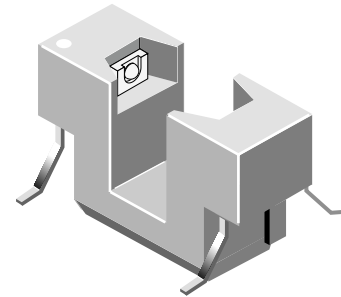
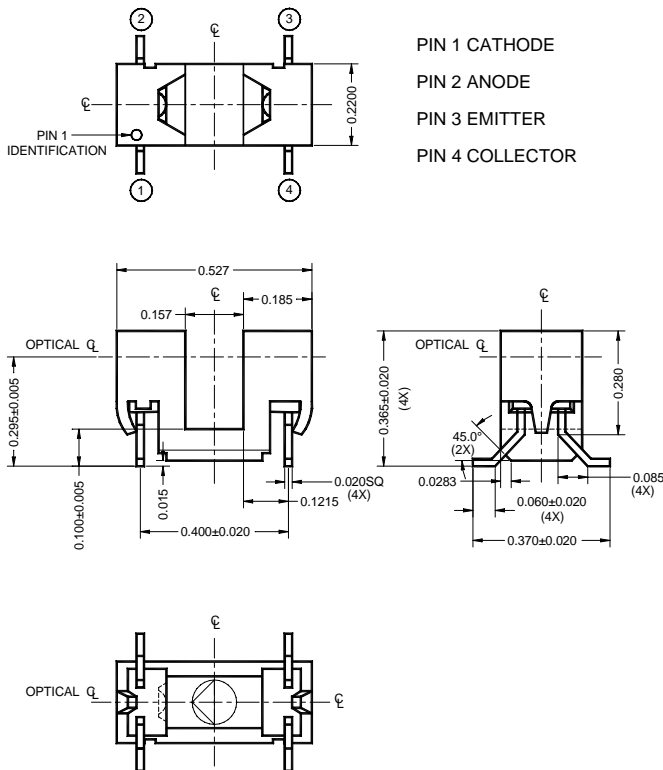
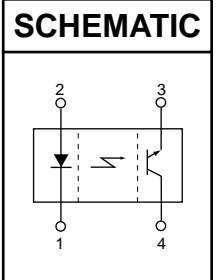


### PACKAGE DIMENSIONS



### 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 ( $T_A = 25^\circ\text{C}$ )						
PARAMETER	TEST CONDITIONS	SYMBOL	MIN	TYP	MAX	UNITS
<b>EMITTER</b>						
Forward Voltage	$I_F = 20 \text{ mA}$	$V_F$	—	—	1.7	V
Reverse Current	$V_R = 5 \text{ V}$	$I_R$	—	—	100	$\mu\text{A}$
Peak Emission Wavelength	$I_F = 20 \text{ mA}$	$\lambda_{PE}$	—	940	—	nm
<b>SENSOR</b>						
Collector-Emitter Breakdown	$I_C = 1 \text{ mA}$	$BV_{CEO}$	30	—	—	V
Emitter-Collector Breakdown	$I_E = 0.1 \text{ mA}$	$BV_{ECO}$	5	—	—	V
Dark Current	$V_{CE} = 10 \text{ V}, I_F = 0 \text{ mA}$	$I_D$	—	—	100	nA
<b>COUPLED</b>						
Collector Current	$I_F = 20 \text{ mA}, V_{CE} = 5 \text{ V}$	$I_{C(ON)}$	2.0	—	—	mA
Collector Emitter Saturation Voltage	$I_F = 20 \text{ mA}, I_C = 0.5 \text{ mA}$	$V_{CE(SAT)}$	—	—	0.4	V
Rise Time	$V_{CE} = 5 \text{ V}, R_L = 100 \Omega$	$t_r$	—	8	—	$\mu\text{s}$
Fall Time	$I_C = 5 \text{ mA}$	$t_f$	—	50	—	$\mu\text{s}$

