



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!



## Contact us

Tel: +86-755-8981 8866 Fax: +86-755-8427 6832

Email & Skype: info@chipsmall.com Web: www.chipsmall.com

Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China



CNY17-1X, CNY17-2X, CNY17-3X,  
CNY17-4X, CNY17-5X CNY17-1,  
CNY17-2, CNY17-3, CNY17-4,



# ISOCOM

COMPONENTS

## OPTICALLY COUPLED ISOLATOR PHOTOTRANSISTOR OUTPUT



### APPROVALS

- UL recognised, File No. E91231  
Package System GG
- 'X' SPECIFICATION APPROVALS
  - VDE 0884 in 3 available lead forms: -
    - STD
    - G form
    - SMD approved to CECC 00802
- Certified to EN60950 by  
  
Nemko - Certificate No. P01102464

### DESCRIPTION

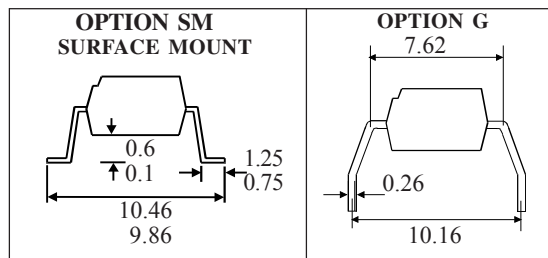
The CNY17-1, CNY17-2, CNY17-3, CNY17-4, CNY17-5 series of optically coupled isolators consist of an infrared light emitting diode and a NPN silicon photo transistor in a standard 6 pin dual in line plastic package.

### FEATURES

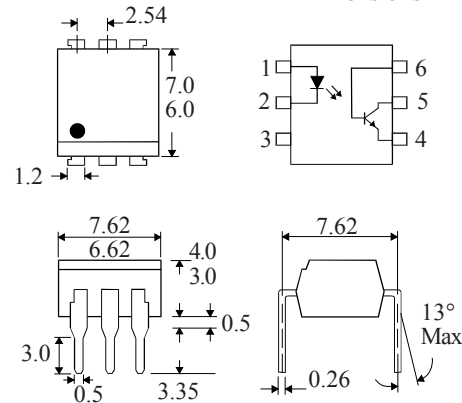
- Options :-
  - 10mm lead spread - add G after part no.
  - Surface mount - add SM after part no.
  - Tape&reel - add SMT&R after part no.
- High  $BV_{CEO}$  (70V min)
- High Isolation Voltage ( $5.3kV_{RMS}, 7.5kV_{PK}$ )
- All electrical parameters 100% tested
- Custom electrical selections available

### APPLICATIONS

- DC motor controllers
- Industrial systems controllers
- Measuring instruments
- Signal transmission between systems of different potentials and impedances



### Dimensions in mm



### ABSOLUTE MAXIMUM RATINGS (25°C unless otherwise specified)

Storage Temperature \_\_\_\_\_ -55°C to +150°C  
 Operating Temperature \_\_\_\_\_ -55°C to +100°C  
 Lead Soldering Temperature  
 (1/16 inch (1.6mm) from case for 10 secs) 260°C

### INPUT DIODE

Forward Current \_\_\_\_\_ 60mA  
 Reverse Voltage \_\_\_\_\_ 6V  
 Power Dissipation \_\_\_\_\_ 105mW

### OUTPUT TRANSISTOR

Collector-emitter Voltage  $BV_{CEO}$  \_\_\_\_\_ 70V  
 Collector-base Voltage  $BV_{CBO}$  \_\_\_\_\_ 70V  
 Emitter-collector Voltage  $BV_{ECO}$  \_\_\_\_\_ 7V  
 Collector Current \_\_\_\_\_ 50mA  
 Power Dissipation \_\_\_\_\_ 160mW

### POWER DISSIPATION

Total Power Dissipation \_\_\_\_\_ 200mW  
 (derate linearly 2.67mW/°C above 25°C)

### ISOCOM COMPONENTS 2004 LTD

Unit 25B, Park View Road West,  
 Park View Industrial Estate, Brenda Road  
 Hartlepool, TS25 1UD England  
 Tel: (01429)863609 Fax: (01429)863581 e-mail  
 sales@isocom.co.uk http://www.isocom.com

