

PHOTO-INTERRUPTER

ATIR0311S

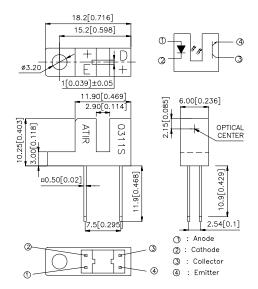
Features

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

Applications

- •Optical control equipment.
- Cameras.
- •Floppy disk drives.

Package Dimensions



Notes

- 1. All dimensions are in millimeters (inches).
- 2. Tolerance is $\pm 0.15(0.006")$ unless otherwise noted.
- 3. Lead spacing is measured where the lead emerge package.
- 4. Specifications are subject to change without notice.

Absolute Maximum Ratings (T_a=25°C)

Parameter			Rating	Unit
Input	Forward current	I _F	50	mA
	Reverse voltage	V _R	5	V
	Power dissipation	Р	75	mW
Output	Collector-emitter voltage	V _{CEO}	30	V
	Emitter-collector voltage	V _{ECO}	5	V
	Collector current	I _c	20	mA
	Collector power dissipation	P _c	75	mW
Operating temperature		Topr	-25~+85	°C
Storage temperature		Tstg	-40~+100	°C
Soldering temperature (1/16 inch from body for 5 seconds)		Tsol	260	°C

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Electro-optical Characteristics (Ta=25°C)

Parameter		Symbol	Conditions	Min.	Тур.	Max.	Unit	
Input	Forward voltage		V _F	I _F =20mA	1	1.2	1.5	V
	Reverse current		I _R	V _R =5V	_	_	10	μΑ
Output	Collector dark current		I _{CEO}	V _{CE} =20V	ı	ı	100	nA
	Collector-emitter saturation voltage		$V_{\text{CE(sat)}}$	I _c =1mA I _F =40mA	-	_	0.4	V
Transfer charact-	Current transfer ratio		CTR	V _{CE} =5V I _F =20mA	_	38	_	%
eristics	Response time	Rise time	t,	$V_{CE}=2V$ $I_{C}=2mA$ $R_{L}=100\Omega$	1	5	25	μsec
		Fall time	t _f		_	4	20	μsec

Fig.1 Forward Current vs. Forward Voltage

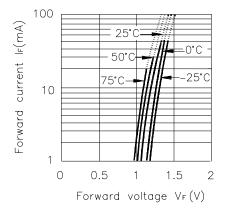


Fig.3 Collector Current vs.
Collector-emitter Voltage

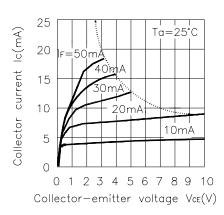
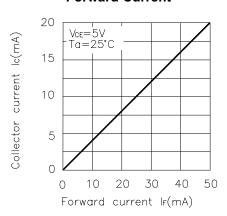


Fig.2 Collector Current vs. Forward Current



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Fig.4 Collector Current vs. **Ambient Temperature**

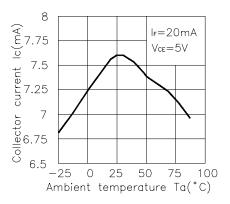


Fig.6 Relative Collector Current vs. Shield Distance(1)

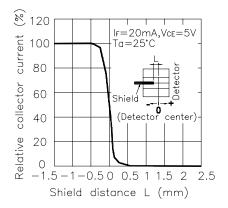


Fig.8 Response Time vs. **Load Resistance**

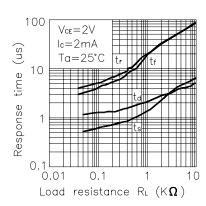


Fig.5 Collector-emitter Saturation Voltage vs. Ambient Temperature

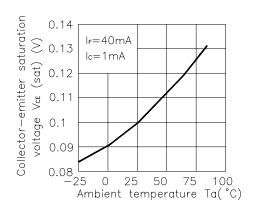
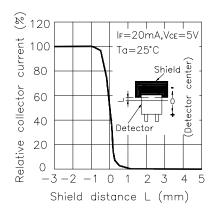
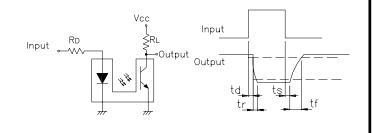


Fig.7 Relative Collector Current vs. Shield Distance(2)



Test Circuit for Response Time



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