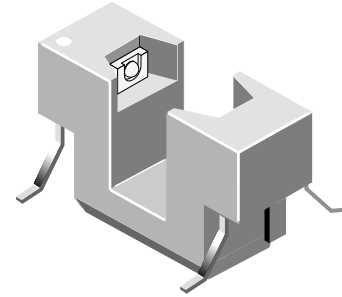
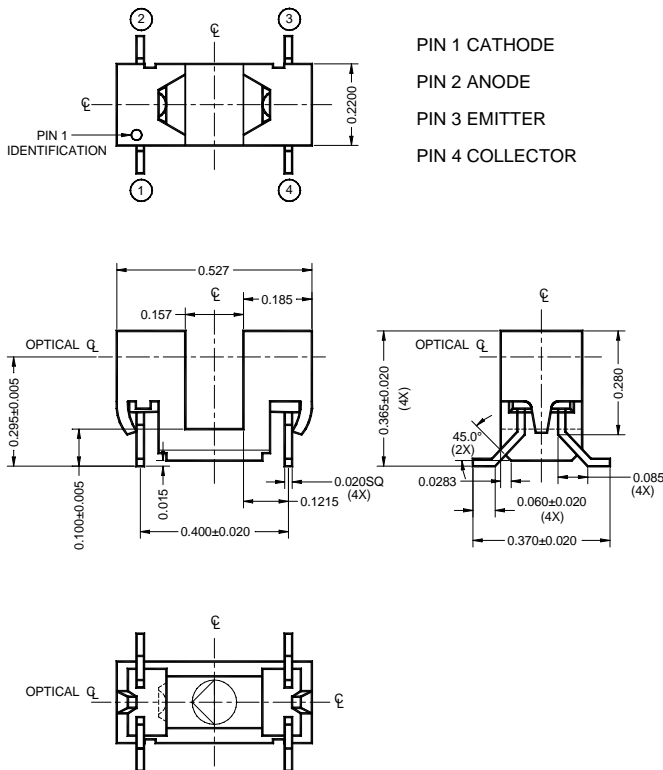
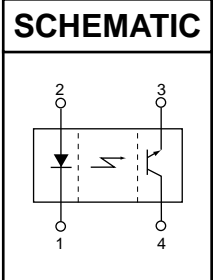


### PACKAGE DIMENSIONS



### FEATURES

- No contact switching
- 4 mm wide slot
- Leads formed for surface mounting
- Housing material resistant to high temperatures
- Daylight filter on sensor
- Transistor Output
- Tape & Reel Option: .TR (See Tape & Reel Dimensions)



### NOTES:

1. Dimensions for all drawings are in inches.
2. Tolerance of  $\pm .010$  on all non-nominal dimensions unless otherwise specified.
3. All leads are coplanar within  $.006''$ .
4. Housing material is electrically conductive.

### NOTES (Applies to Max Ratings and Characteristics Tables.)

1. Derate power dissipation linearly  $1.67 \text{ mW}/^\circ\text{C}$  above  $25^\circ\text{C}$ .
2. RMA flux is recommended.
3. Methanol or isopropyl alcohols are recommended as cleaning agents.

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

Parameter	Symbol	Rating	Units
Operating Temperature	$T_{OPR}$	-40 to +100	$^\circ\text{C}$
Storage Temperature	$T_{STG}$	-40 to +100	$^\circ\text{C}$
Soldering Temperature (Flow) <sup>(2,3)</sup>	$T_{SOL-F}$		
Preheating Stage for 60 sec		183	$^\circ\text{C}$
Reflow Stage for 5 sec		230	$^\circ\text{C}$
Rate of Temperature Rise		3 to 10	$^\circ\text{C}/\text{S}$
<b>EMITTER</b>			
Continuous Forward Current	$I_F$	50	mA
Reverse Voltage	$V_R$	5	V
Power Dissipation <sup>(1)</sup>	$P_D$	100	mW
<b>SENSOR</b>			
Collector-Emitter Voltage	$V_{CEO}$	30	V
Emitter-Collector Voltage	$V_{ECO}$	4	V
Power Dissipation <sup>(1)</sup>	$P_D$	100	mW