Fig. 1 Forward Voltage vs. Ambient Temperature

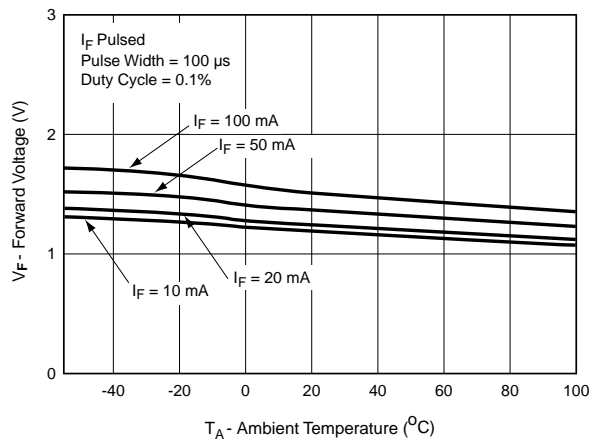


Fig. 2 Forward Current vs. Forward Voltage

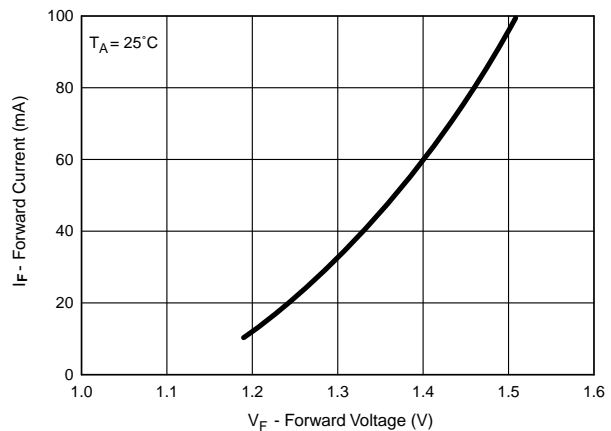


Fig. 3 Collector Emitter Dark Current (Normalized) vs. Ambient Temperature

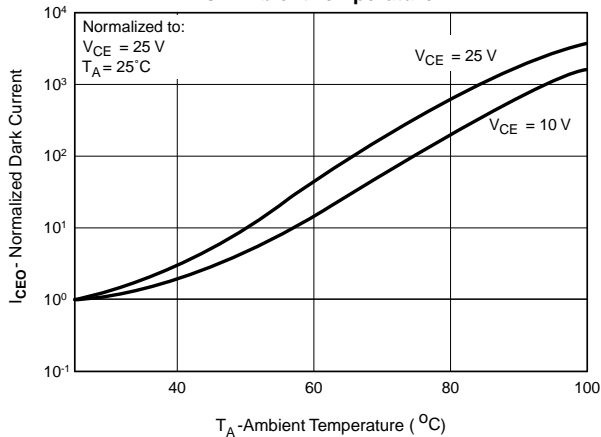
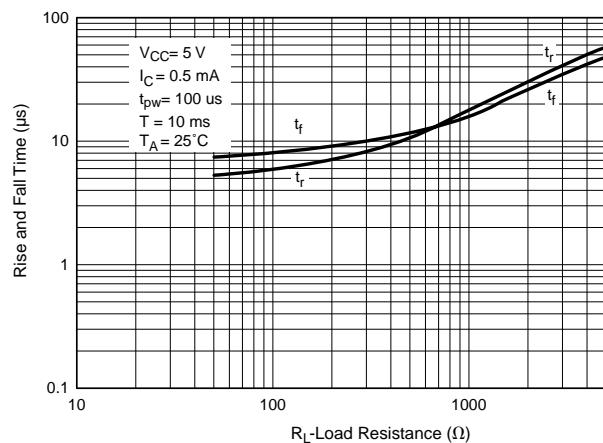
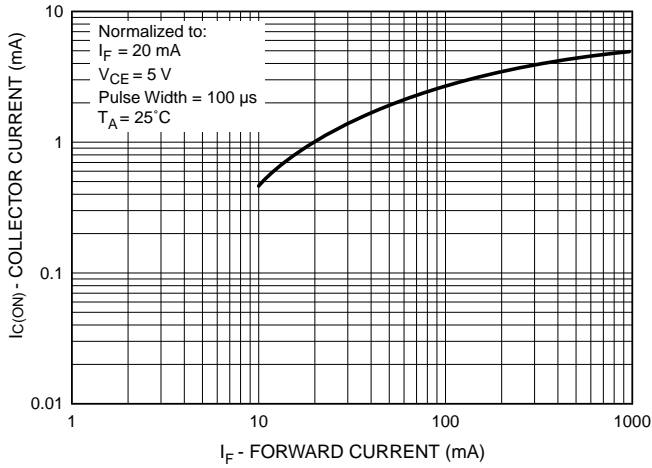


