

CNY75AX, CNY75BX, CNY75CX,  
CNY75A, CNY75B, CNY75C



**OPTICALLY COUPLED  
ISOLATOR  
PHOTOTRANSISTOR OUTPUT**

**APPROVALS**

- UL recognised, File No. E91231
- 'X' SPECIFICATION APPROVALS
  - VDE0884 in 3 available lead forms : -
    - STD
    - G form
    - SMD approved to CECC 00802
  - Certified to EN60950 by the following Test Bodies :-
    - Nemko - Certificate No. P96101299
    - Fimko - Registration No. 190469-01..22
    - Semko - Reference No. 9620076 01
    - Demko - Reference No. 305567

**DESCRIPTION**

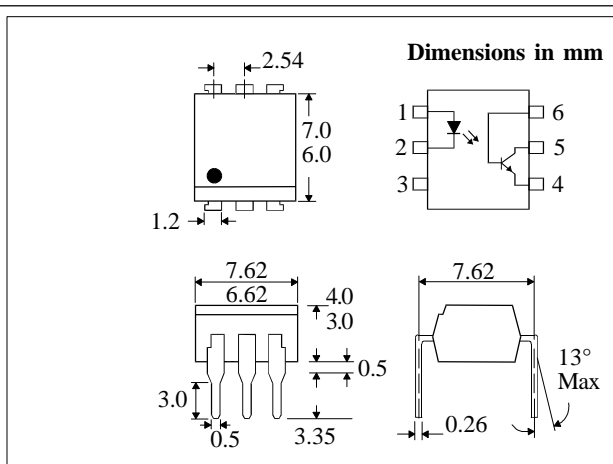
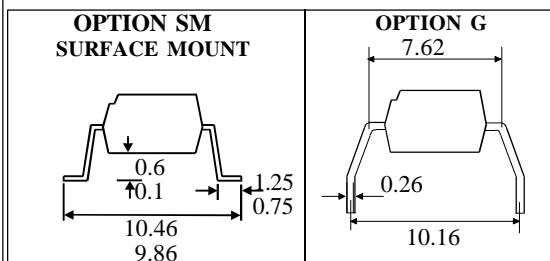
The CNY75A, CNY75B, CNY75C series of optically coupled isolators consist of infrared light emitting diode and NPN silicon photo transistor in a standard 6 pin dual in line plastic package.

**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  $BV_{CEO}$  (90V 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



**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 $BV_{CEO}$	90V
Collector-base Voltage $BV_{CBO}$	90V
Emitter-collector Voltage $BV_{ECO}$	6V
Power Dissipation	160mW

**POWER DISSIPATION**

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

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

**ISOCOM INC**  
1024 S. Greenville Ave, Suite 240,  
Allen, TX 75002 USA  
Tel: (214) 495-0755 Fax: (214) 495-0901  
e-mail info@isocom.com  
http://www.isocom.com

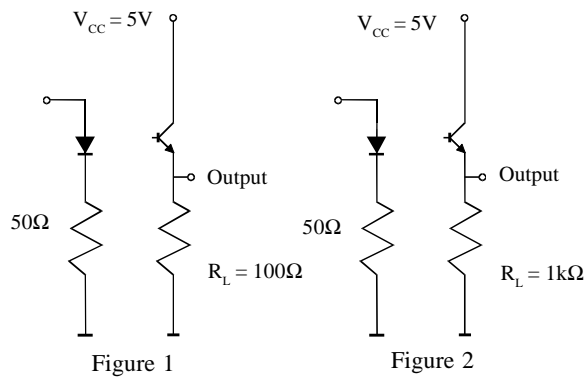
**ELECTRICAL CHARACTERISTICS (  $T_A = 25^\circ\text{C}$  Unless otherwise noted )**

