ST178HR

● Features

• Combines high output GaAs IRED with high sensitive phototransistor.

• Detection distance is between:0.5~1.2mm

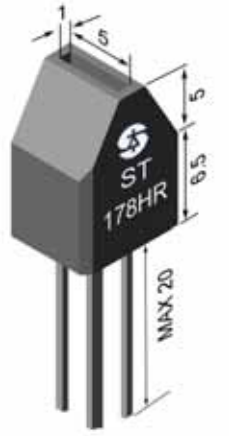
• Non-contact detecting manner.

● Applications

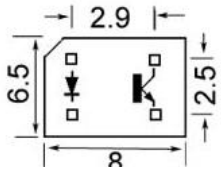
• Bar code and encoder disk detection.

● Dimensions :Unit:mm

Unless othewise specified, the tolerances are ±0.2mm.



Internal Circuit



●Absolute Maximum Ratings(Ta=25℃)

Parameter		Symbol	Rating	Unit
Input	Forward Current	I_F	50	mV
	Reverse Voltage	V_R	6	V
	Power Dissipation	P	75	mW
Output	Collector-Emitter Voltage	V_{CEO}	25	V
	Emitter-Collector Voltage	V_{ECO}	6	V
	Collector Power Dissipation	P_C	50	mW
*Operating Temperature		T_{opr}	-20～65	℃
Storage Temperature		T_{stg}	-30～75	℃
** Soldering Temperature		T_{sol}	260	℃

*The special requirement could be met according to customer's request.

**Soldering time: 5s max. Soldering position: at least 1.5mm from the base of the package.

● Electro-Optical Characteristics(Ta=25℃)

Parameter			Symbol	Test Condition	Min.	Typ.	Max.	Unit
Input	Forward Voltage		V_F	I_F=20mA	-	1.25	1.5	V
	Reverse Current		I_R	V_R=3V	-	-	10	μA
Output	Collector Dark Durrent		I_{CEO}	V_{CE}=20V	-	-	1	μA
	Collector Light Current		I_L	V_{CE}=5V I_F=8mA	0.4			mA
	Collector-Emitter Saturation Voltage		$V_{CE(SAT)}$	I_F=8mA Ic=0.15mA		-	0.4	V
Transfer Character -istics	Response Time	Rise Time	Tr	I_F=20mA V_{CE}=5V R_C=100Ω	-	10	-	μS
		Fall Time	Tf		-	10	-	

Note: Collector light current I_L, Collector-emitter saturation voltage $V_{CE(SAT)}$, Relative current , Response time are measured within 0.5~1.2mm between photointerrupter's top and reflecting surface. The value is effected by the smooth of light reflecting surface.

Aplication Circuit

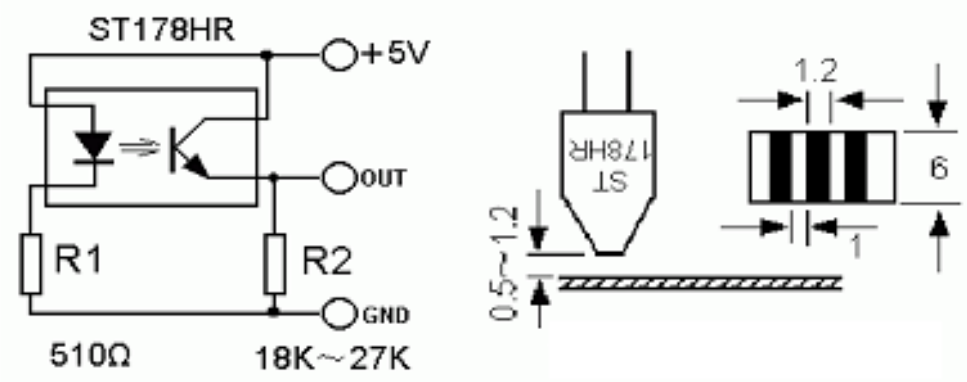


Fig. 1 Forward current vs. forward voltage

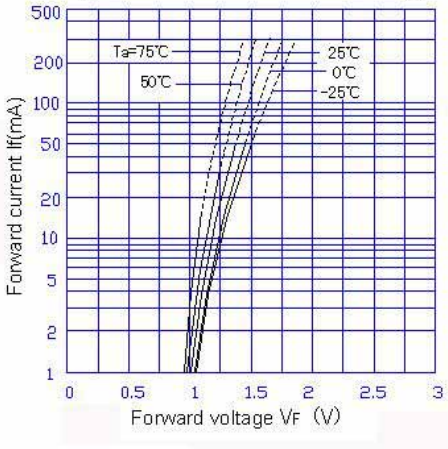


Fig. 2 Relative collector current vs. distance