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PIT5005T-02

Phototransistor Optical Interrupter Switch

Features

- No Contact Sensing
- 5mm gap
- 0.5mm aperture
- Locating Pins
- PCB mount
- RoHS compliance

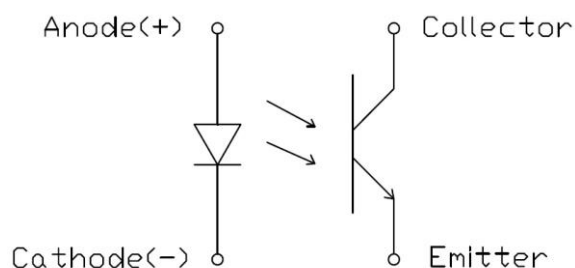
Description

The PIT5005T-02 consists of an infrared light emitting diode coupled to a NPN silicon phototransistor packaged into an injection molded housing. The housing is designed for wide-gap non-contact sensing.

Package Outline



Schematic



**Phototransister Opitcal Interrupter Switch****Absolute Maximum Rating at 25°C**

Symbol	Parameters	Ratings	Units
T _{OPR}	Operating Temperature	-40 ~ +100	°C
T _{STG}	Storage Temperature	-55 ~ +100	°C
T _{SOL-I}	Soldering Temperature (Solder Iron) ^(2,3,4,5)	240 ~ 5 Sec	°C
T _{SOL-F}	Soldering Temperature (Solder Flow) ^(2,3,4,5)	260 ~ 10 Sec	°C
Emitter			
I _F	Continuous Forward Current	60	mA
V _R	Reverse Voltage	6	V
P _D	Power Dissipation ⁽¹⁾	150	mW
Detector			
V _{CEO}	Collector-Emitter Voltage	30	V
V _{ECO}	Emitter-Collector Voltage	4.5	V
I _C	Collector Current	20	mA
P _D	Power Dissipation ⁽¹⁾	100	mW

Notes:

- 1 : Derate power dissipation linearly, on each component, 1.67 mW/°C above 25°C.
- 2 : RMA Flux is recommended.
- 3 : Methanol or isopropyl alcohols are recommended as cleaning agents.
- 4 : Soldering iron tip 1.6mm from housing.
- 5 : As long as leads are not under stress or spring tension

**Phototransistor Optitcal Interrupter Switch**www.ct-micro.com**Electro-Optical Characteristics** *TA = 25°C (unless otherwise specified)*

