

## ATIR0511S

### Photointerrupter - Transmissive Type

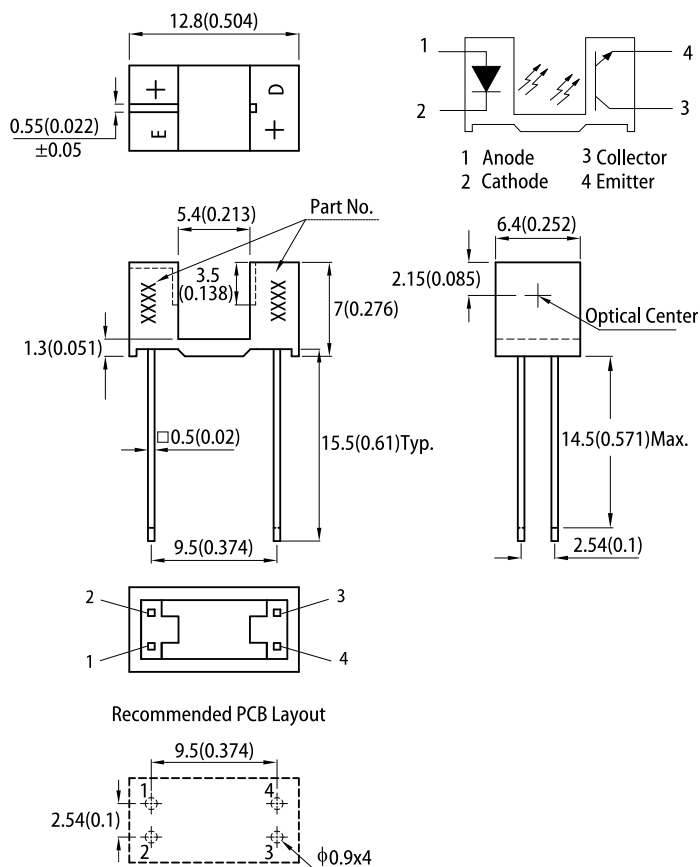
#### FEATURES

- Ultra-small
- Minimal influence from stray light
- Low collector-emitter saturation voltage
- RoHS compliant

#### APPLICATIONS

- Optical control equipment
- Cameras
- Floppy disk drives

#### PACKAGE DIMENSIONS



Notes:  
 1. All dimensions are in millimeters (inches).  
 2. Tolerance is  $\pm 0.25(0.01)$  unless otherwise noted.  
 3. The specifications, characteristics and technical data described in the datasheet are subject to change without prior notice.

#### ELECTRICAL / OPTICAL CHARACTERISTICS at $T_A=25^\circ\text{C}$

Parameter	Symbol	Value			Units	Test Conditions		
		Min.	Typ.	Max.				
Input	Forward voltage	$V_F$	1.0	1.2	1.5	V	$I_F=20\text{mA}$	
	Reverse current	$I_R$	-	-	10	$\mu\text{A}$	$V_R=6\text{V}$	
Output	Collector dark current	$I_{CEO}$	-	-	100	nA	$V_{CE}=20\text{V}$	
Transfer characteristics	Collector-emitter saturation voltage	$V_{CE(sat)}$	-	-	0.4	V	$I_F=40\text{mA}, I_C=1\text{mA}$	
	Current transfer ratio	CTR	-	10	-	%	$I_F=20\text{mA}, V_{CE}=5\text{V}$	
	Response time	Rise time	$t_r$	-	5	25	$\mu\text{s}$	$V_{CE}=2\text{V}, I_C=2\text{mA}$ $R_L=100\ \Omega$
		Fall time	$t_f$	-	4	20	$\mu\text{s}$	

Note:  
 1. Excess driving current and/or operating temperature higher than recommended conditions may result in severe light degradation or premature failure.

