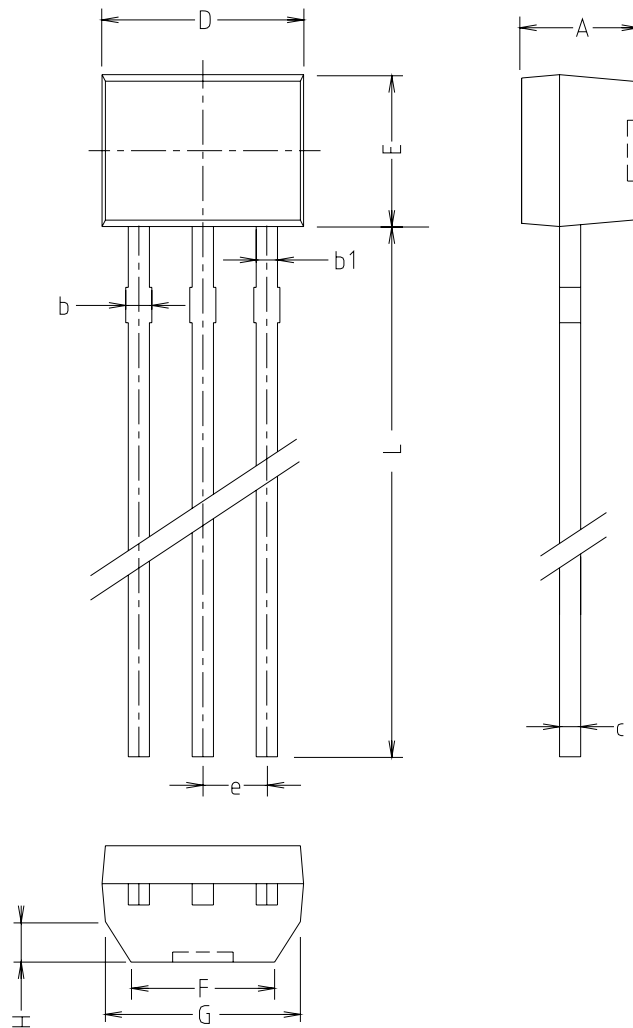


SYMBOL	MILLIMETERS			NOTE
	MINIMUM	NOMINAL	MAXIMUM	
A	1.40	1.50	1.60	
A1	0.00	-	0.10	
b	0.38	0.42	0.48	
b1	0.48	0.52	0.58	
b2	1.79	1.82	1.87	
c	0.40	0.42	0.46	
D	4.40	4.50	4.70	
E	3.70	4.00	4.30	
E1	2.40	2.50	2.70	
E2	0.80	1.00	1.20	
E3	0.40	0.50	0.60	
e	1.50 TYP.			
theta	4° TYP.			

**Recommend PCB Solder Land Dimension** (Unit : mm)

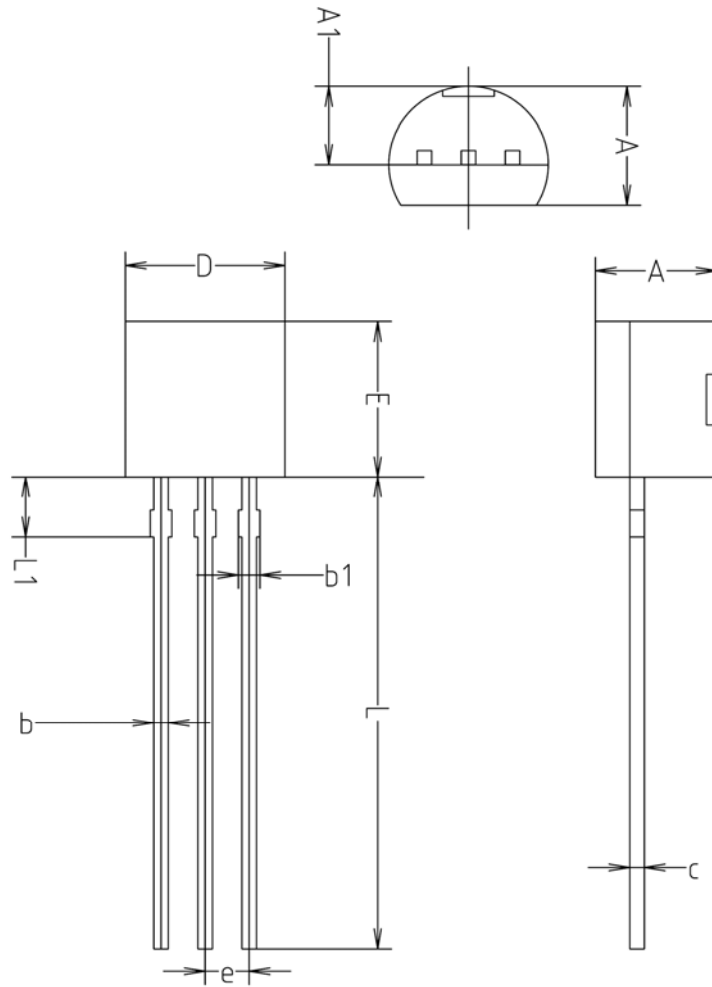


Outline Dimension (Unit : mm)



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	MILLMETERS(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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