ELECTRICAL / OPTICAL CHARACTERISTICS (T <sub>A</sub> = 25°C)						
PARAMETER	TEST CONDITIONS	SYMBOL	MIN	TYP	MAX	UNITS
<b>EMITTER</b>						
Forward Voltage	I <sub>F</sub> = 20 mA	V <sub>F</sub>	—	—	1.7	V
Reverse Current	V <sub>R</sub> = 5 V	I <sub>R</sub>	—	—	100	μA
Peak Emission Wavelength	I <sub>F</sub> = 20 mA	λ <sub>PE</sub>	—	940	—	nm
<b>SENSOR</b>						
Collector-Emitter Breakdown	I <sub>C</sub> = 1 mA	BV <sub>CEO</sub>	30	—	—	V
Emitter-Collector Breakdown	I <sub>E</sub> = 0.1 mA	BV <sub>ECO</sub>	5	—	—	V
Dark Current	V <sub>CE</sub> = 10 V, I <sub>F</sub> = 0 mA	I <sub>D</sub>	—	—	100	nA
<b>COUPLED</b>						
Collector Current	I <sub>F</sub> = 20 mA, V <sub>CE</sub> = 5 V	I <sub>C(ON)</sub>	2.0	—	—	mA
Collector Emitter Saturation Voltage	I <sub>F</sub> = 20 mA, I <sub>C</sub> = 0.5 mA	V <sub>CE (SAT)</sub>	—	—	0.4	V
Rise Time	V <sub>CE</sub> = 5 V, R <sub>L</sub> = 100 Ω	t <sub>r</sub>	—	8	—	μs
Fall Time	I <sub>C</sub> = 5 mA	t <sub>f</sub>	—	50	—	μs

Fig. 1 Forward Voltage vs. Ambient Temperature

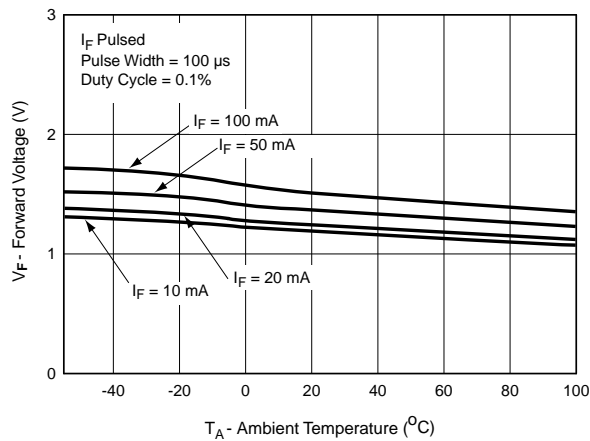


Fig. 2 Forward Current vs. Forward Voltage

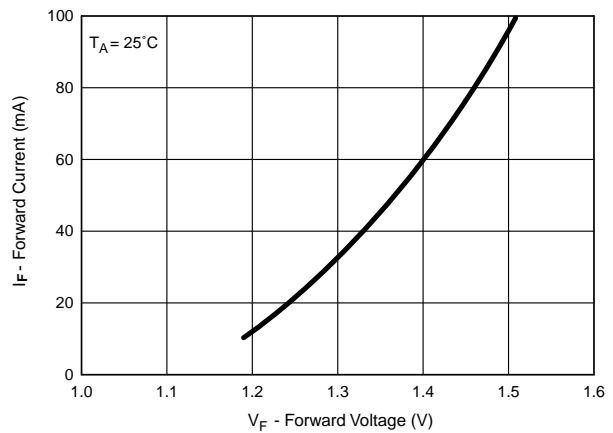


Fig. 3 Collector Emitter Dark Current (Normalized) vs. Ambient Temperature

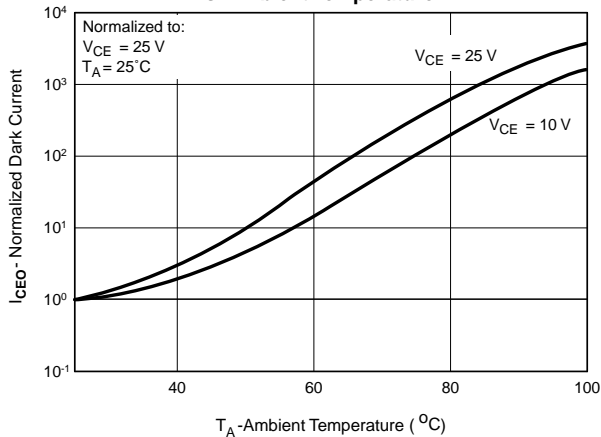
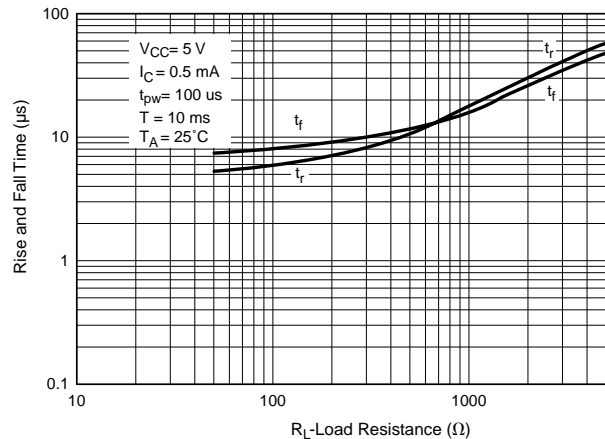
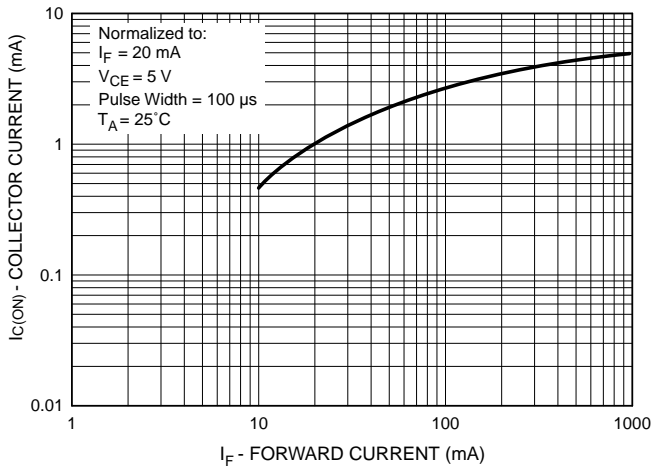


