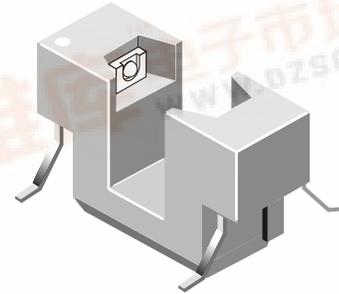
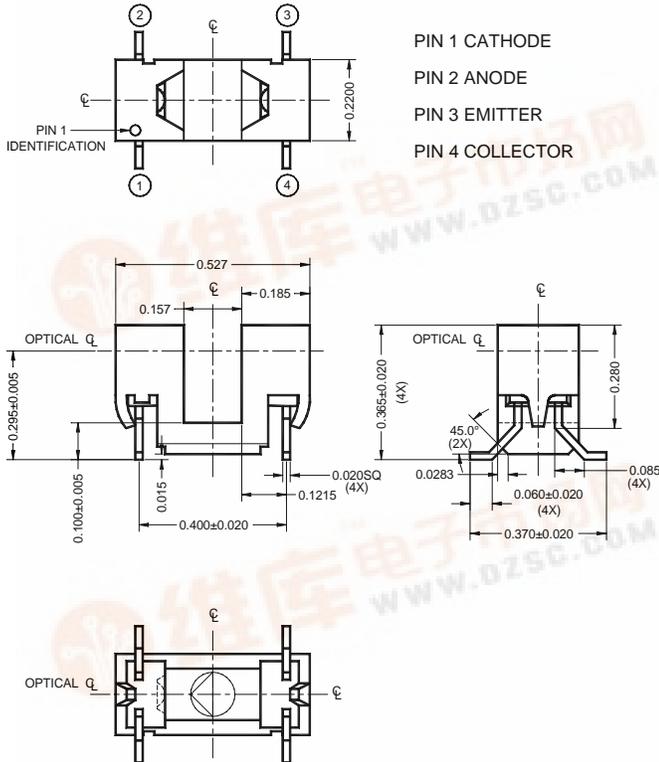


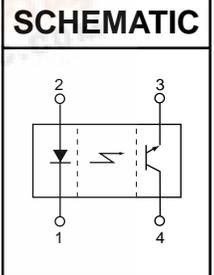
QCK5 PHOTOTRANSISTOR OPTICAL INTERRUPTER SWITCH

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°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) ^(2,3)	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	$^\circ\text{C}/\text{S}$
EMITTER			
Continuous Forward Current	I_F	50	mA
Reverse Voltage	V_R	5	V
Power Dissipation ⁽¹⁾	P_D	100	mW
SENSOR			
Collector-Emitter Voltage	V_{CEO}	30	V
Emitter-Collector Voltage	V_{ECO}	4	V
Power Dissipation ⁽¹⁾	P_D	100	mW

ELECTRICAL / OPTICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$)						
PARAMETER	TEST CONDITIONS	SYMBOL	MIN	TYP	MAX	UNITS
EMITTER						
Forward Voltage	$I_F = 20\text{ mA}$	V_F	—	—	1.7	V
Reverse Current	$V_R = 5\text{ V}$	I_R	—	—	100	μA
Peak Emission Wavelength	$I_F = 20\text{ mA}$	λ_{PE}	—	940	—	nm
SENSOR						
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
COUPLED						
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	—	μs
Fall Time	$I_C = 5\text{ mA}$	t_f	—	50	—	μs