**ELECTRICAL CHARACTERISTICS (  $T_A = 25^\circ\text{C}$  Unless otherwise noted )**

PARAMETER		MIN	TYP	MAX	UNITS	TEST CONDITION
Input	Forward Voltage ( $V_F$ )		1.2	1.65	V	$I_F = 60\text{mA}$
	Reverse Current ( $I_R$ )			10	$\mu\text{A}$	$V_R = 6\text{V}$
Output	Collector-emitter Breakdown ( $BV_{CE0}$ )	70			V	$I_C = 1\text{mA}$ ( Note 2 )
	Collector-base Breakdown ( $BV_{CBO}$ )	70			V	$I_C = 100\mu\text{A}$
	Emitter-collector Breakdown ( $BV_{ECO}$ )	7			V	$I_E = 100\mu\text{A}$
	Collector-emitter Dark Current ( $I_{CEO}$ )			50	nA	$V_{CE} = 10\text{V}$
Coupled	Current Transfer Ratio (CTR) (Note 2)					
	CNY17-1	40	80		%	$10\text{mA } I_F, 5\text{V } V_{CE}$
	CNY17-2	63	125		%	$10\text{mA } I_F, 5\text{V } V_{CE}$
	CNY17-3	100	200		%	$10\text{mA } I_F, 5\text{V } V_{CE}$
	CNY17-4	160	320		%	$10\text{mA } I_F, 5\text{V } V_{CE}$
	CNY17-5	200	400		%	$10\text{mA } I_F, 5\text{V } V_{CE}$
	Collector-emitter Saturation Voltage $V_{CE(SAT)}$			0.4	V	$10\text{mA } I_F, 2.5\text{mA}$
Input to Output Isolation Voltage $V_{ISO}$	5300			$V_{RMS}$	See note 1	
Input-output Isolation Resistance $R_{ISO}$	$5 \times 10^{10}$			$\Omega$	$V_{IO} = 500\text{V}$ (note 1)	

Note 1 Measured with input leads shorted together and output leads shorted together.

Note 2 Special Selections are available on request. Please consult the factory.

**TYPICAL SWITCHING CHARACTERISTICS**

1. Linear Operation (without saturation) Fig 1.  
 $I_F = 10\text{mA}$ ,  $V_{CC} = 5\text{V}$ ,  $R_L = 75\Omega$

			UNITS
Turn-on Time	$t_{on}$	3.0	$\mu\text{s}$
Rise Time	$t_r$	2.0	$\mu\text{s}$
Turn-off Time	$t_{off}$	2.3	$\mu\text{s}$
Fall Time	$t_f$	2.0	$\mu\text{s}$
Cut-off Frequency	$F_{CO}$	250	kHz

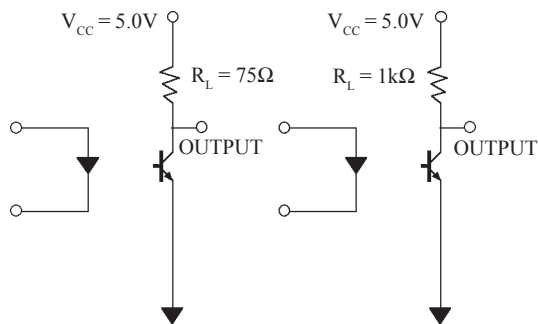
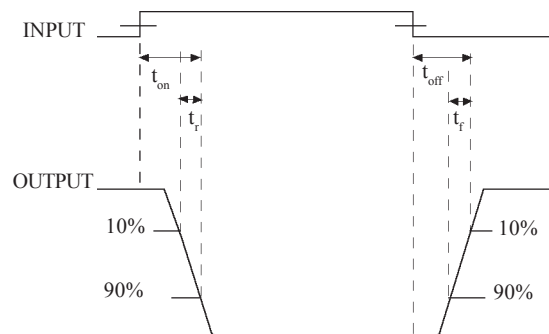


