

# Infrared light emitting diode, top view type

## SIR-505STA47

The SIR-505STA47 is optimal for tape-end sensors in VTR's and other equipment. It can be directly mounted on a printed circuit board.

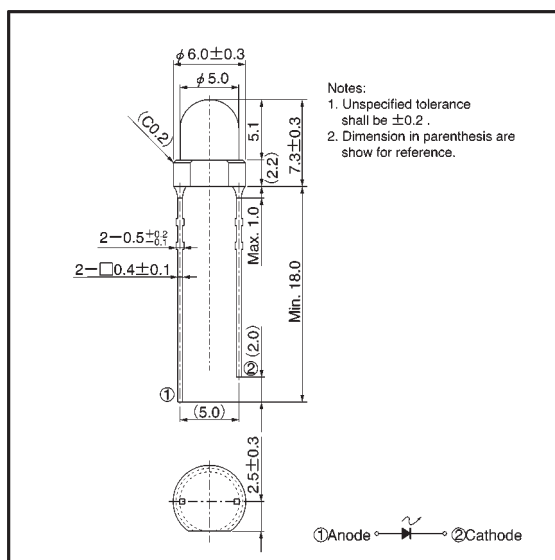
### ●Applications

VCR's, Optical control equipment

### ●Features

- 1)  $\phi 5$  mm plastic package.
- 2) Direct-mount type.
- 3) Long life and high reliability.

### ●External dimensions (Units: mm)



### ●Absolute maximum ratings (Ta = 25°C)

Parameter	Symbol	Limits	Unit
Forward current	$I_F$	100	mA
Reverse voltage	$V_R$	5	V
Power dissipation	$P_D$	160	mW
Pulse forward current	$I_{FP}^*$	1.0	A
Operating temperature	$T_{opr}$	-25~+85	°C
Storage temperature	$T_{stg}$	-40~+85	°C

\* Pulse width=0.1 msec, duty ratio 1%

●Electrical and optical characteristics (Ta = 25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Optical output	P <sub>o</sub>	—	8.0	—	mW	I <sub>F</sub> =50mA
Emitting strength	I <sub>E</sub>	5.6	10.0	25.7	mW/sr	I <sub>F</sub> =50mA
Forward voltage	V <sub>F</sub>	—	1.38	1.6	V	I <sub>F</sub> =100mA
Reverse current	I <sub>R</sub>	—	—	10	μA	V <sub>R</sub> =3V
Peak light emitting wavelength	λ <sub>P</sub>	—	950	—	nm	I <sub>F</sub> =50mA
Spectral line half width	Δλ	—	40	—	nm	I <sub>F</sub> =50mA
Half-viewing angle	θ <sub>1/2</sub>	—	±15	—	deg	I <sub>F</sub> =50mA
Response time	tr · tf	—	1.0	—	μs	I <sub>F</sub> =50mA
Cut-off frequency	fc	—	1.0	—	MHz	I <sub>F</sub> =50mA

●Electrical and optical characteristic curves

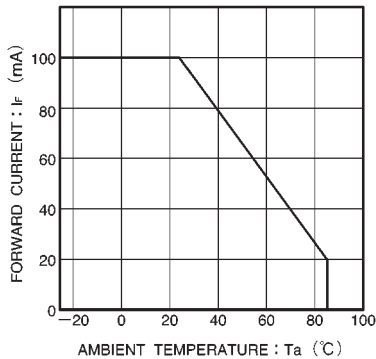


Fig.1 Forward current falloff

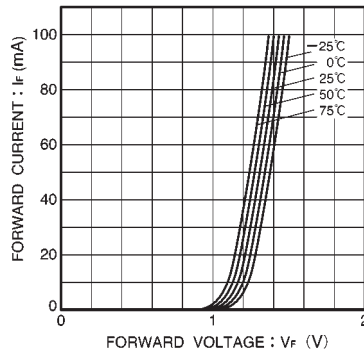


Fig.2 Forward current vs. forward voltage

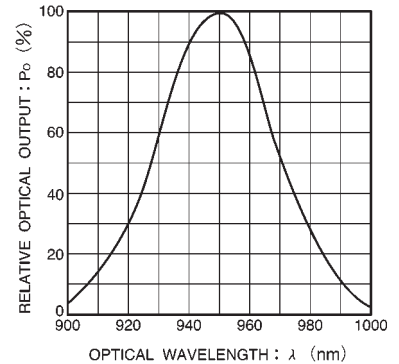


Fig.3 Wavelength characteristics

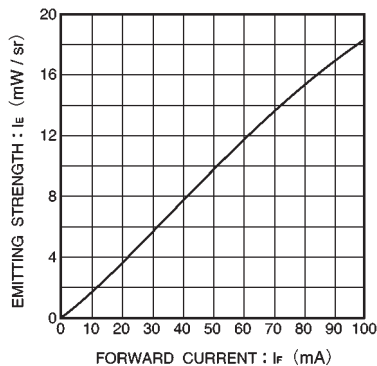


Fig.4 Emitting strength vs. forward current

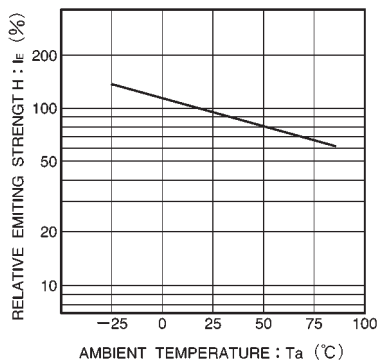


Fig.5 Relative emitting strength vs. ambient temperature

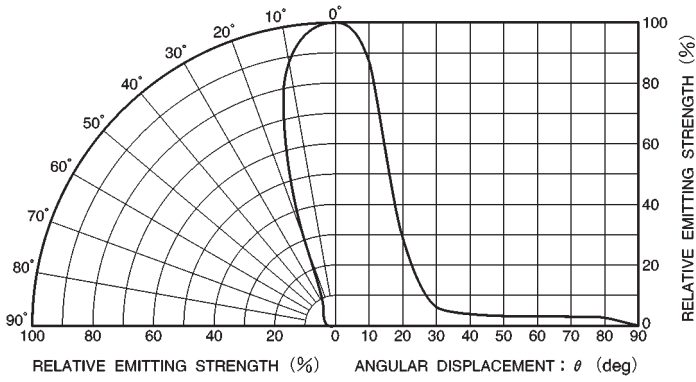


Fig. 6 Directional pattern

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