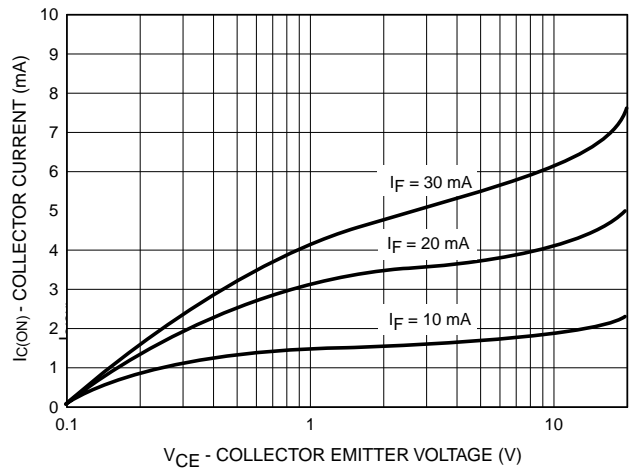
Fig. 4 Rise and Fall Time vs. Load Resistance



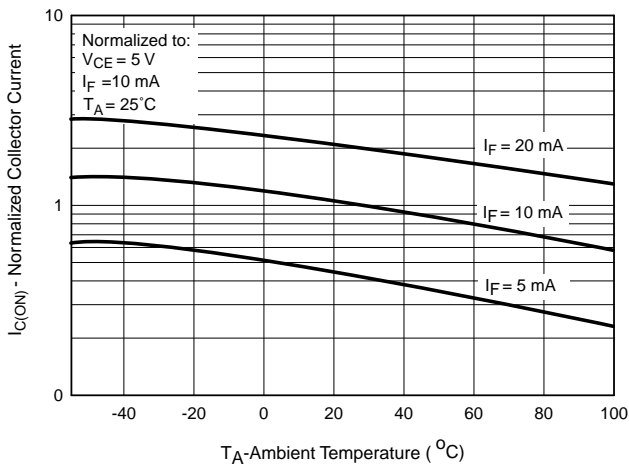
**Fig. 5 Collector Current vs. Forward Current**



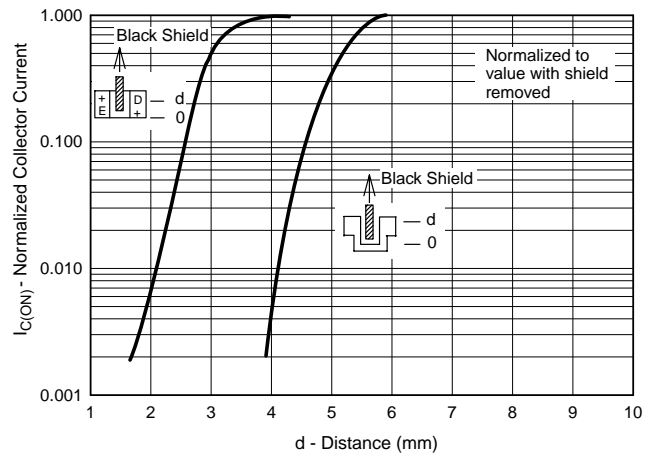
**Fig. 6 Collector Current vs. Collector Emitter Voltage**