### ABSOLUTE MAXIMUM RATINGS at $T_A=25^\circ\text{C}$

	Parameter	Symbol	Rating	Unit
Input	Forward current	$I_F$	50	mA
	Reverse voltage	$V_R$	6	V
	Power dissipation	$P_D$	75	mW
	Peak Forward Current (Pulse Width $\leq 100\mu\text{s}$ , Duty Cycle=1%)	$I_{FP}$	1	A
Output	Collector-emitter voltage	$V_{CEO}$	35	V
	Emitter-collector voltage	$V_{ECO}$	6	V
	Collector current	$I_C$	20	mA
	Collector power dissipation	$P_C$	75	mW
Operating temperature		$T_{opr}$	-25~+85	$^\circ\text{C}$
Storage temperature		$T_{stg}$	-40~+100	$^\circ\text{C}$
Soldering temperature (1/16 inch from body for 5 seconds)		$T_{sol}$	260	$^\circ\text{C}$

Note:

1. Relative humidity levels maintained between 40% and 60% in production area are recommended to avoid the build-up of static electricity – Ref JEDEC/JESD625-A and JEDEC/J-STD-033.

### TECHNICAL DATA

Fig. 1 Forward Current vs. Forward Voltage

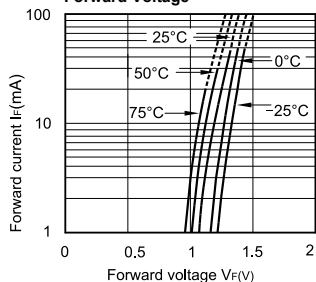


Fig. 2 Collector Current vs. Forward Current

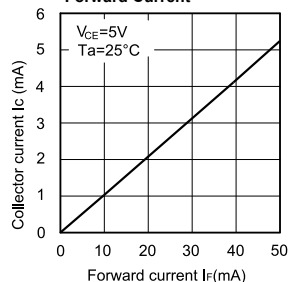


Fig. 3 Collector Current vs. Collector-Emitter Voltage

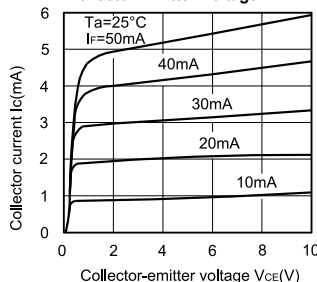


Fig. 4 Collector Current vs. Ambient Temperature

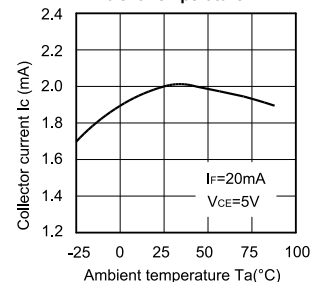


Fig. 5 Collector-Emitter Saturation Voltage vs. Ambient Temperature

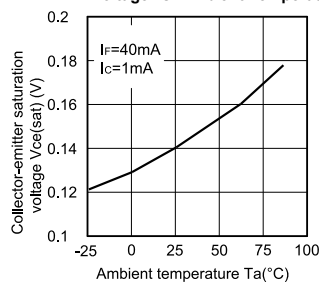


Fig. 6 Relative Collector Current vs. Shield Distance (1)

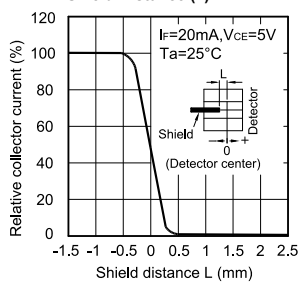


Fig. 7 Relative Collector Current vs. Shield Distance (2)

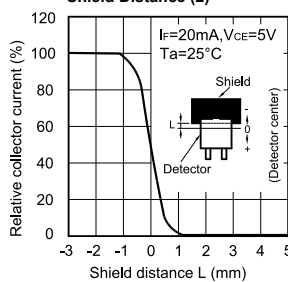


Fig. 8 Response Time vs. Load Resistance