PARAMETER		MIN	TYP	MAX	UNITS	TEST CONDITION	
Input	Forward Voltage ( $V_F$ )		1.2	1.60	V	$I_F = 50\text{mA}$ $I_R = 10\mu\text{A}$ $V_R = 6\text{V}$	
	Reverse Voltage ( $V_R$ )	6			V		
	Reverse Current ( $I_R$ )			10	$\mu\text{A}$		
Output	Collector-emitter Breakdown ( $BV_{CEO}$ ) ( Note 2 )	90			V	$I_C = 1\text{mA}$	
	Collector-base Breakdown ( $BV_{CBO}$ )	90			V	$I_C = 100\mu\text{A}$	
	Emitter-collector Breakdown ( $BV_{ECO}$ )	6			V	$I_E = 100\mu\text{A}$	
	Collector-emitter Dark Current ( $I_{CEO}$ )			150	nA	$V_{CE} = 20\text{V}$	
Coupled	$I_C / I_F$ (CTR) (Note 2)	CNY75A	15			%	$1\text{mA } I_F, 5\text{V } V_{CE}$
		CNY75B	30			%	$1\text{mA } I_F, 5\text{V } V_{CE}$
		CNY75C	60			%	$1\text{mA } I_F, 5\text{V } V_{CE}$
		CNY75A	63		125	%	$10\text{mA } I_F, 5\text{V } V_{CE}$
		CNY75B	100		200	%	$10\text{mA } I_F, 5\text{V } V_{CE}$
		CNY75C	160		320	%	$10\text{mA } I_F, 5\text{V } V_{CE}$
	Collector-emitter Saturation Voltage $V_{CE(SAT)}$			0.3	V	$10\text{mA } I_F, 1\text{mA } I_C$	
	Input to Output Isolation Voltage $V_{ISO}$		5300			$V_{RMS}$	See note 1
			7500			$V_{PK}$	See note 1
	Input-output Isolation Resistance $R_{ISO}$		$5 \times 10^{10}$			$\Omega$	$V_{IO} = 500\text{V}$ (note 1)

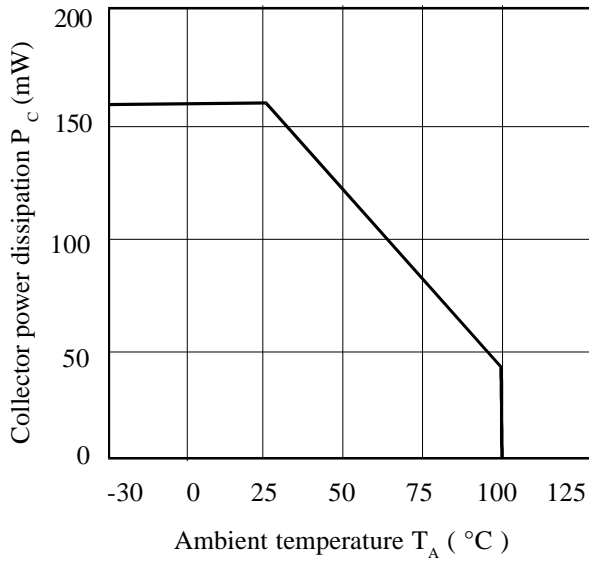
Note 1 Measured with input leads shorted together and output leads shorted together.

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

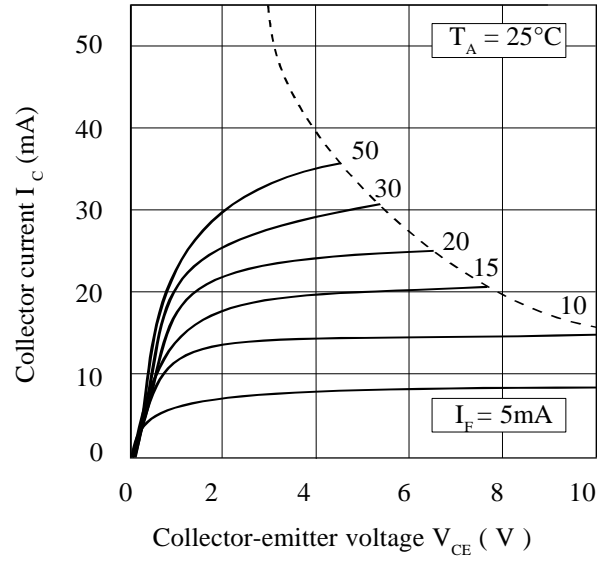
Type	$R_L = 100\Omega$ see fig 1							$R_L = 1\text{k}\Omega$ see fig 2		
	td	tr	ton	ts	tf	toff	$I_C$	ton	toff	$I_F$
	$\mu\text{s}$	$\mu\text{s}$	$\mu\text{s}$	$\mu\text{s}$	$\mu\text{s}$	$\mu\text{s}$	mA	$\mu\text{s}$	$\mu\text{s}$	mA
CNY75A	2.0	2.5	4.5	0.3	2.7	3.0	10	10	25	20
CNY75B	2.5	3.0	5.5	0.3	3.7	4.0	10	16.5	20	10
CNY75C	2.8	4.2	7.0	0.3	4.7	5.0	10	11	37.5	10



