

# IS445/IS455 Linear Output Type OPIC Light Detector

T-41-67

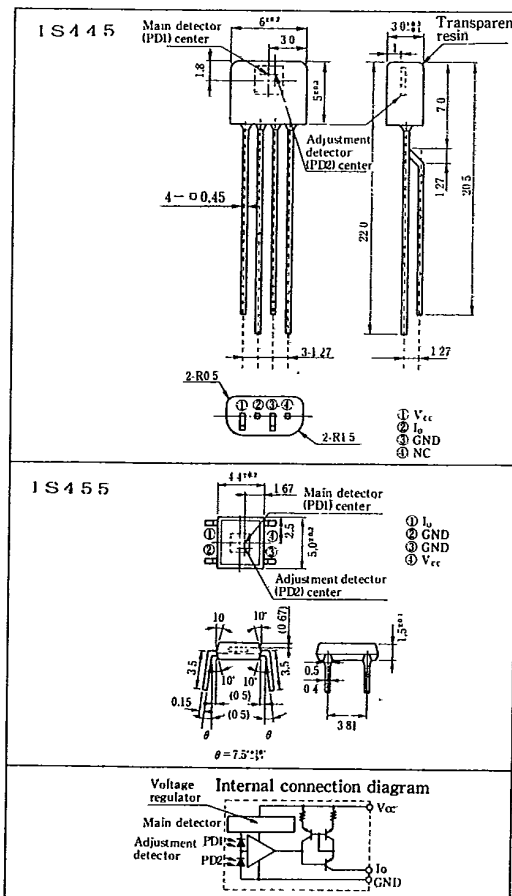
## ■ Features

1. Linear output
2. Two packages according to mounting method  
Side-view type (IS445)  
Top-view type (IS455)
3. Capable of output voltage level adjustment due to external resistor

## ■ Applications

1. Copiers

## ■ Outline Dimensions



## ■ Absolute Maximum Ratings

( $T_a = 25^\circ\text{C}$ )

Parameter	Symbol	Rating	Unit
Supply voltage	$V_{CC}$	-0.5 ~ +8	V
Output voltage	$V_o$	-0.5 ~ $V_{CC}$	V
Output current	$I_o$	-10	mA
Power dissipation	IS445	250	mW
	IS455	150	mW
Operating temperature	$T_{opr}$	-25 ~ +85	$^\circ\text{C}$
Storage temperature	IS445	-40 ~ +100	$^\circ\text{C}$
	IS455	-40 ~ +85	$^\circ\text{C}$
*1 Soldering temperature	$T_{sol}$	260	$^\circ\text{C}$

- \*1 For 3 seconds at the position of 1mm from the bottom face of resin package. (IS455)  
Immersed up to bending portion, for 5 seconds (IS445)

\*OPIC is a registered trademark of Sharp and stands for Optical IC. It has a light detecting element and signal processing circuitry integrated onto a single chip.

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Electro-optical Characteristics

(Ta=25°C, Vcc=5V)

Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Supply current	I <sub>cc</sub>	E <sub>v</sub> =0 lx	0.2	0.55	1.0	mA
Output current 1	I <sub>o1</sub>	E <sub>v</sub> =10 lx*2	-6.5	-10	-13.5	μA
Output current 2	I <sub>o2</sub>	E <sub>v</sub> =1,000 lx*2	-0.65	-1	-1.35	mA
**Output current ratio	R <sub>io</sub>		92	100	108	—
Dark output current	I <sub>od</sub>	E <sub>v</sub> =0	—	-10	-500	nA
Peak sensitivity wavelength	λ <sub>p</sub>		—	700	—	nm

\*2 E<sub>v</sub>: Illuminance by CIE standard light source A (tungsten lamp)

\*3  $RIO = \frac{I_{o2}}{I_{o1}}$

Recommended Operating Conditions

Parameter	Symbol	MIN.	MAX.	Unit
Supply voltage	V <sub>cc</sub>	4.5	5.5	V
**Illuminance	E <sub>v</sub>	10	5000	lx
Output voltage	V <sub>o</sub>	0	V <sub>cc</sub> -1.5	V
Operating temperature	T <sub>opr</sub>	-10	70	°C

\*4 E<sub>v</sub>: Illuminance by standard light source A (tungsten lamp)

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Fig. 1 Power Dissipation vs. Ambient Temperature

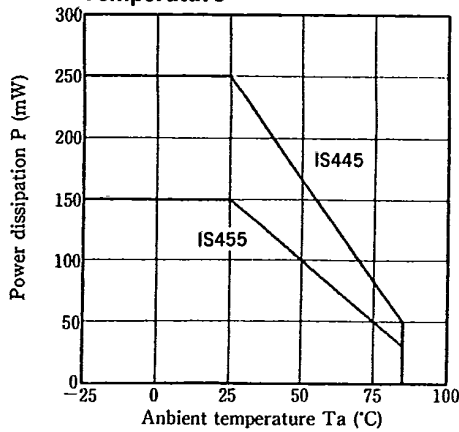


Fig 2 Output Current vs. Illuminance

