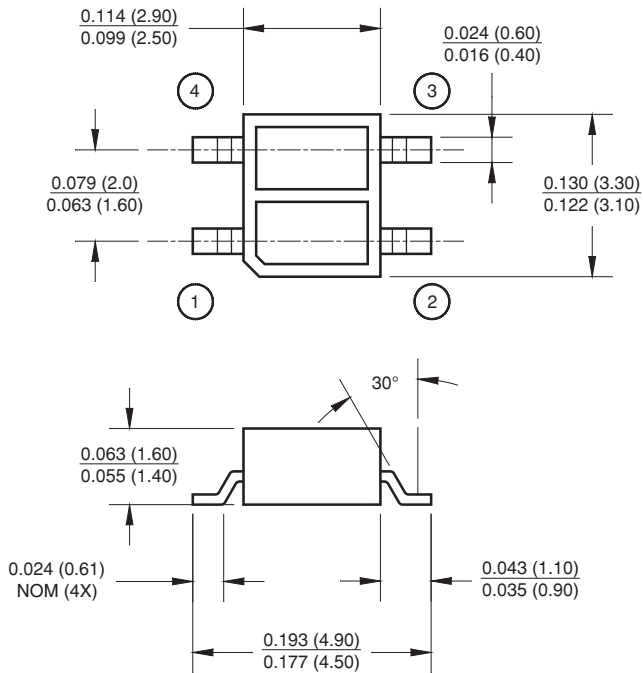


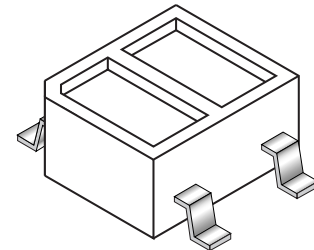
**PACKAGE DIMENSIONS**



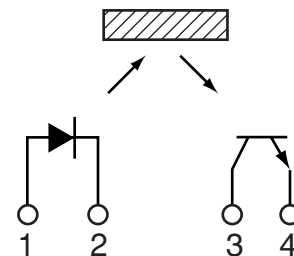
PIN 1 ANODE      PIN 3 COLLECTOR  
PIN 2 CATHODE    PIN 4 EMITTER

**NOTES:**

1. Dimensions for all drawings are in inches (millimeters).
2. Tolerance of  $\pm .010$  (.25) on all non-nominal dimensions



**SCHEMATIC**



**FEATURES**

- Phototransistor output
- Tape and reel packaging
- No contact surface sensing
- Miniature package
- Lead form style: Gull Wing

**ABSOLUTE MAXIMUM RATINGS** ( $T_A = 25^\circ\text{C}$  unless otherwise specified)

Parameter	Symbol	Rating	Units
Operating Temperature	$T_{OPR}$	-25 to +85	$^\circ\text{C}$
Storage Temperature	$T_{STG}$	-30 to +100	$^\circ\text{C}$
Soldering Temperature (Iron) <sup>(2,3,4)</sup>	$T_{SOL-I}$	240 for 5 sec	$^\circ\text{C}$
Soldering Temperature (Flow) <sup>(2,3)</sup>	$T_{SOL-F}$	260 for 10 sec	$^\circ\text{C}$
<b>EMITTER</b>			
Continuous Forward Current	$I_F$	50	mA
Reverse Voltage	$V_R$	5	V
Peak Forward Current <sup>(5)</sup>	$I_{FP}$	1	mA
Power Dissipation <sup>(1)</sup>	$P_D$	75	mW
<b>SENSOR</b>			
Collector-Emitter Voltage	$V_{CEO}$	30	V
Emitter-Collector Voltage	$V_{ECO}$	5	V
Collector Current	$I_C$	20	mA
Power Dissipation <sup>(1)</sup>	$P_D$	50	mW