FIG 1

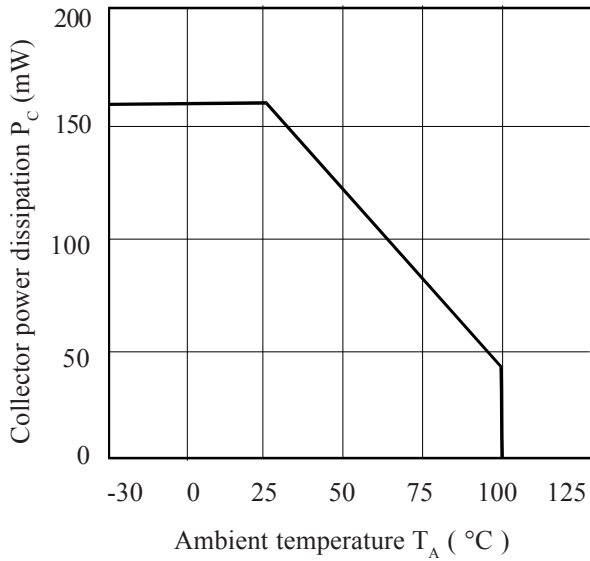
FIG 2

2. Switching Operation (with saturation) Fig 2  
 $V_{CC} = 5\text{V}$ ,  $R_L = 1\text{k}\Omega$

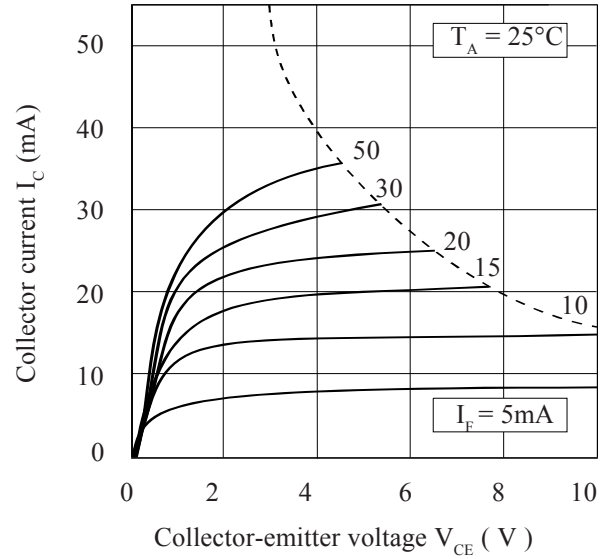
GROUP	-1 ( $I_F = 20\text{mA}$ )	-2 and -3 ( $I_F = 10\text{mA}$ )	-4 ( $I_F = 5\text{mA}$ )	UNITS	
Turn-on Time	$t_{on}$	3.0	4.2	6.0	$\mu\text{s}$
Rise Time	$t_r$	2.0	3.0	4.6	$\mu\text{s}$
Turn-off Time	$t_{off}$	18	23	25	$\mu\text{s}$
Fall Time	$t_f$	11	14	15	$\mu\text{s}$
$V_{CESAT}$				$\leq 0.4$	V



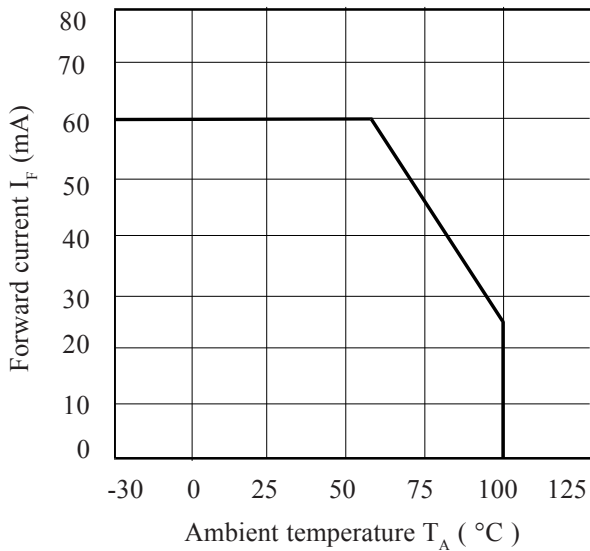
**Collector Power Dissipation vs. Ambient Temperature**



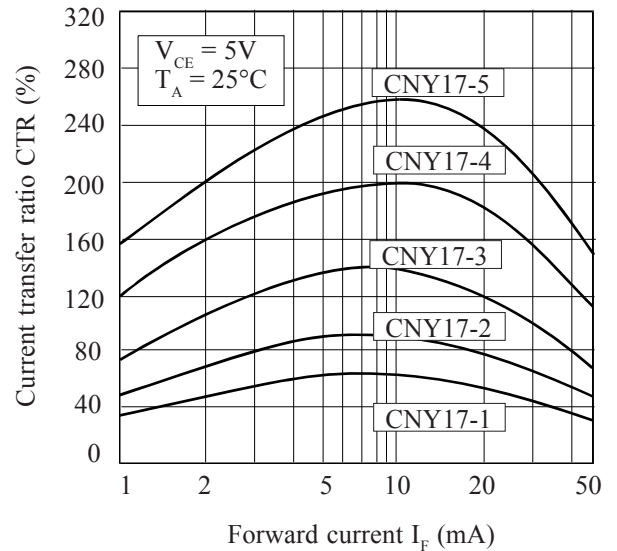
**Collector Current vs. Collector-emitter Voltage (normalised to CNY17-3)**



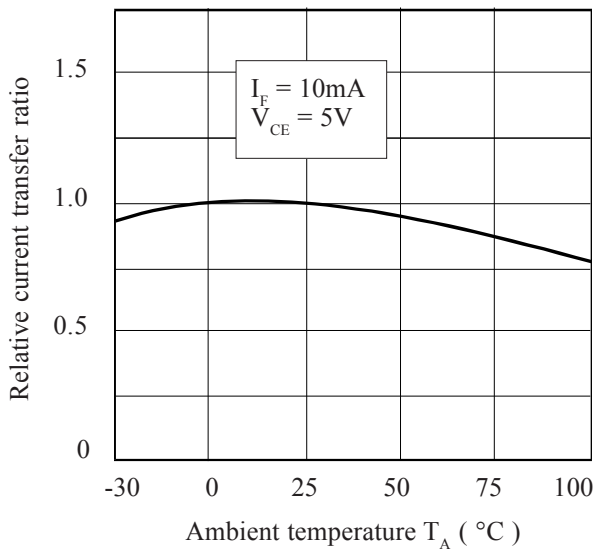
**Forward Current vs. Ambient Temperature**



**Current Transfer Ratio vs. Forward Current**



**Relative Current Transfer Ratio vs. Ambient Temperature**



**Collector-emitter Saturation Voltage vs. Ambient Temperature**