Fig. 1 Forward Voltage vs. Ambient Temperature

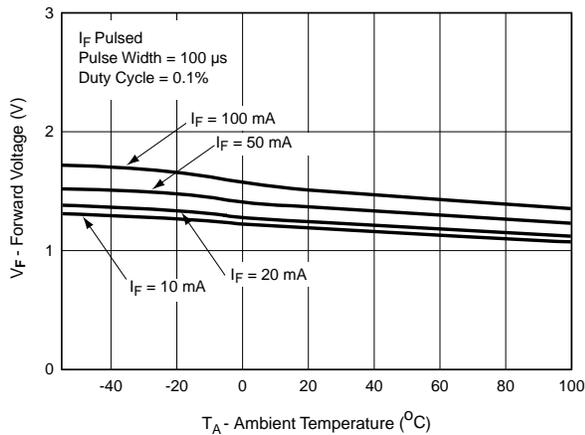


Fig. 2 Forward Current vs. Forward Voltage

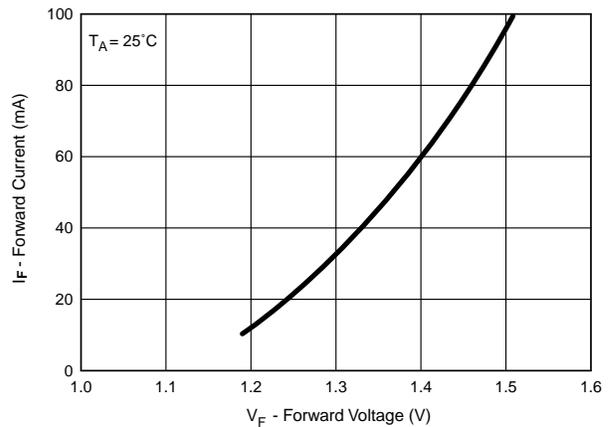


Fig. 3 Collector Emitter Dark Current (Normalized) vs. Ambient Temperature

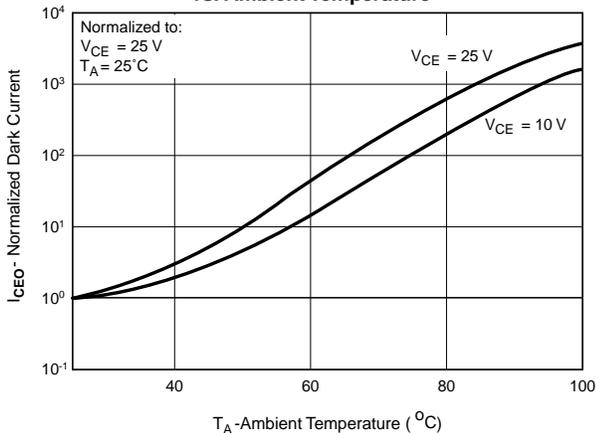


Fig. 4 Rise and Fall Time vs. Load Resistance

