

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.

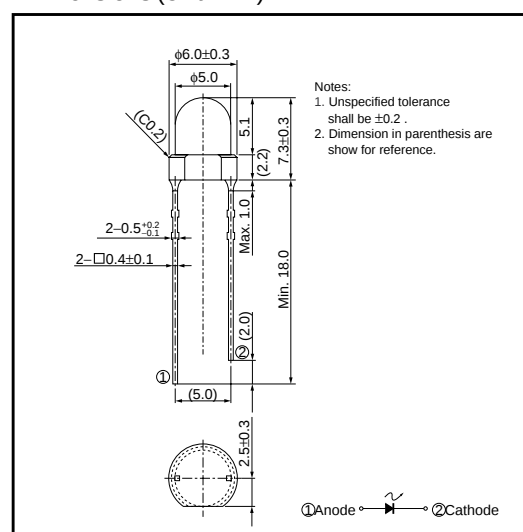
●Applications

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

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 $+85$	$^\circ\text{C}$
Storage temperature	T_{stg}	-40 to $+85$	$^\circ\text{C}$

* Pulse width = 0.1 ms, duty ratio 1%

●Electrical and optical characteristics ($T_a = 25^\circ\text{C}$)

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	$t_r + t_f$	—	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

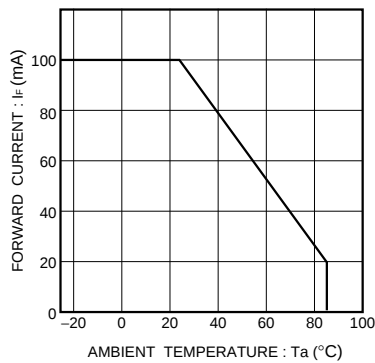


Fig.1 Forward current falloff

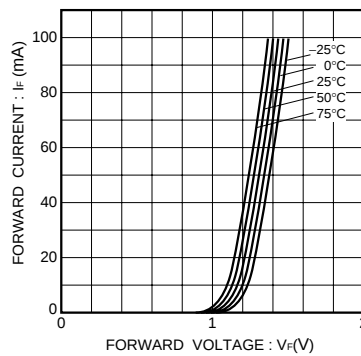


Fig.2 Forward current vs. forward voltage

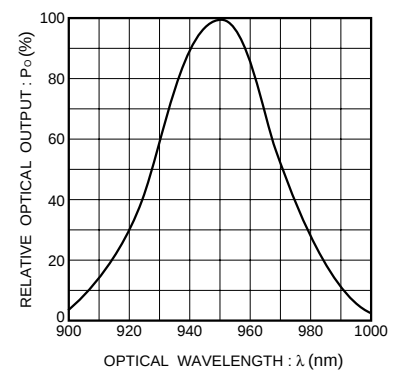


Fig.3 Wavelength characteristics

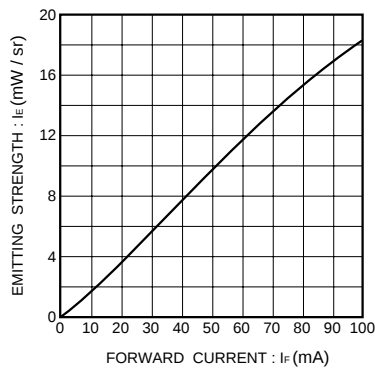


Fig.4 Emitting strength vs. forward current

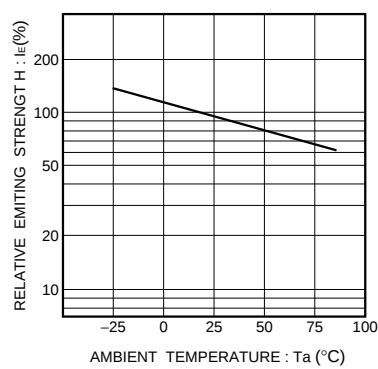


Fig.5 Relative emitting strength vs. ambient temperature

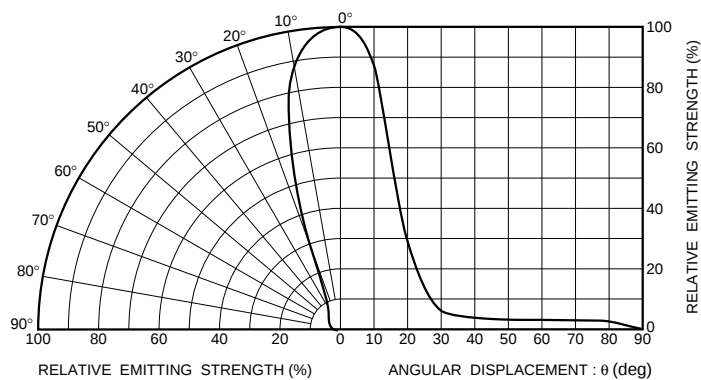


Fig.6 Directional pattern

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