

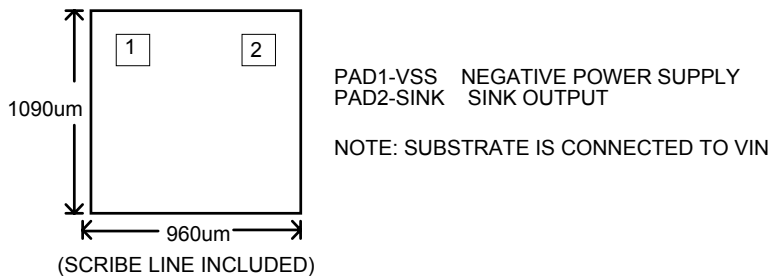
OTC-081

LOW BATTERY DETECTOR WITH LED DRIVER

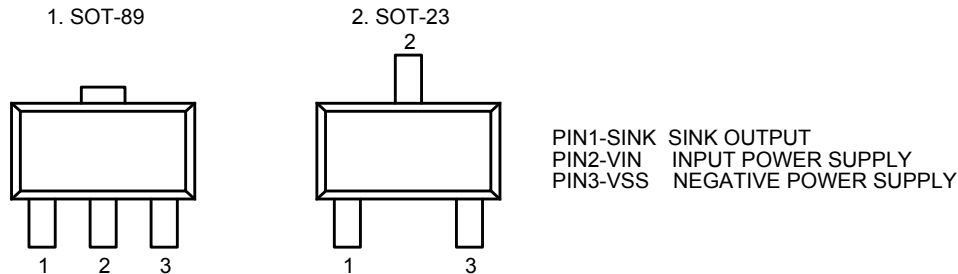
● Features

- * CMOS technology
- * Designed for bonding with LED chip
- * INPUT VOLTAGE RANGE: 2V-10V DC
- * Low standby current: $5\mu A$ for $V_{IN}=3V$
- * Can detect two 1.5V batteries without any external parts
- * Can detect three to six 1.5V batteries with two external resistors
- * Build-in detection voltage hysteresis design
- * With sink led driver to indicate low-battery condition
- * SOT-89 OR SOT-23 package to be used as voltage detector

● Pad assignment & description



● Pin assignment



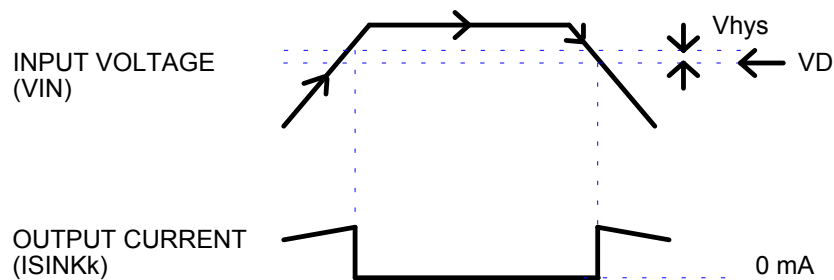
● Ordering informations

Part No.	Package	Note
OTC-0810	-	Chip form
OTC-081A	SOT-89	-
OTC-081B	SOT-23	-
OTC-081C	2 Lead red diffused type (5 ¢)	bonding with ED-012SRD LED chip wavelength λ_p (typ) 660nm , intensity (6.5mA) , I_v (minimum) 3mcd
OTC-081D	2 Lead red diffused type (2 ¢)	bonding with ED-012SRD LED chip wavelength λ_p (typ) 660nm , intensity (6.5mA) , I_v (minimum) 3mcd

- Electrical characteristics

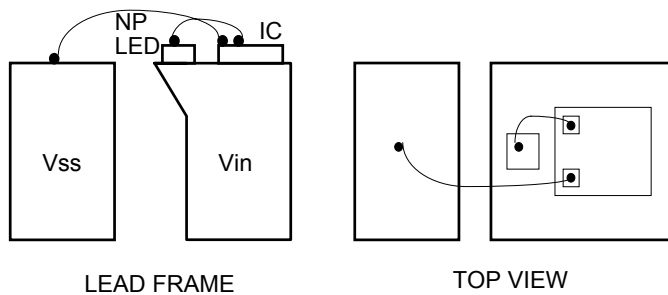
Ta = 25°C, V _{IN} = 3V (unless otherwise specified)						
Characteristic	Symbol	Condition	Min	Typ	Max	Unit
Input voltage	V _{IN}		2	3	10	V
Standby current	I _{IN}			5		μA
Detection voltage	V _D		2.35	2.5	2.65	V
Hysteresis voltage	V _{hys}			100		mV
Output sink current	I _{SINK}	V _{IN} = 2.3V		6.5		mA