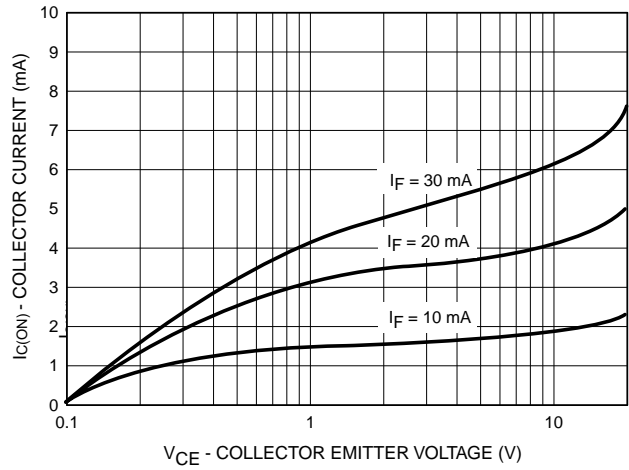
Fig. 4 Rise and Fall Time vs. Load Resistance



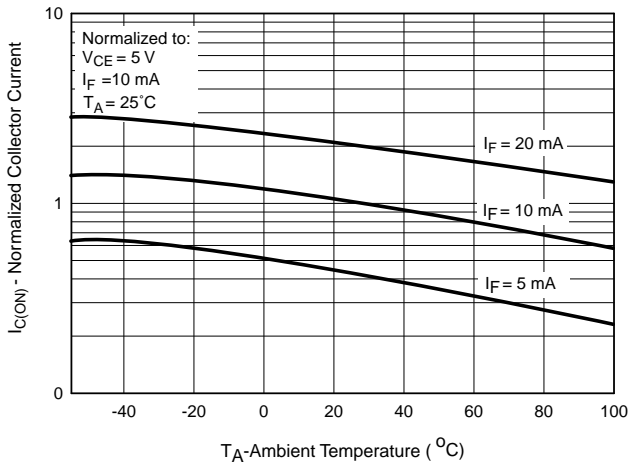
**Fig. 5 Collector Current vs. Forward Current**



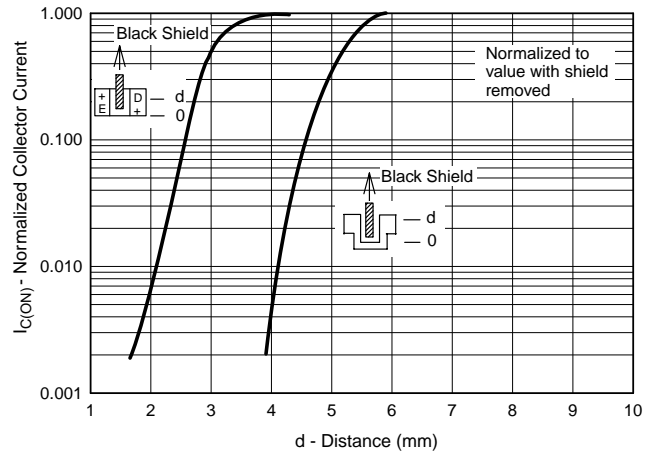
**Fig. 6 Collector Current vs. Collector Emitter Voltage**



