

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.

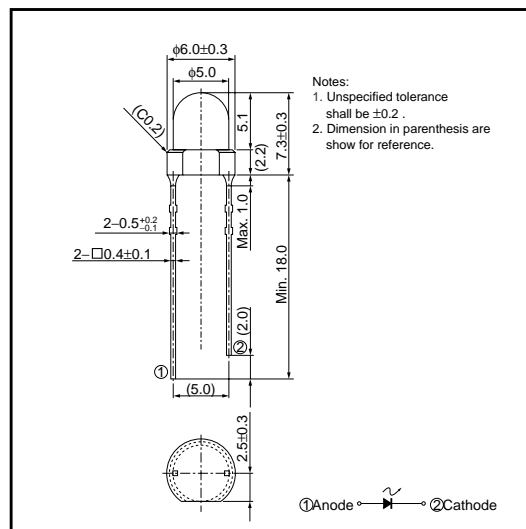
●Applications

VCR's, Optical control equipment

●Features

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

●Dimensions (Unit : 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}^*	0.5	A
Operating temperature	T_{opr}	-25 to +85	°C
Storage temperature	T_{stg}	-40 to +85	°C

* Pulse width = 0.1 ms, duty ratio 1%

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

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Optical output	P_o	-	8.0	-	mW	$I_F=50\text{mA}$
Emitting strength	I_E	5.6	10.0	25.7	mW/sr	$I_F=50\text{mA}$
Forward voltage	V_F	-	1.38	1.6	V	$I_F=100\text{mA}$
Reverse current	I_R	-	-	10	μA	$V_R=3\text{V}$
Peak light emitting wavelength	λ_P	-	950	-	nm	$I_F=50\text{mA}$
Spectral line half width	$\Delta\lambda$	-	40	-	nm	$I_F=50\text{mA}$
Half-viewing angle	$\theta_{1/2}$	-	± 15	-	deg	$I_F=50\text{mA}$
Response time	$t_r \cdot t_f$	-	1.0	-	μs	$I_F=50\text{mA}$
Cut-off frequency	f_c	-	1.0	-	MHz	$I_F=50\text{mA}$

Sensors

●Electrical and optical characteristic curves

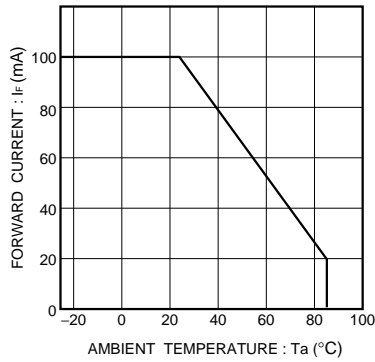


Fig.1 Forward current falloff

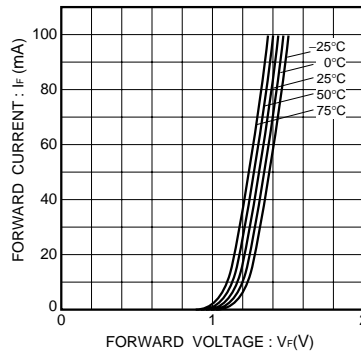


Fig.2 Forward current vs. forward voltage

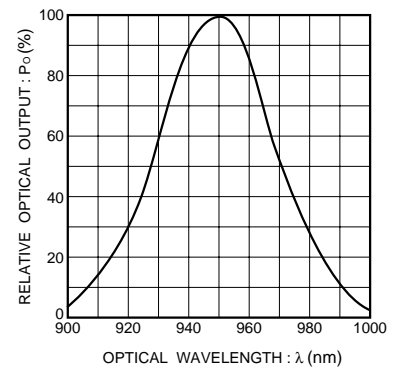


Fig.3 Wavelength characteristics

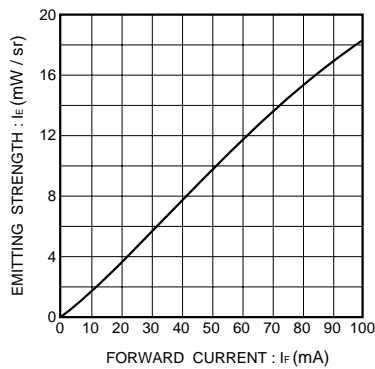


Fig.4 Emitting strength vs. forward current

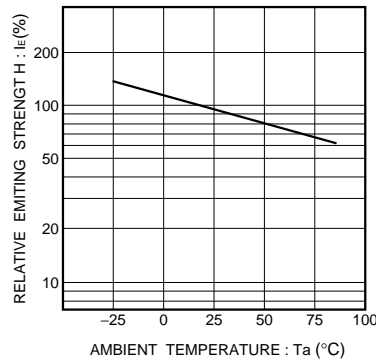


Fig. 5 Relative emitting strength vs. ambient temperature

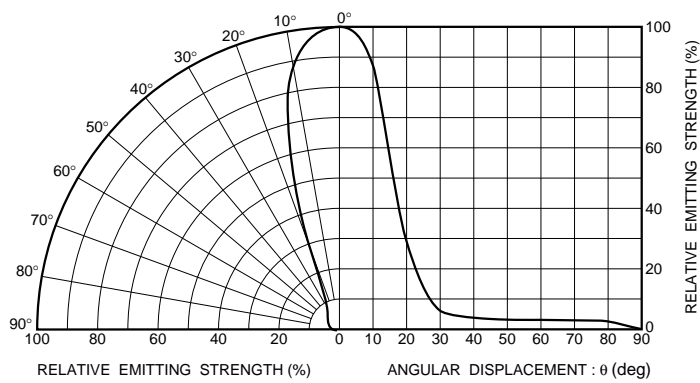


Fig. 6 Directional pattern

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