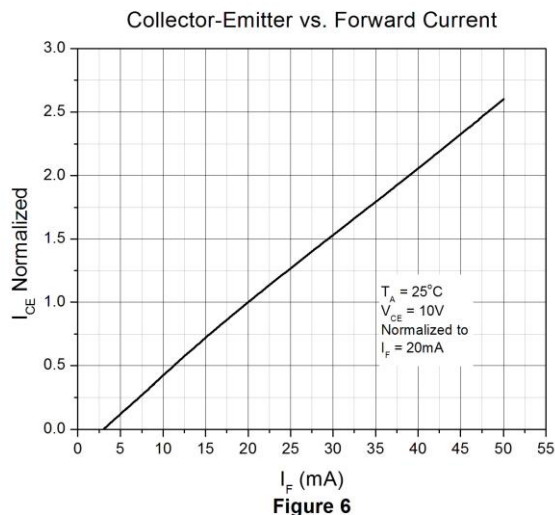
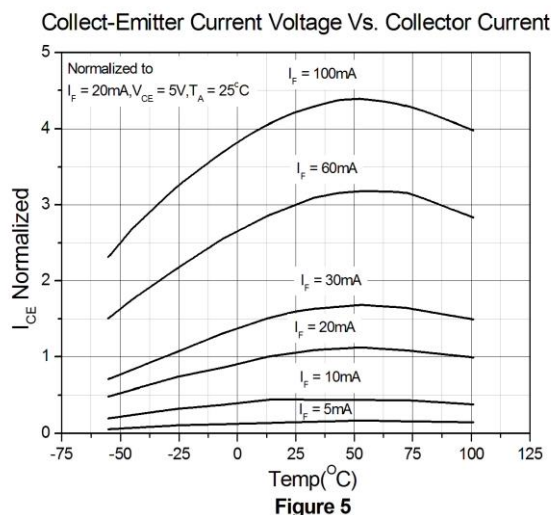
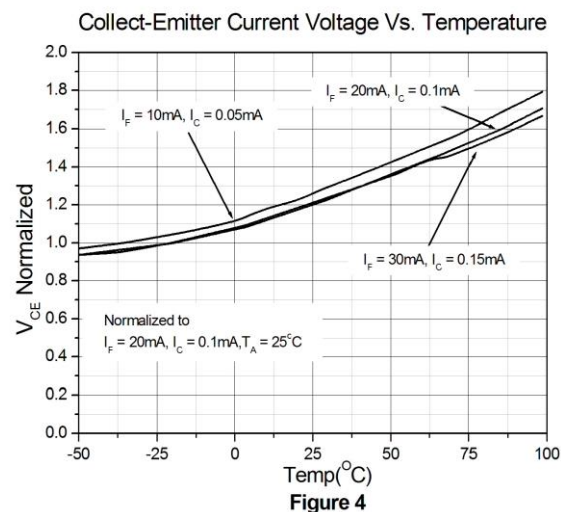
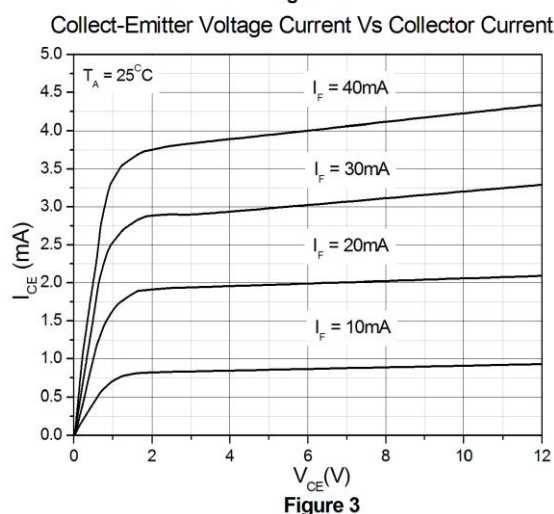
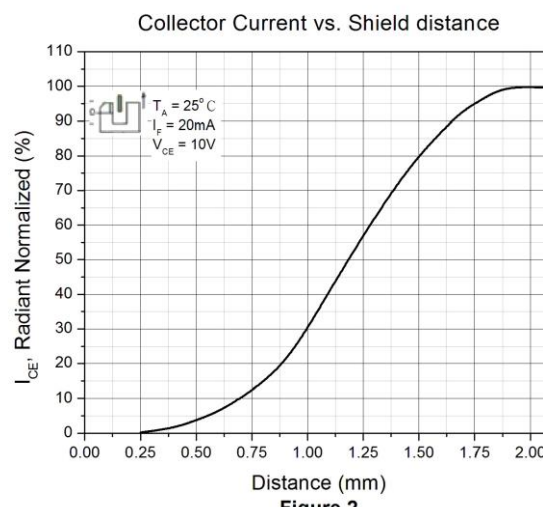
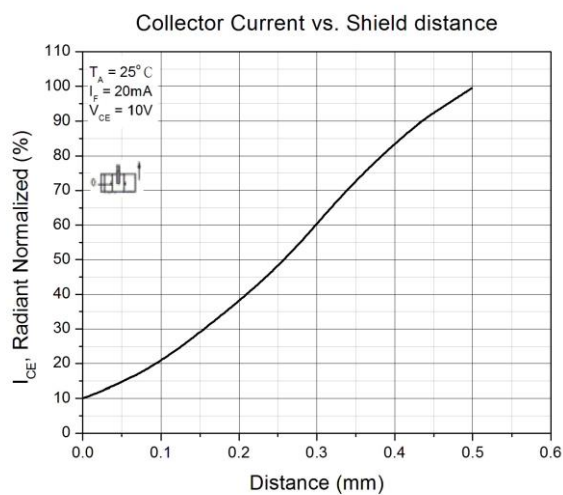
Symbol	Parameters	Test Conditions	Min	Typ	Max	Units
Emitter						
V _F	Forward Voltage	I _F =20mA	-	1.2	1.5	V
I _R	Reverse Current	V _R =4V	-	-	10	μA
λ _P	Peak Emissions Wavelength	I _F =20mA	-	940	-	nm
Detector						
I _D	Dark Current	V _{CE} =10V ; I _F =0mA	-	-	200	nA
Coupled						
I _{C(ON)}	Collector Current	I _F =20mA; V _{CE} =10V	0.5	-	14	mA
V _{CE(SAT)}	Collector - Emitter Saturation Voltage	I _F =20mA; I _C =0.1mA	-	-	0.4	V
Tr	Rise Time	V _{CC} =5V; R _L =100Ω; I _C =5mA	-	4	-	μs
Tf	Fall Time		-	4	-	μs