**ELECTRICAL / OPTICAL CHARACTERISTICS** ( $T_A = 25^\circ\text{C}$  unless otherwise specified)

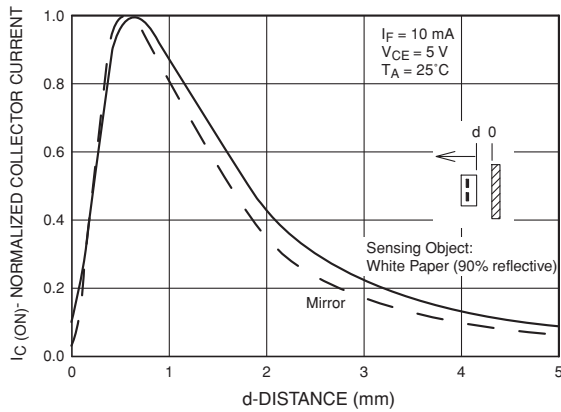
PARAMETER	TEST CONDITIONS	SYMBOL	MIN.	TYP.	MAX.	UNITS
<b>INPUT DIODE</b>						
Forward Voltage	$I_F = 20\text{ mA}$	$V_F$	—	1.2	1.6	V
Reverse Leakage Current	$V_R = 5\text{ V}$	$I_R$	—	—	10	$\mu\text{A}$
Peak Emission Wavelength	$I_F = 20\text{ mA}$	$\lambda_{PE}$	—	940	—	nm
<b>OUTPUT TRANSISTOR</b>						
Collector-Emitter Dark Current	$V_{CE} = 20\text{ V}, I_F = 0\text{ mA}$	$I_D$	—	—	100	nA
<b>COUPLED</b>						
On-State Collector Current	$I_F = 20\text{ mA}, V_{CE} = 5\text{ V}$	$I_{C(ON)}$	0.15	0.40	—	mA
Saturation Voltage		$V_{CE(SAT)}$	—	—	0.3	V
Rise Time	$V_{CC} = 5\text{ V}, I_{C(ON)} = 100\text{ }\mu\text{A}, R_L = 1\text{ K}\Omega$	$t_r$	—	20	—	$\mu\text{s}$
Fall Time		$t_f$	—	20	—	

**NOTES:**

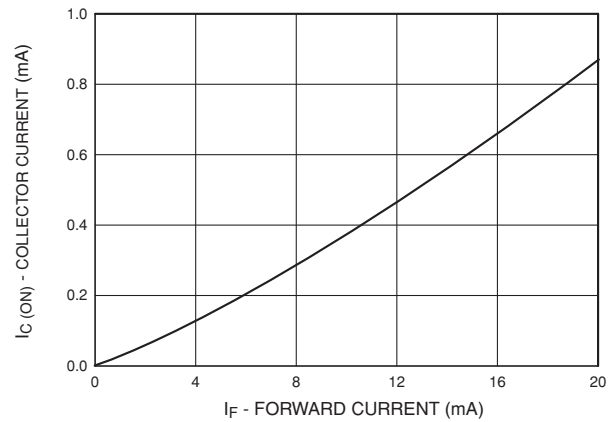
1. Derate power dissipation linearly 1.33 mW/ $^\circ\text{C}$  above 25 $^\circ\text{C}$ .
2. RMA flux is recommended.
3. Methanol or isopropyl alcohols are recommended as cleaning agents.
4. Soldering iron 1/16" (1.6mm) from housing.
5. Pulse conditions:  $t_p = 100\text{ }\mu\text{s}; T = 10\text{ ms}$ .

**TYPICAL PERFORMANCE CURVES**

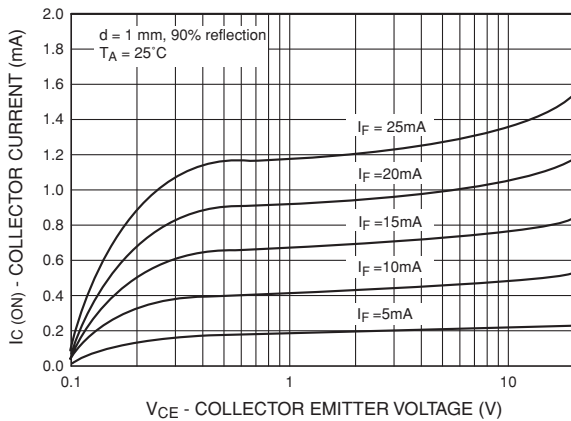
**Fig. 1 Normalized Collector Current vs. Distance between device and reflector**