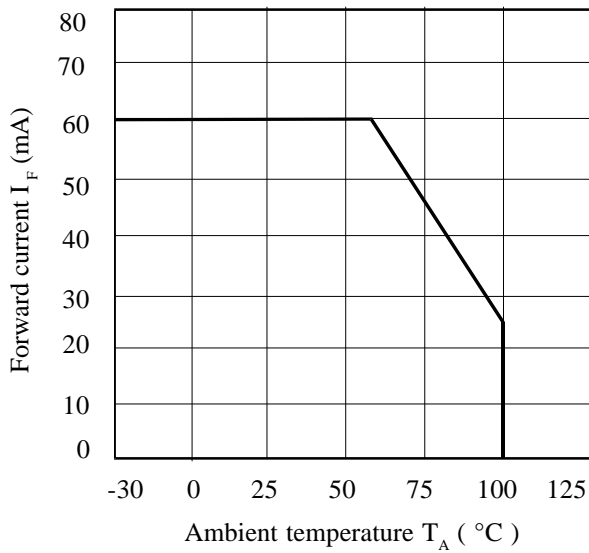
**Collector Power Dissipation vs. Ambient Temperature**



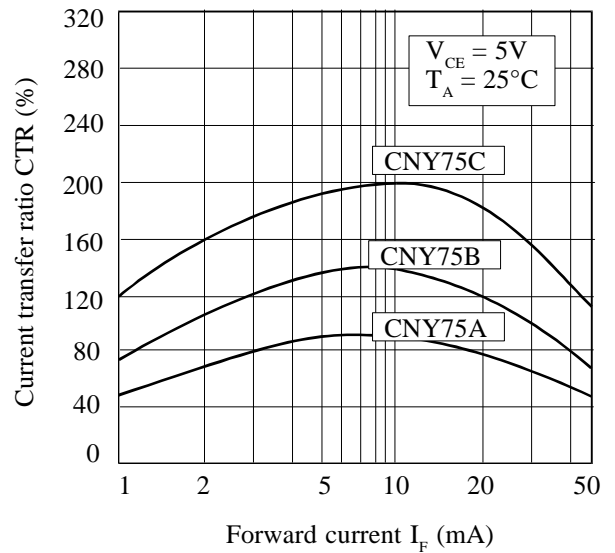
**Collector Current vs. Collector-emitter Voltage (normalised to CNY75B)**



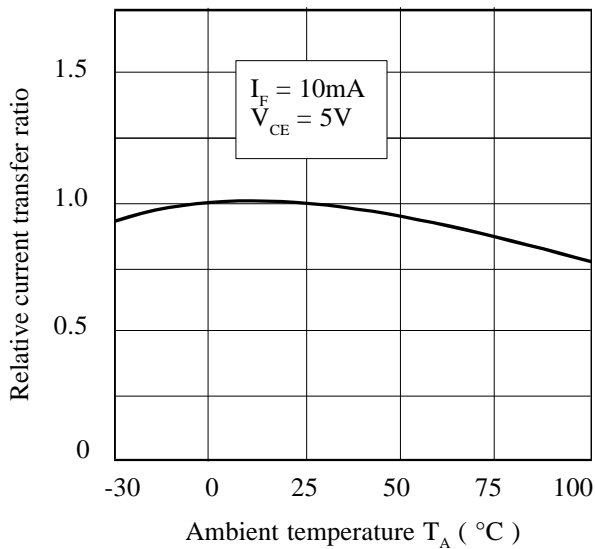
**Forward Current vs. Ambient Temperature**



**Current Transfer Ratio vs. Forward Current**



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



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