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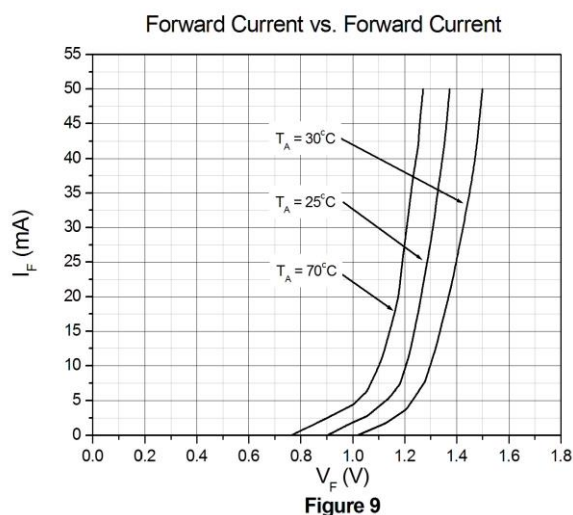
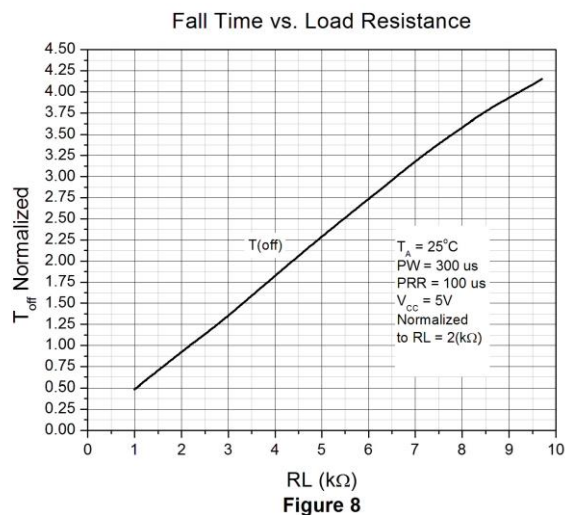
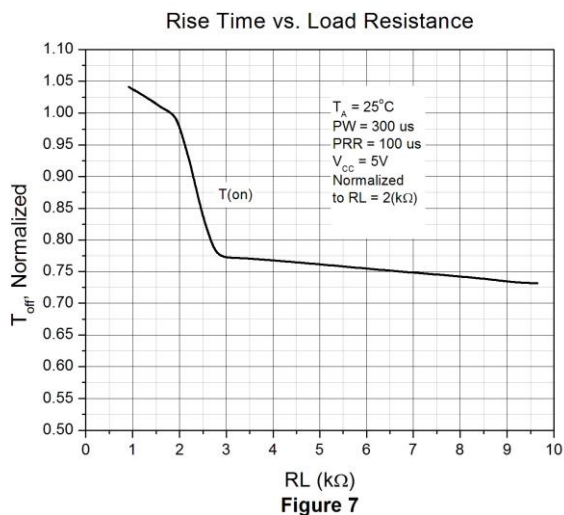
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Typical Characteristic Curves



