

# PIC - 1503

The PIC - 1503 is a digital output detector which incorporates a photodiode with signal processing circuit (amplifier, Schmitt Trigger, voltage regulator).

### FEATURES

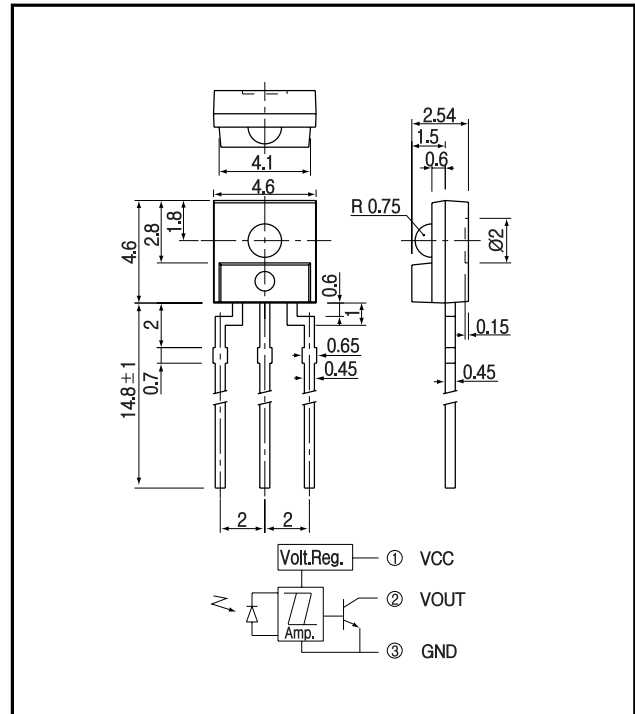
- Built - in Schmitt Trigger circuit
- Compatible to TTL and LSTTL
- Low cost

### 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>	10	V
Low level output current	I <sub>OL</sub>	20	mA
Output transistor power dissipation	P <sub>o</sub>	100	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

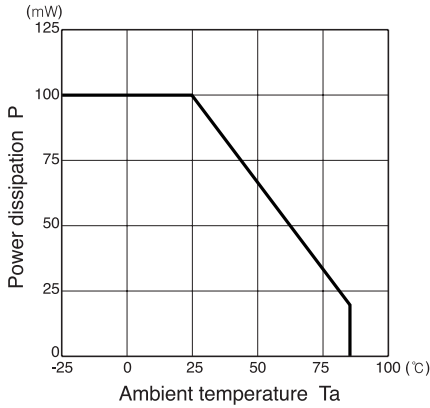
(V<sub>c</sub> = 5V, Ta = 25 )

Item	Symbol	Conditions	Min.	Typ.	Max.	Unit.
Supply voltage	V <sub>CC</sub>		4.5		5.5	V
High level supply current	I <sub>CCH</sub>	E <sub>e</sub> = 0mW/cm <sup>2</sup>		0.9	2	mA
Low level supply current	I <sub>CCL</sub>	E <sub>e</sub> = 0.5mW/cm <sup>2</sup>		1.7	3.0	mA
High level output voltage	V <sub>OH</sub>	E <sub>e</sub> = 0mW/cm <sup>2</sup> E <sub>L</sub> = 10k	4.5			V
Low level output voltage	V <sub>OL</sub>	I <sub>OL</sub> = 16mA			0.4	V
Threshold illuminance	E <sub>eHL</sub>	= 940nm		0.03	0.2	mW/cm <sup>2</sup>
Hysteresis	E <sub>vHL</sub> /E <sub>vLH</sub>	R <sub>L</sub> = 1k	0.5	0.7	0.9	
Peak wavelength	P			900		nm
Switching speed	L H propagation time	t <sub>PLH</sub>		12	30	μsec.
	H L propagation time	t <sub>PHL</sub>		2	6	μsec.
	Rise time	t <sub>r</sub>	E <sub>e</sub> = 0.5mW/cm <sup>2</sup> / 0mW/cm <sup>2</sup> = 940nm R <sub>L</sub> = 1k	0.1	0.5	μsec.
	Fall time	t <sub>f</sub>		0.1	0.5	μsec.

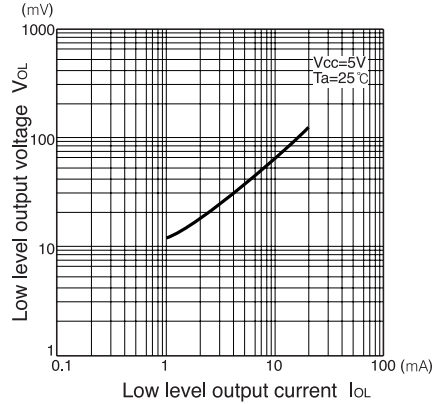
Photo IC

PIC - 1503

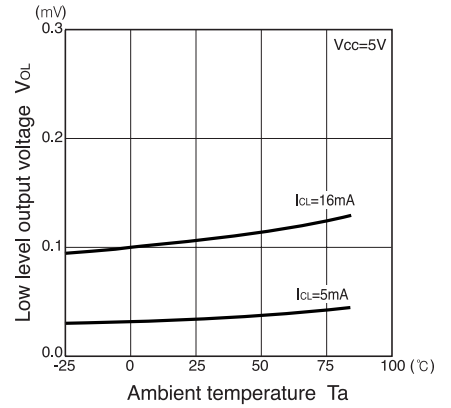
**Power dissipation Vs. Ambient temperature**



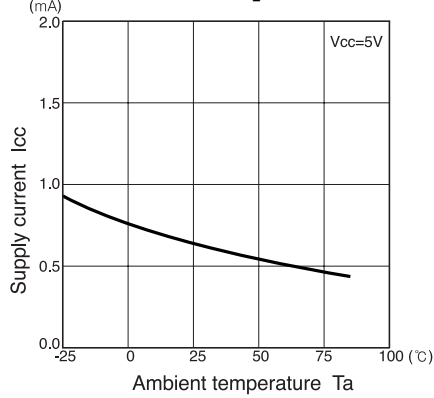
**Low level output voltage Vs. Low level output current**



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



**Supply current Vs. Ambient temperature**



**Radiant pattern**