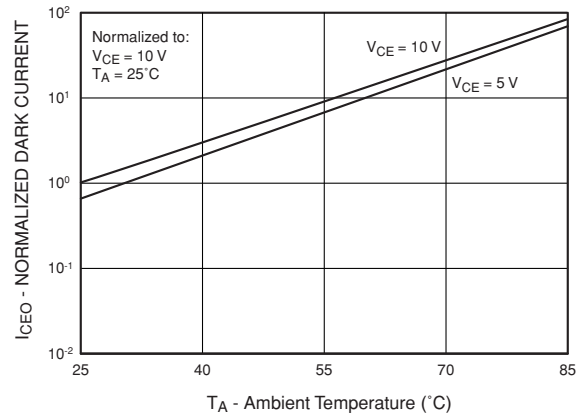
**Fig. 2 Collector Current vs. Forward Current**



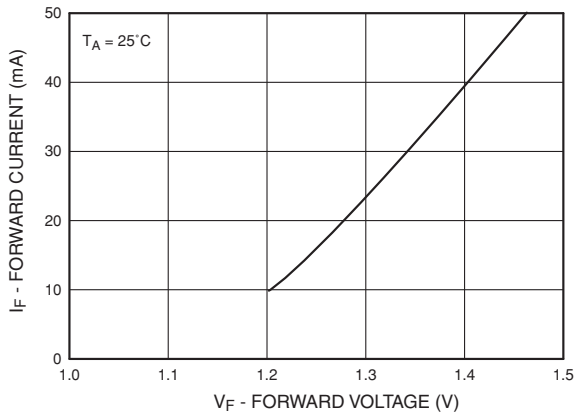
**Fig. 3 Collector Current vs. Collector to Emitter Voltage**



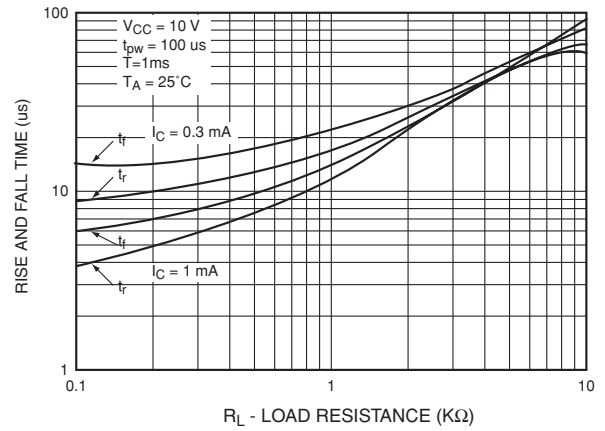
**Fig. 4 Collector Emitter Dark Current (Normalized) vs. Ambient Temperature**



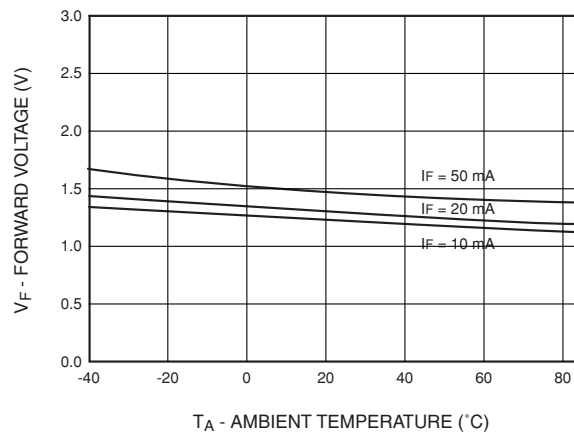
**Fig. 5 Forward Current vs. Forward Voltage**



**Fig. 6 Rise and Fall Time vs. Load Resistance**



**Fig. 7 Forward Voltage vs. Ambient Temperature**



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