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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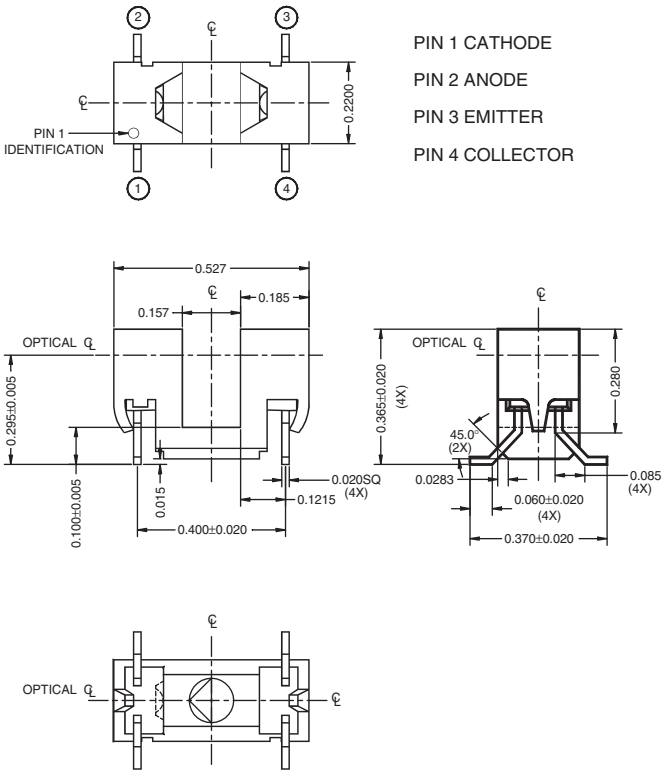
PHOTODARLINGTON OPTICAL INTERRUPTER SWITCH

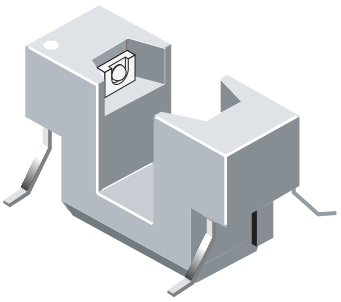
QCK3 QCK4

PACKAGE DIMENSIONS

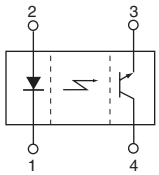


NOTES:

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



SCHEMATIC



DESCRIPTION

The QCK3/QCK4 is a slotted opticalswitch designed for surface mount applications where extreme temperatures are experienced during solder reflow. The switch consists of a GaAs LED and a silicon photodarlington facing each other across a.157" (4.0 mm) gap. The leads are formed to sit flush on a PCB during solder reflow.

FEATURES

- Unique single piece housing designed to reduce cost.
- High temperature housing material to withstand extreme temperature.
- Shipped in plastic tubes for protection of leads and to feed automatic placement equipment.
- Sensor package is infrared transparent and tinted to attenuate visible light.

PHOTODARLINGTON OPTICAL INTERRUPTER SWITCH

QCK3 QCK4

ABSOLUTE MAXIMUM RATINGS (T_A = 25°C unless otherwise specified)			
Parameter	**Symbol**	**Rating**	**Units**
Operating Temperature	T_{OPR}	-55 to +100	°C
Storage Temperature	T_{STG}	-40 to +85	°C
Soldering Temperature (Flow)	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
EMITTER			
Continuous Forward Current	I_F	50	mA
Reverse Voltage	V_R	6	V
Power Dissipation(1)	P_D	100	mW
SENSOR			
Collector-Emitter Voltage	V_{CEO}	30	V
Emitter-Collector Voltage	V_{ECO}	6	V
Collector Current	I_C	40	mA
Power Dissipation(1)	P_D	150	mW

NOTE:
1. Derate power dissipation linearly 1.33 mW/°C above 25°C.

PARAMETER	**DEVICES**	**TEST CONDITIONS**	**SYMBOL**	**MIN**	**TYP**	**MAX**	**UNITS**
EMITTER							
Forward Voltage		I_F = 20 mA	V_F	—	—	1.4	V
Reverse Current		V_R = 2 V	I_R	—	—	100	µA
SENSOR							
Collector-Emitter Breakdown		I_C = 1 mA, E_e = 0	BV_{CEO}	30	—	—	V
Collector-Emitter Leakage		V_{CE} = 5.25 V, E_e = 0	I_{CEO}	—	—	30	µA
COUPLED							
On-State Collector Current	QCK3	I_F = 5.0 mA, V_{CE} = 5 V	$I_{C(ON)}$	1.0	—	—	mA
	QCK4			3.0		15.0	
Saturation Voltage		I_F = 5 mA, I_C = 5.0 mA	$V_{CE\ (SAT)}$	—	—	1.0	V

FAIRCHILD
SEMICONDUCTOR®

PHOTODARLINGTON OPTICAL INTERRUPTER SWITCH

QCK3 QCK4

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