- Function description

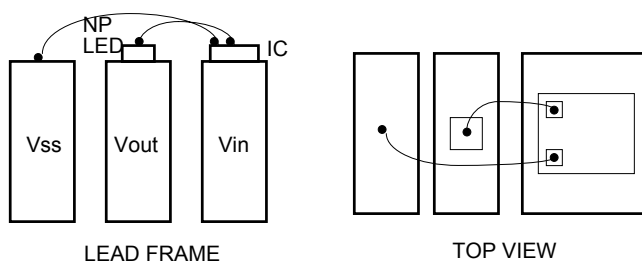


BONDING WITH LED CHIP

- Two batteries detection

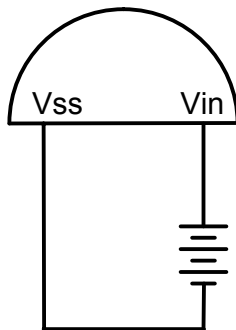


- Three to six batteries detection

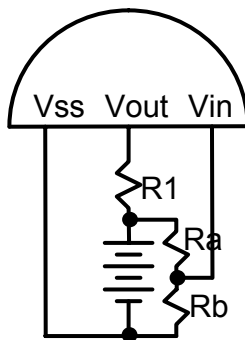


EXTERNAL PARTS CONNECTION

- Two batteries detection



- Three to six batteries detection



NOTE 1:

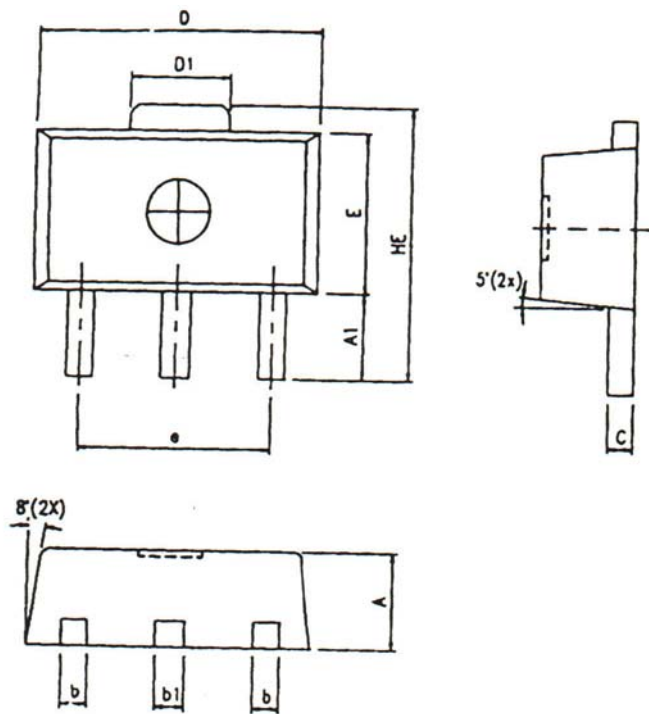
$$V_D \approx \frac{Ra + Rb}{Rb} \times 2.5V$$

$$V_{hys} \approx \frac{Ra + Rb}{Rb} \times 100mV$$

NOTE 2: Please note that when the value of Ra becomes excessively large, The detection voltage may differ from the value calculated by use of the above formula.

