

# PIC0103SD

The PIC - 0103SD is a digital output detector which incorporates a photodiode with signal processing circuit (amplifier, Schmitt Trigger, voltage regulator).

### FEATURES

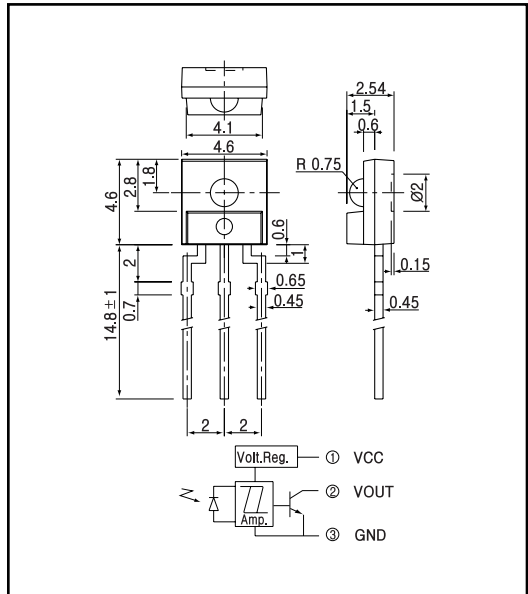
- Built - in Schmitt Trigger circuit
- Wide Vcc range
- Compatible to TTL and LSTTL

### APPLICATIONS

- Floppy disc drives
- Copiers
- VCRs, Cassette decks

### DIMENSIONS

(Unit : mm)



### MAXIMUM RATINGS

(Ta=25 )

Item	Symbol	Rating	Unit
Supply voltage	V <sub>CC</sub>	17	V
Low level output current	I <sub>OL</sub>	30	mA
Output transistor power dissipation	P <sub>o</sub>	200	mW
Operating temp.	T <sub>opr.</sub>	- 25 + 85	
Storage temp.	T <sub>stg.</sub>	- 40 + 100	
Soldering temp.*1	T <sub>sol.</sub>	260	

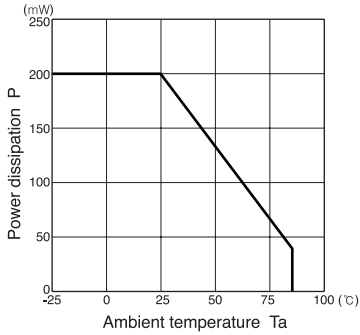
\*1. For MAX. 5 seconds at the position of 2 mm from the resin edge.

### ELECTRO-OPTICAL CHARACTERISTICS

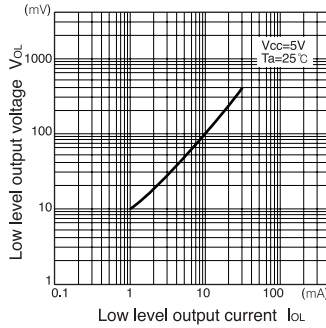
(V<sub>c</sub>=5V, Ta=25 )

Item	Symbol	Conditions	Min.	Typ.	Max.	Unit.	
Supply voltage	V <sub>CC</sub>		4.5		17	V	
High level supply current	I <sub>CCH</sub>	E <sub>v</sub> =100lx		3	6	mA	
Low level supply current	I <sub>CCL</sub>	E <sub>v</sub> =0lx		3	6	mA	
High level output voltage	V <sub>OH</sub>	E <sub>v</sub> =100lx, E=10K, V <sub>OUT</sub> =5V	4.5			V	
Low level output voltage	V <sub>OL</sub>	E <sub>v</sub> =0lx, I <sub>L</sub> =16mA			0.4	V	
L H Threshold illuminance	E <sub>VHL</sub>			40	80	lx	
H L Threshold illuminance	E <sub>VHL</sub>		15	35		lx	
Hysteresis	E <sub>VHL</sub> /E <sub>VLH</sub>	R <sub>L</sub> =280	0.5	0.8	0.95		
Peak wavelength	P			900		nm	
Switching speed	L H propagation time	t <sub>PLH</sub>		2	6	μsec.	
	H L propagation time	t <sub>PHL</sub>		3	9	μsec.	
	Rise time	t <sub>r</sub>	E <sub>v</sub> =100lx, R=280		0.1	0.5	μsec.
	Fall time	t <sub>f</sub>			0.05	0.5	μsec.

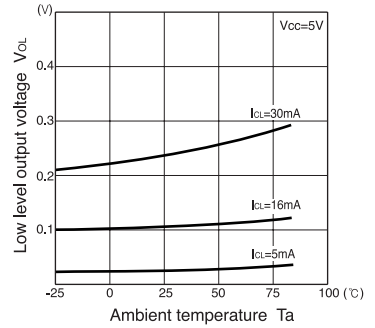
**Power dissipation Vs. Ambient temperature**



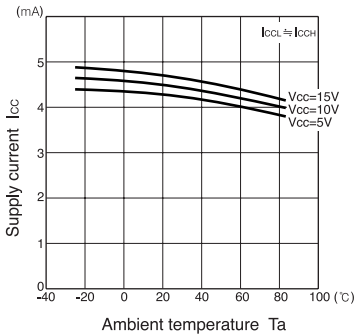
**Low level output voltage Vs. Low level output current**



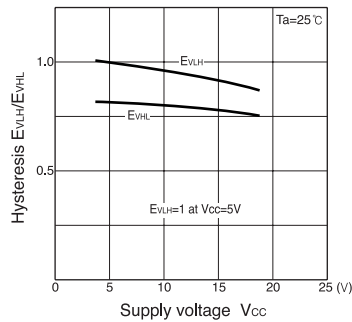
**Low level output voltage Vs. Ambient temperature**



**Supply current Vs. Ambient temperature**



**Hysteresis Vs. Supply voltage**



**Radiant pattern**