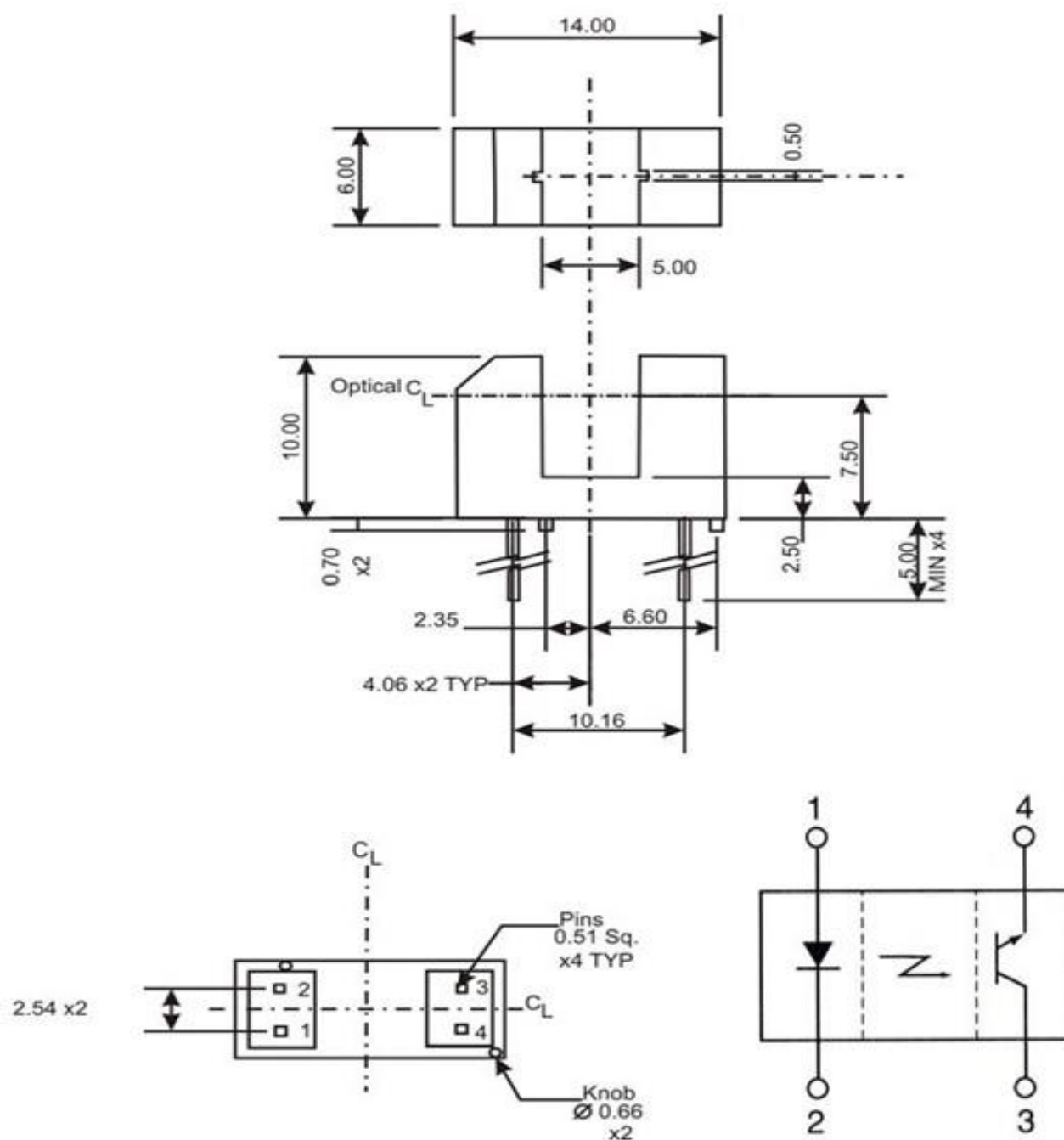


Typical Characteristic Curves





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1 : Dimensions for all drawings are in millimeters (inches).

2 : Tolerance of +/- 0.25mm on all non nominal dimensions unless otherwise specified



Label Form Specification

MADE IN CHINA

Part no.: XXXXXXXXX
Serial no.: XX000XX
Lot no.: XXXXXXXXX
Q'ty: XXXX pcs
Date Code: 20XXXXX

Bin Code: X

RoHS
Pb

Part no: CTM Production Number
Serial no: Production Number
Lot no: Lot number
Q'ty: Packing Quantity
Date Code: Manufacture Date
Bin Code: Ic Ranks
MADE IN CHINA: Production Place

