

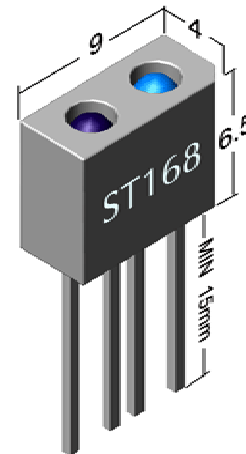
**ST168**
**● Features**

- Combines high output GaAs IRED with high sensitive phototransistor.
- Non-contact detecting manner

**● Applications**

- IC card electric power meter.
- AMR system.
- OA equipment: facsimile, printer, copier etc.
- Combined with direction detector IC(ST288A), it can be used as detecting moving object direction, distance and rotating speed etc.

**● Dimensions** Unit:mm

 Unless otherwise specified, the tolerances are  $\pm 0.2\text{mm}$ 

**● Absolute Maximum Ratings(Ta=25°C)**

Parameter		Symbol	Rating	Unit
Input	Forward Current	I <sub>F</sub>	50	mV
	Reverse Voltage	V <sub>R</sub>	6	V
	Power Dissipation	P	75	mW
Output	Collector-Emitter Voltage	V <sub>CEO</sub>	25	V
	Emitter-Collector Voltage	V <sub>ECO</sub>	6	V
	Collector Power Dissipation	P <sub>C</sub>	50	mW
*Operating Temperature		T <sub>opr</sub>	-20~65	°C
Storage Temperature		T <sub>stg</sub>	-30~75	°C
** Soldering Temperature		T <sub>sol</sub>	260	°C

\*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°C)**

Parameter		Symbol	Test Condition	Min.	Typ.	Max.	Unit	
Input	Forward Voltage	V <sub>F</sub>	I <sub>F</sub> =20mA	-	1.25	1.5	V	
	Reverse Current	I <sub>R</sub>	V <sub>R</sub> =3V	-	-	10	μA	
Collector Dark Current		I <sub>CEO</sub>	V <sub>CE</sub> =20V	-	-	1	μA	
Output	Collector Light Current	I <sub>L</sub>	V <sub>CE</sub> =5V I <sub>F</sub> =8mA	L3	0.3	-	-	mA
				L4	0.4	-	-	
				L5	0.5	-	-	
Collector-Emitter Saturation Voltage		V <sub>CE(SAT)</sub>	I <sub>F</sub> =8mA I <sub>C</sub> =0.15mA	-	-	0.4	V	
Transfer Character-istics	Response Time	Rise Time	I <sub>F</sub> =20mA V <sub>CE</sub> =5V R <sub>C</sub> =100Ω	-	5	-	μS	
		Fall Time		T <sub>f</sub>	-	5		-

 Notes: Collector light current I<sub>L</sub>, Collector-emitter saturation voltage V<sub>CE(SAT)</sub>, Relative current, Response time is measured within 2~5mm between photointerrupter's top and reflecting surface. The value is affected by the smooth of light reflecting surface.

Internal Circuit

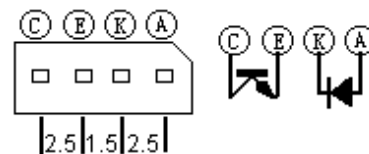


Fig.1 Forward current vs. Forward voltage

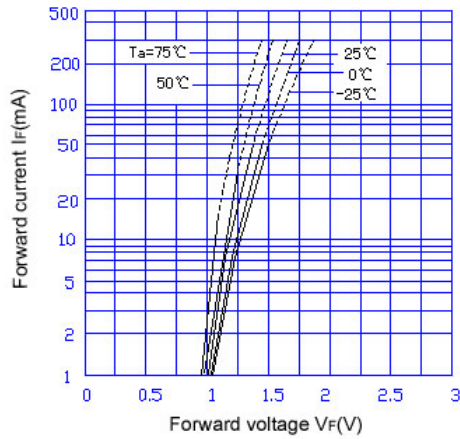
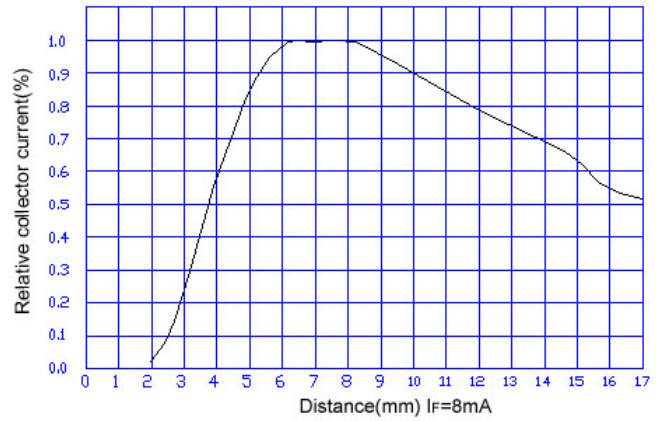


Fig. 2 Relative collector current vs. distance



- Distance in Fig.2 is from photointerrupter's top to the reflecting surface.
- The reflecting surface is a sub-reflection aluminium plate. its surface is parallel to the top of photointerrupter.
- When relative collector current rises to 1.0, the conversion efficiency is the highest under this distance.
- The curves above are for you reference.