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

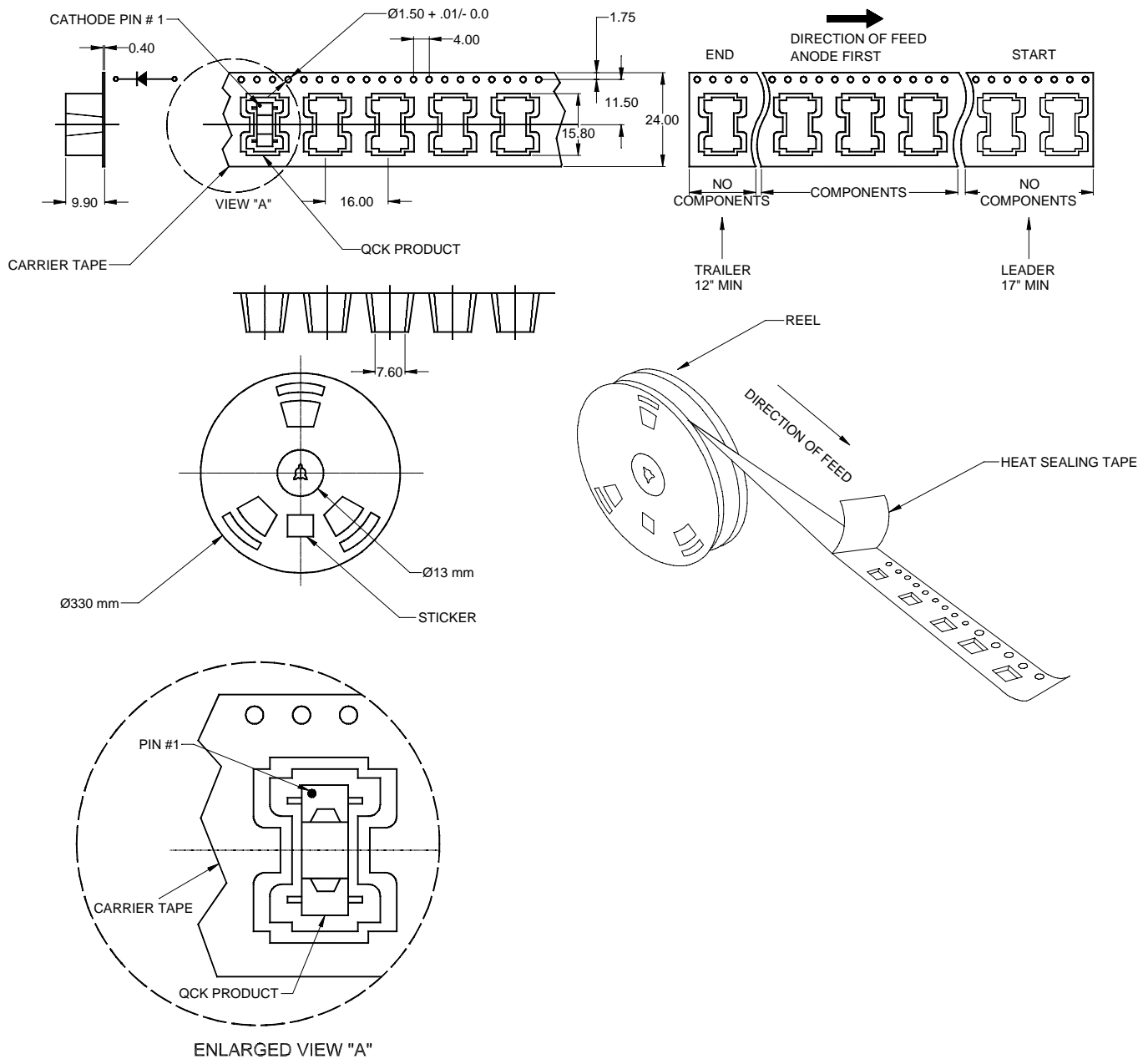


**Fig. 8 Collector Current vs. Shield Distance**



**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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