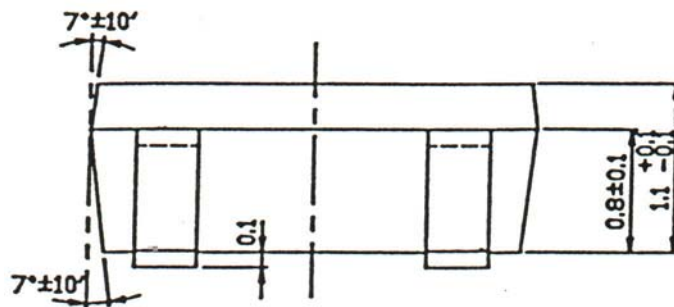
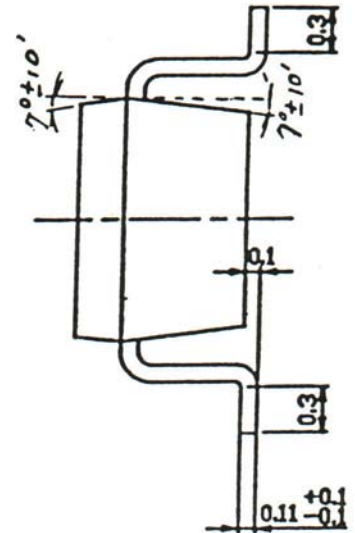
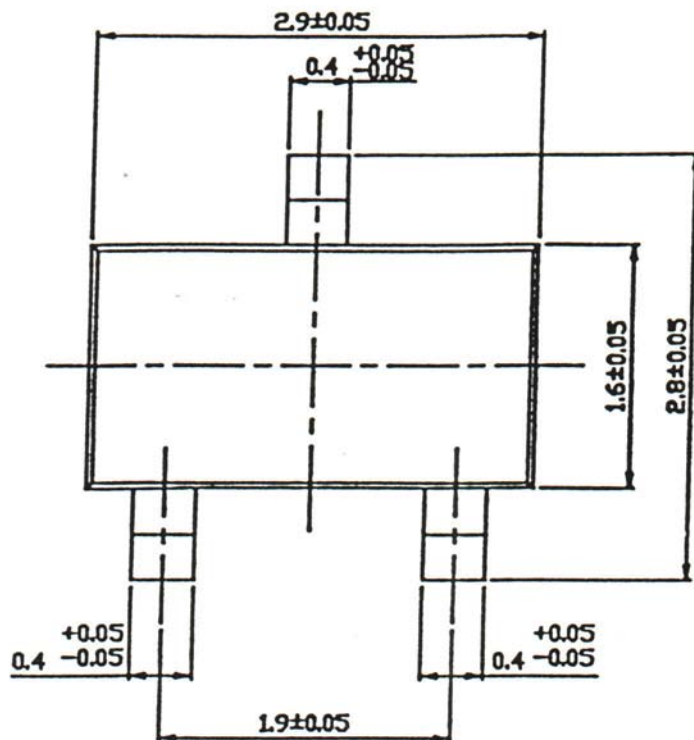
NOTE 3: R1 is optional for limiting output current.

- OTC-081A



Symbol	Dimensions in millimeters			Dimensions in inches		
	Min	Typ	Max	Min	Typ	Max
A	1.4	1.5	1.6	0.005	0.059	0.063
A1	0.8	-	-	0.031	-	-
b	0.36	0.42	0.48	0.014	0.016	0.018
b1	0.41	0.47	0.53	0.016	0.018	0.020
C	0.38	0.4	0.43	0.014	0.015	0.017
D	4.4	4.5	4.6	0.173	0.177	0.181
D1	1.4	1.6	1.75	0.055	0.062	0.069
HE	-	-	4.25	-	-	0.167
E	2.4	2.5	2.6	0.094	0.098	0.102
e	2.9	3.0	3.1	0.114	0.118	0.122

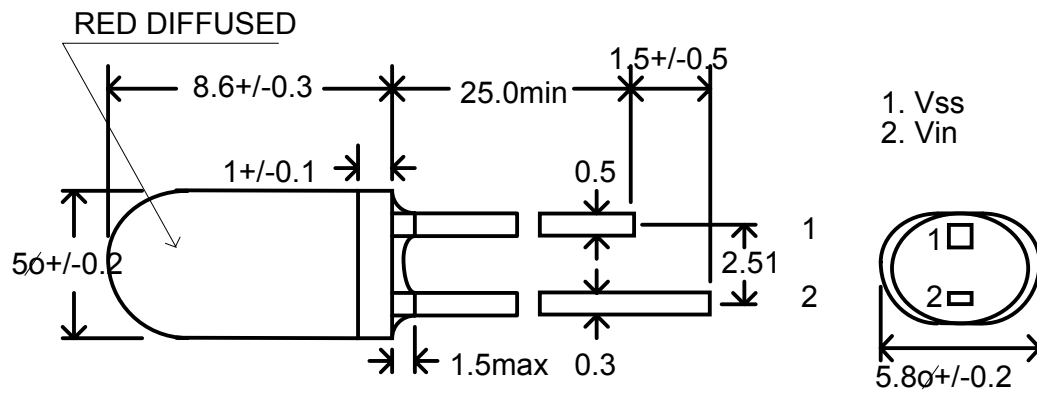
- OTC-081B



SCALE=20:1

- OTC-081C

(UNIT: mm)



- OTC-081D

(UNIT:mm)

PIN1-V_{SS}
PIN2-V_{IN}