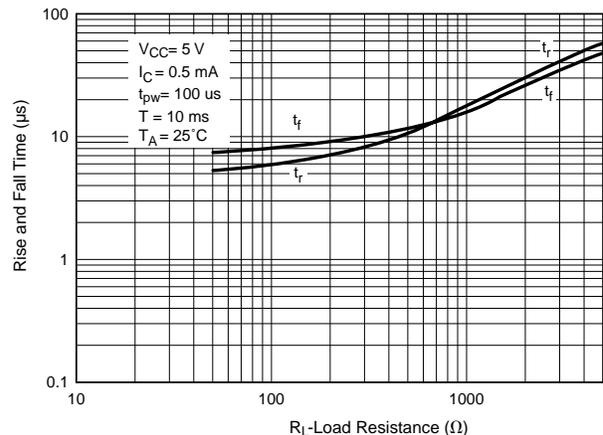


Fig. 5 Collector Current vs. Forward Current

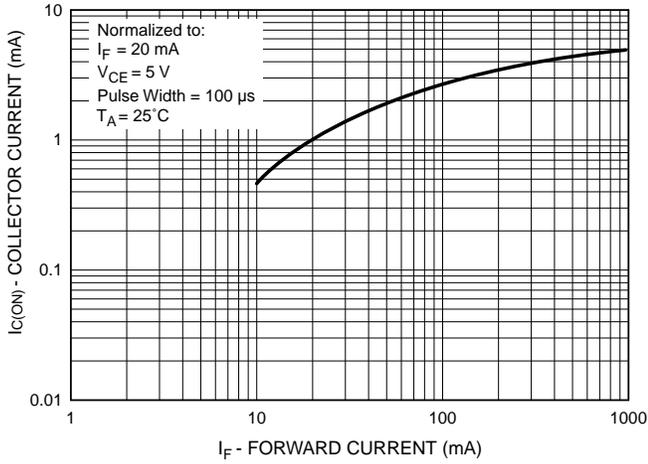


Fig. 6 Collector Current vs. Collector Emitter Voltage

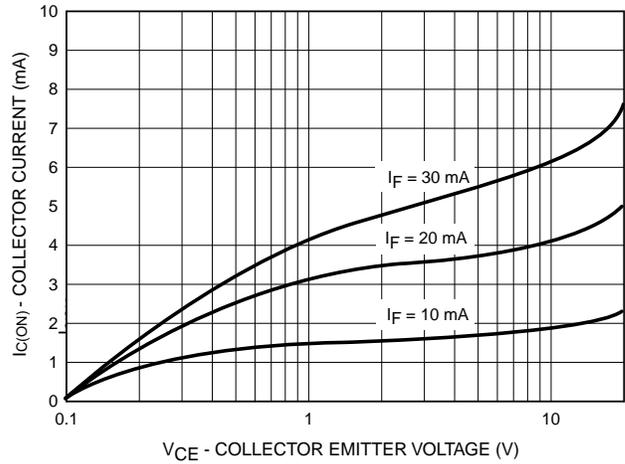


Fig. 7 Collector Current vs. Ambient Temperature

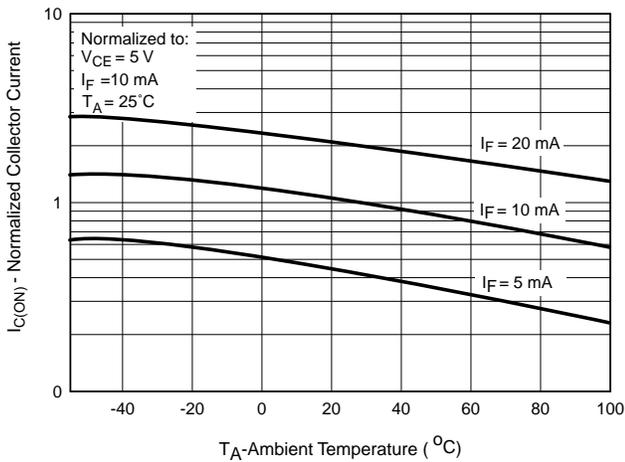


Fig. 8 Collector Current vs. Shield Distance