**Fig. 7 Collector Current vs. Ambient Temperature**

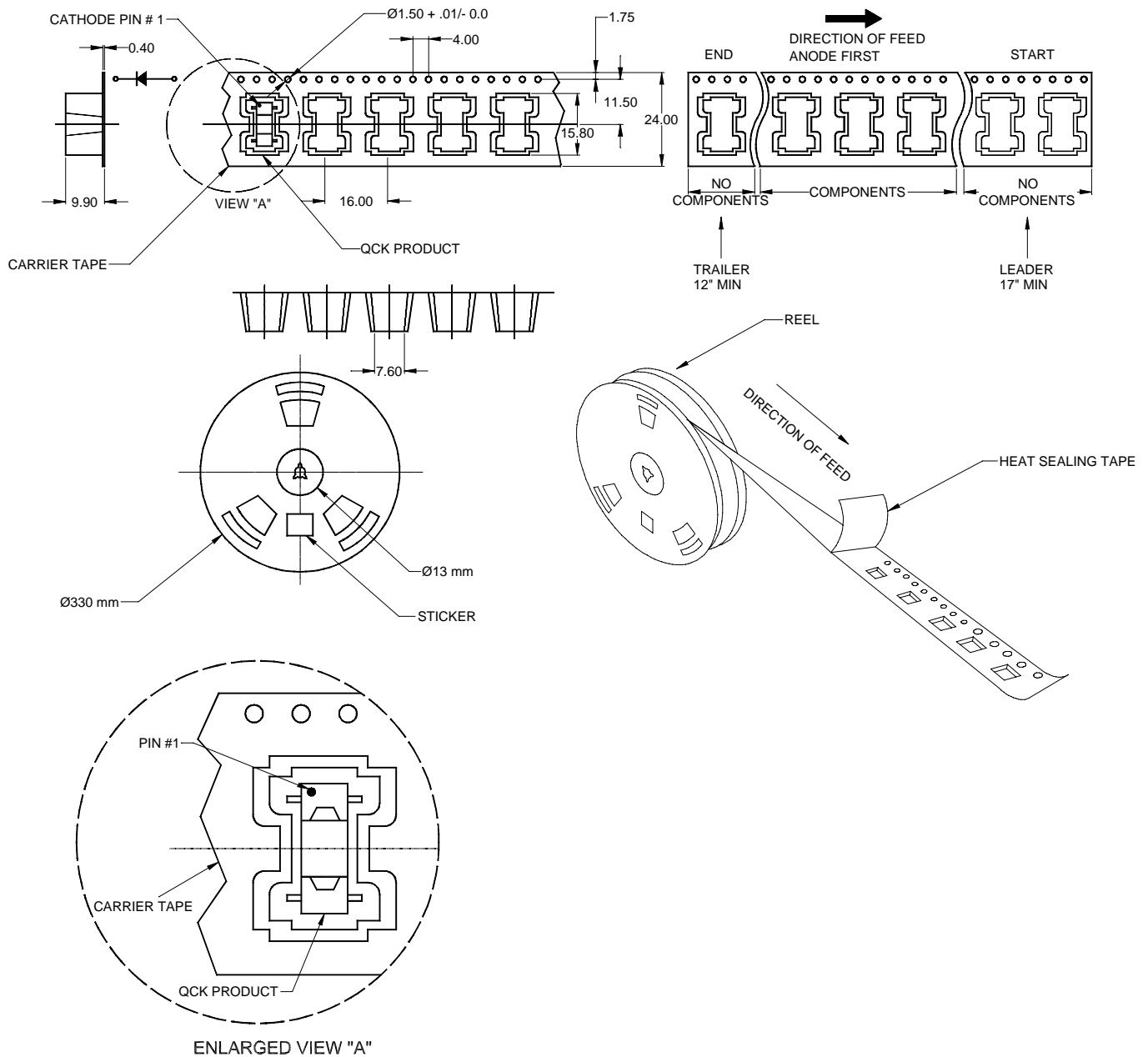


**Fig. 8 Collector Current vs. Shield Distance**



**Fig. 9 Power Dissipation vs. Ambient Temperature (TBD)**

### TAPE & REEL DIMENSIONS



**NOTES:**

1. QUANTITY PER REEL: 300 UNITS.
2. CARRIER TAPE MATERIAL: HIGH IMPACT POLYSTERINE (CONDUCTIVE BLACK).
3. REEL MATERIAL: HIGH IMPACT STYRENIC ALLOY.
4. TAPE PLACED ON TOP OF UNIT TO AID PICK AND PLACE MACHINE.
5. ALL DIMENSIONS ARE IN MILLIMETERS (UNLESS OTHERWISE SPECIFIED).

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