



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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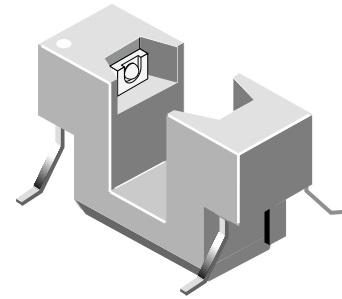
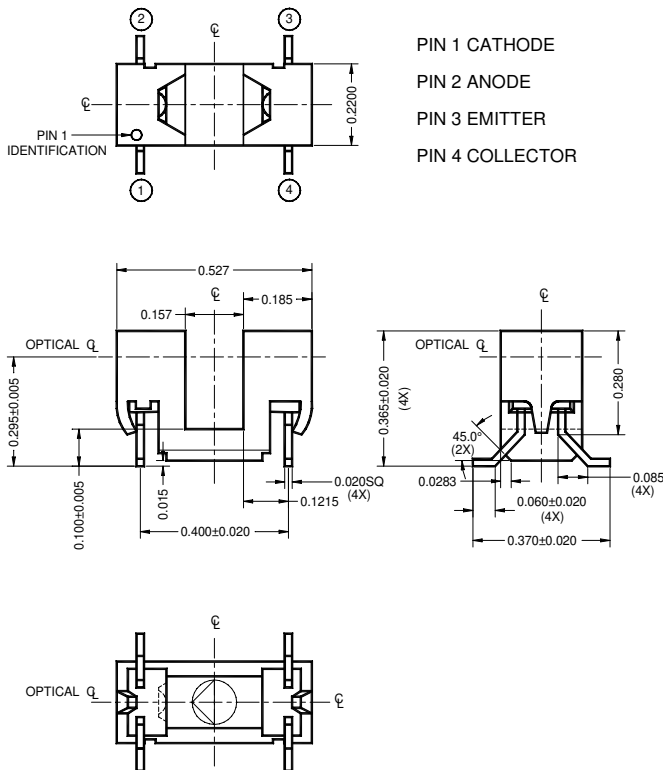
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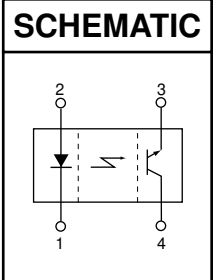


### PACKAGE DIMENSIONS



### 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.)

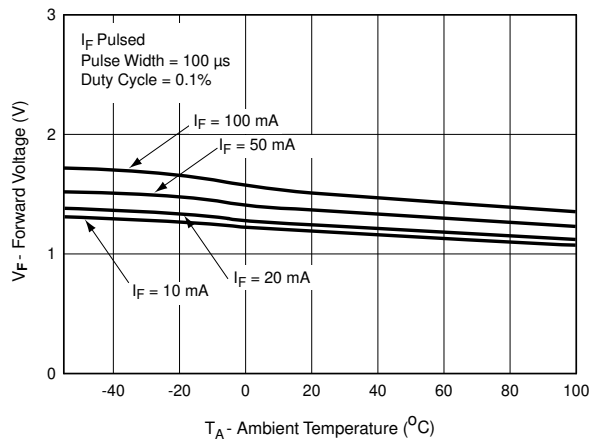
1. Derate power dissipation linearly 1.67 mW/°C above 25°C.
2. RMA flux is recommended.
3. Methanol or isopropyl alcohols are recommended as cleaning agents.

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

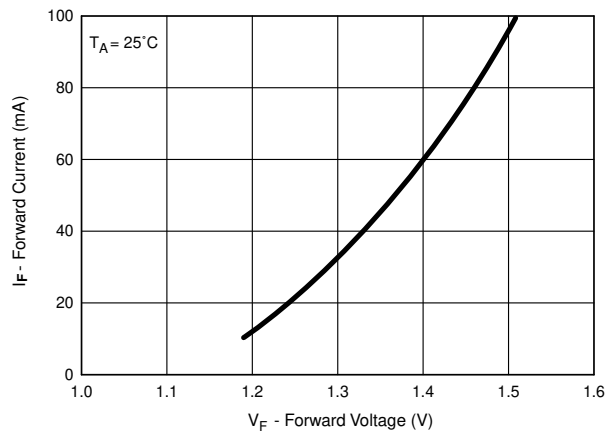
Parameter	Symbol	Rating	Units
Operating Temperature	$T_{OPR}$	-40 to +100	°C
Storage Temperature	$T_{STG}$	-40 to +100	°C
Soldering Temperature (Flow) <sup>(2,3)</sup>	$T_{SOL-F}$		
Preheating Stage for 60 sec		183	°C
Reflow Stage for 5 sec		230	°C
Rate of Temperature Rise		3 to 10	°C/S
<b>EMITTER</b>			
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	—	$\mu\text{s}$