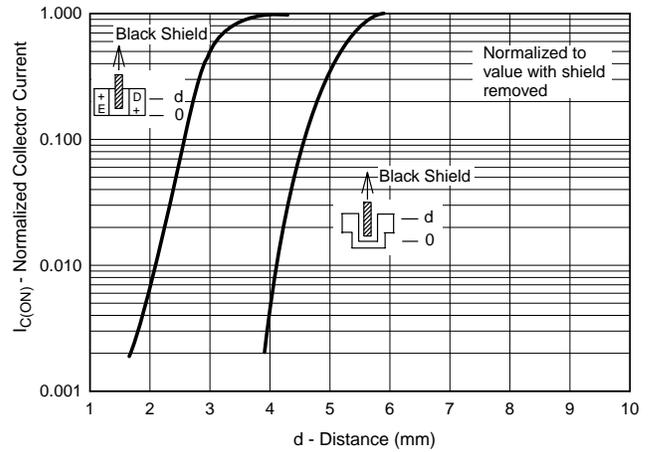
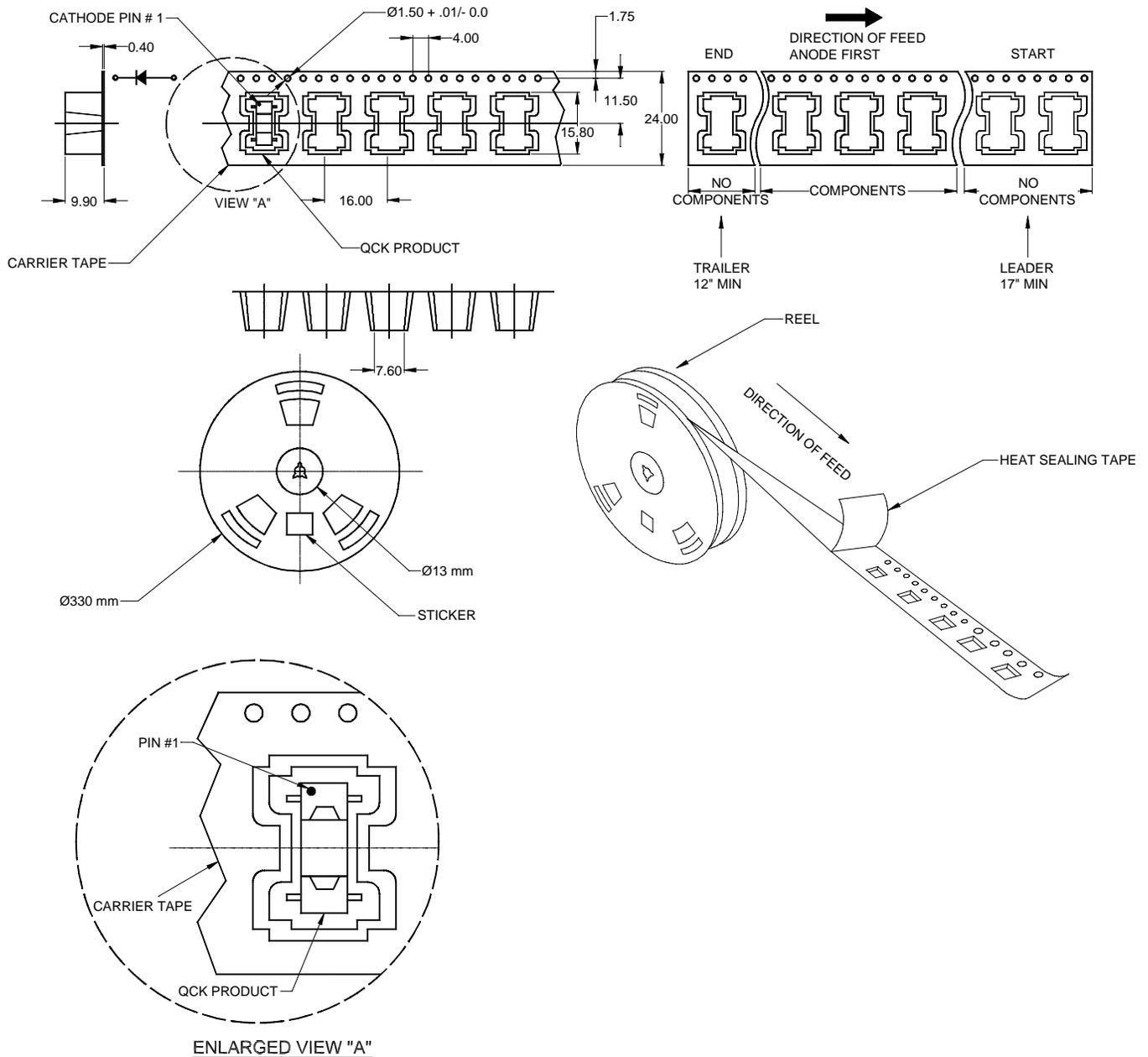


Fig. 9 Power Dissipation vs. Ambient Temperature (TBD)

TAPE & REEL DIMENSIONS



NOTES:

1. QUANTITY PER REEL: 300 UNITS.
2. CARRIER TAPE MATERIAL: HIGH IMPACT POLYESTERINE (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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