Storage Condition

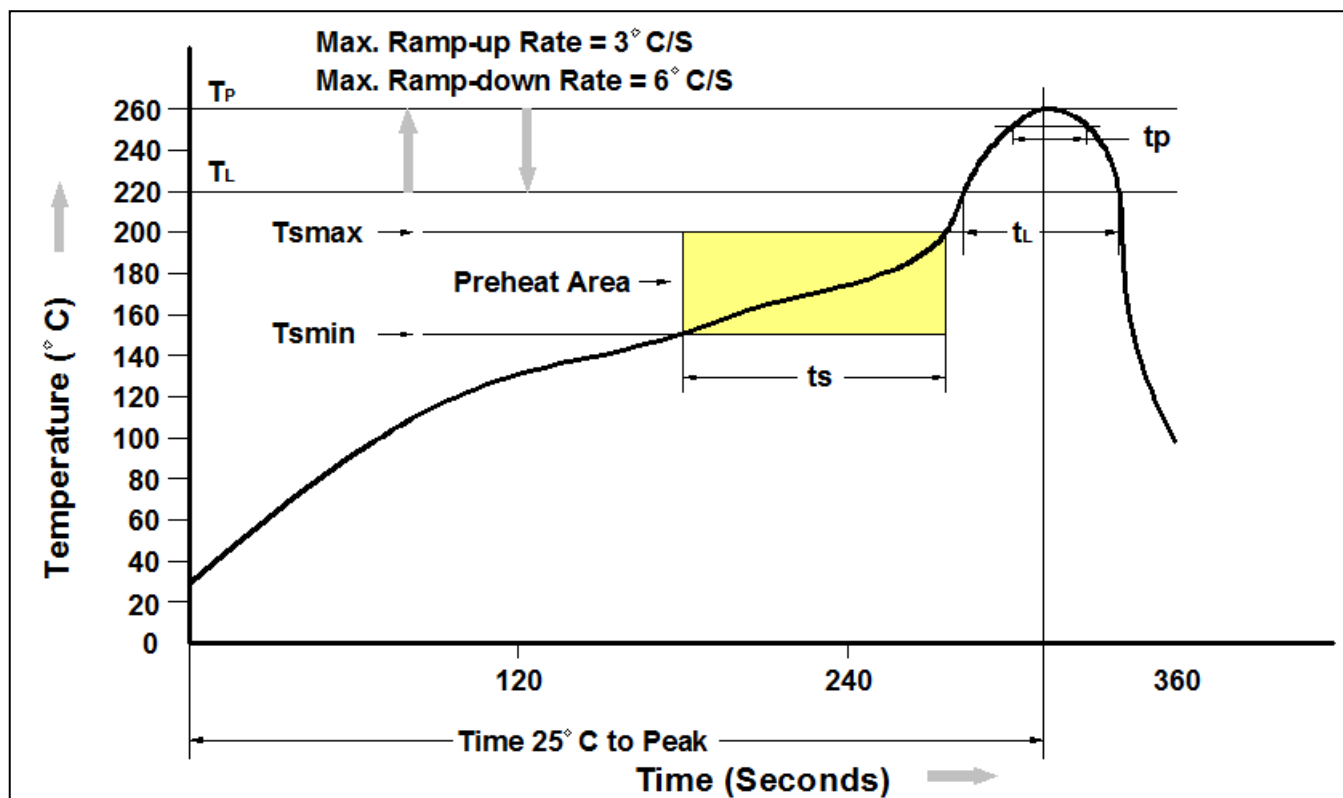
1. Do not open moisture proof bag before the products are ready to use.
2. The moisture barrier bag should be stored at 40°C and 90%R.H. max. before opening.
Shelf life of non-opened bag is 12 months after the bag sealing date.
3. After opening the moisture barrier bag floor life is 72h at 30°C/60%RH. max. Unused LEDs should be resealed into moisture barrier bag. (Refer to J-STD-020 Standard)
4. If the moisture absorbent material has faded away or the LEDs have exceeded the storage time, baking treatment should be performed using the J-STD-033 Standard conditions.



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Reflow Profile



Profile Feature	Pb-Free Assembly Profile
Temperature Min. (Tsmin)	150°C
Temperature Max. (Tsmax)	200°C
Time (ts) from (Tsmin to Tsmax)	60-120 seconds
Ramp-up Rate (tL to tP)	3°C/second max.
Liquidous Temperature (TL)	217°C
Time (tL) Maintained Above (TL)	60 – 150 seconds
Peak Body Package Temperature	260°C +0°C / -5°C
Time (tP) within 5°C of 260°C	30 seconds
Ramp-down Rate (TP to TL)	6°C/second max
Time 25°C to Peak Temperature	8 minutes max.



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