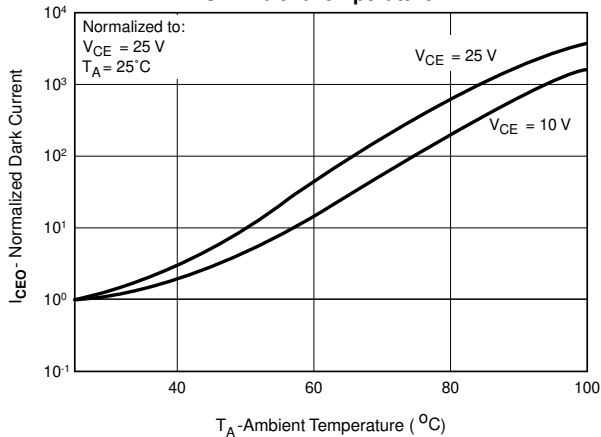
**Fig. 1 Forward Voltage vs. Ambient Temperature**



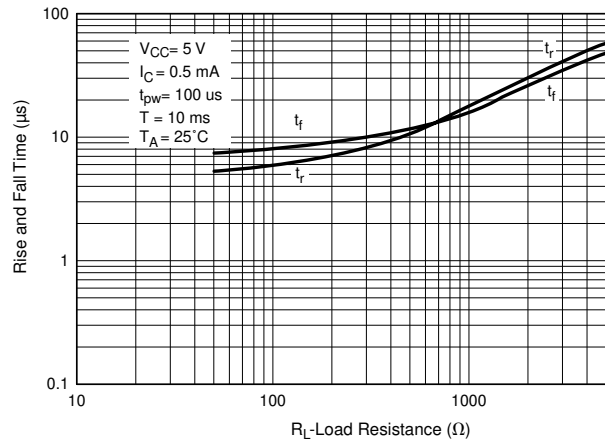
**Fig. 2 Forward Current vs. Forward Voltage**



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

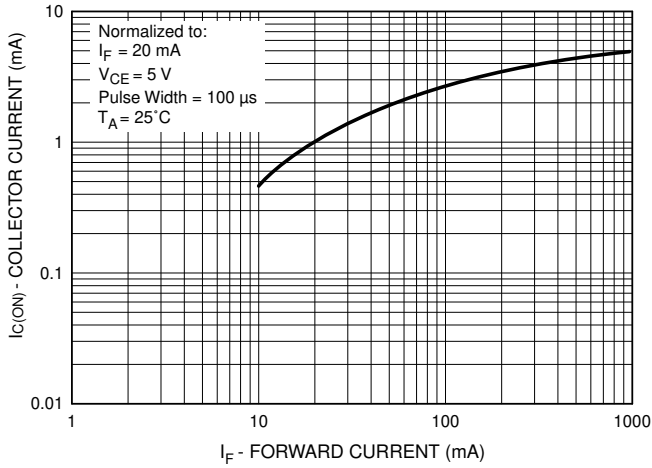


**Fig. 4 Rise and Fall Time vs. Load Resistance**

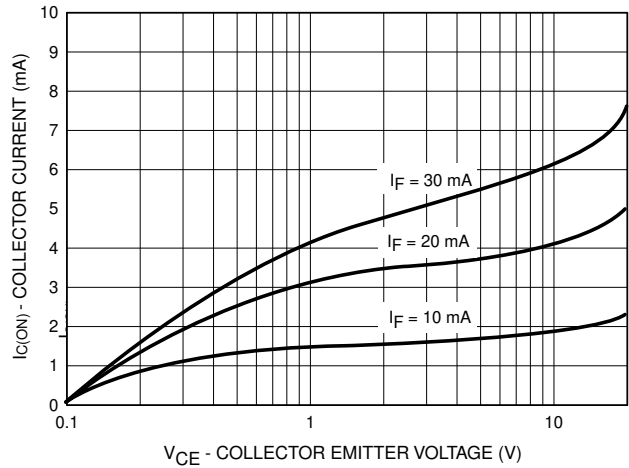




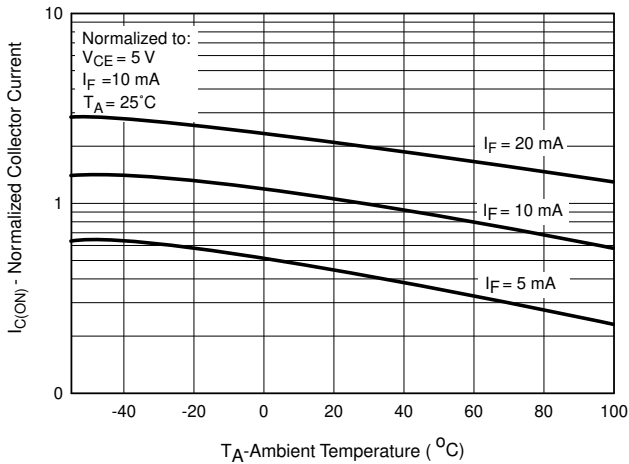
**Fig. 5 Collector Current vs. Forward Current**



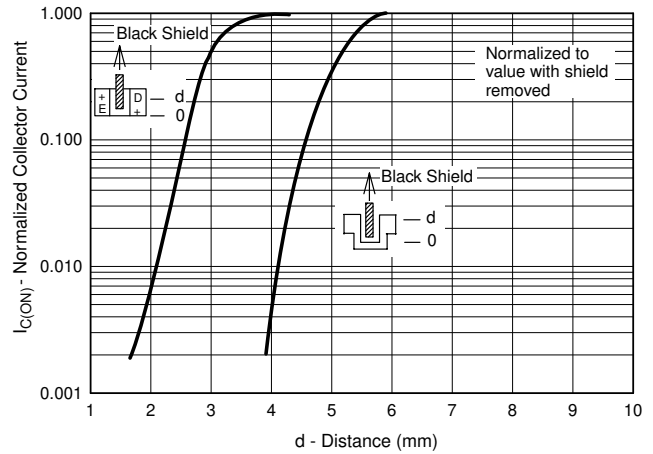
**Fig. 6 Collector Current vs. Collector Emitter Voltage**



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

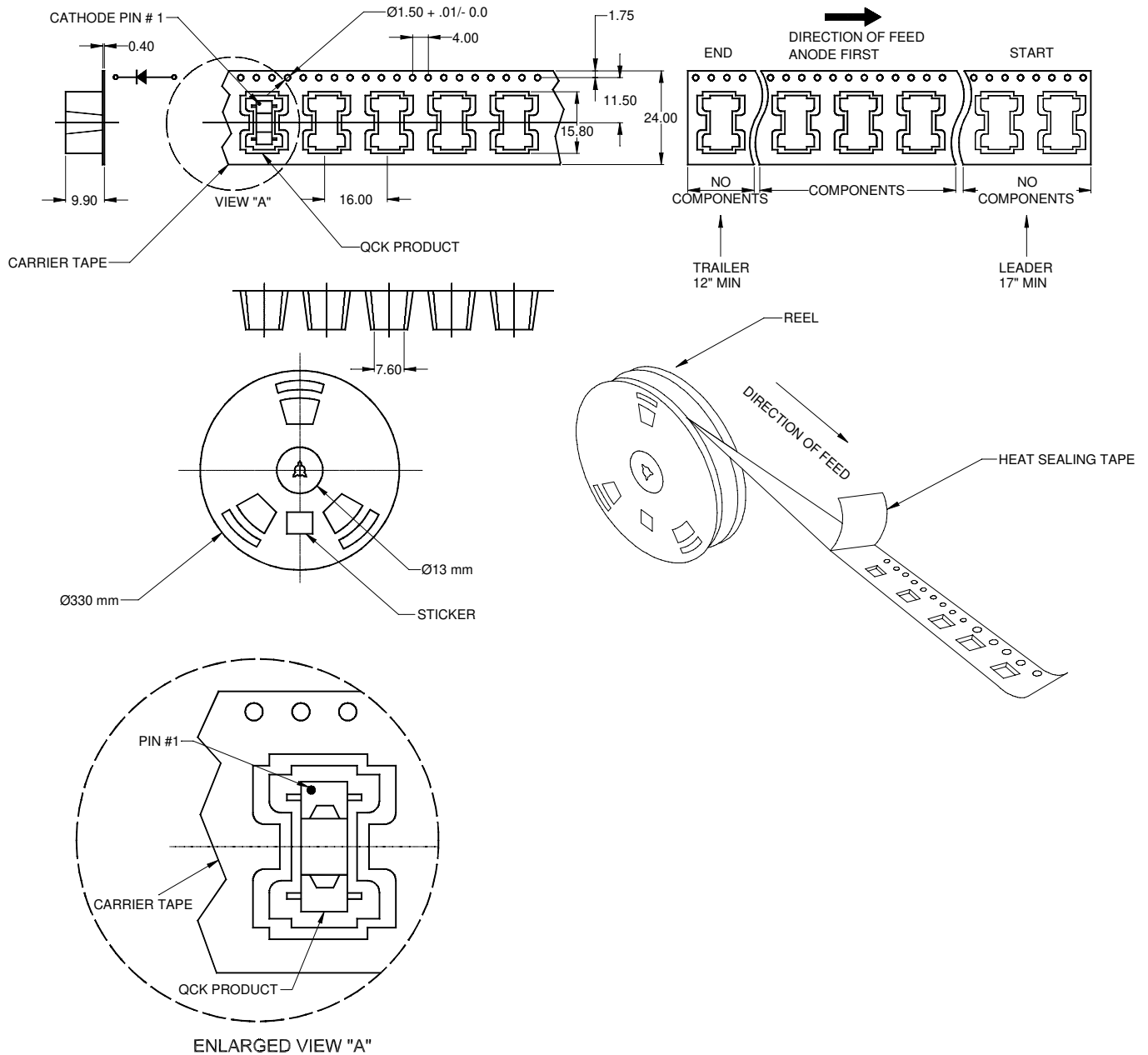


**Fig. 8 Collector Current vs. Shield Distance**



**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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