CNY17F-1X, CNY17F-2X, CNY17F-3X, CNY17F-4X
CNY17F-1, CNY17F-2, CNY17F-3, CNY17F-4

ISOCOM COMPONENTS

ROHS COMPLIANT

NON-BASE LEAD OPTICALLY COUPLED ISOLATOR PHOTOTRANSISTOR OUTPUT

APPROVALS
- UL recognised, File No. E91231
  Package Code GG

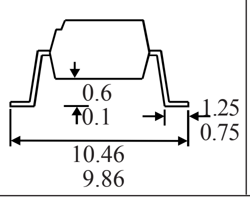
'X' SPECIFICATION APPROVALS
- VDE 0884 in 3 available lead forms : -
  - STD
  - G form
  - SMD approved to CECC 00802
- Certified to EN60950 by
  Nemko - Certificate No. P01102464

DESCRIPTION
The CNY17F-1, CNY17F-2, CNY17F-3, CNY17F-4 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 with the base pin unconnected.

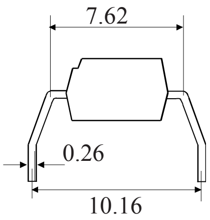
FEATURES
- Options :-
  10mm lead spread - add G after part no.
  Surface mount - add SM after part no.
  Tape&reel - add SMT&R after part no.
- High BV_{CEO} (70V min)
- High Isolation Voltage ($5.3kV_{RMS}$, $7.5kV_{PK}$)
- Base pin unconnected for improved noise immunity in high EMI environment

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

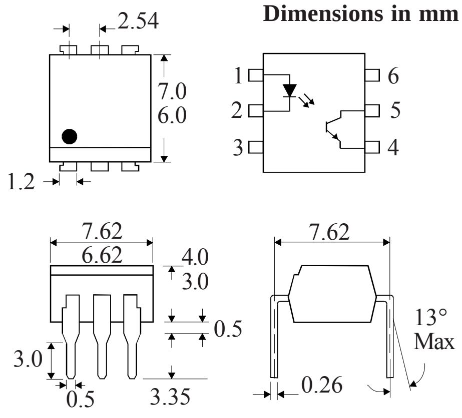
OPTION SM
SURFACE MOUNT



OPTION G



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
Emitter-collector Voltage BV_{ECO}	6V
Collector Current	50mA
Power Dissipation	160mW

POWER DISSIPATION

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

ISOCOM COMPONENTS 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°C Unless otherwise noted)

PARAMETER		MIN	TYP	MAX	UNITS	TEST CONDITION
Input	Forward Voltage (V_F)		1.2	1.65	V	I_F = 60mA
	Reverse Current (I_R)			10	µA	V_R=6V
Output	Collector-emitter Breakdown (BV_{CEO}) (note 2)	70			V	I_C = 1mA
	Emitter-collector Breakdown (BV_{ECO})	6			V	I_E = 100µA
	Collector-emitter Dark Current (I_{CEO})			50	nA	V_{CE} = 10V
Coupled	Current Transfer Ratio (CTR) (Note 2)					
	CNY17F-1	40		80	%	10mA I_F , 5V V_{CE}
	CNY17F-2	63		125	%	10mA I_F , 5V V_{CE}
	CNY17F-3	100		200	%	10mA I_F , 5V V_{CE}
	CNY17F-4	160		320	%	10mA I_F , 5V V_{CE}
	Collector-emitter Saturation Voltage $V_{CE(SAT)}$			0.4	V	10mA I_F , 2.5mA 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}	$5x10^{10}$			Ω	V_{IO} = 500V (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 = 10mA, V_{CC} = 5V, R_L = 75Ω

			UNITS
Turn-on Time	t_{on}	3.0	µs
Rise Time	t_r	2.0	µs
Turn-off Time	t_{off}	2.3	µs
Fall Time	t_f	2.0	µs
Cut-off Frequency	F_{CO}	250	kHz

2. Switching Operation (with saturation) Fig 2
V_{CC} = 5V, R_L = 1kΩ

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

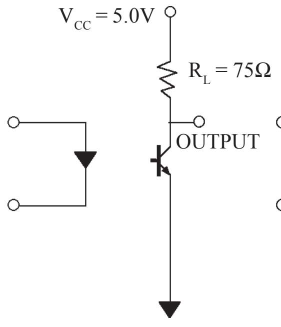


FIG 1

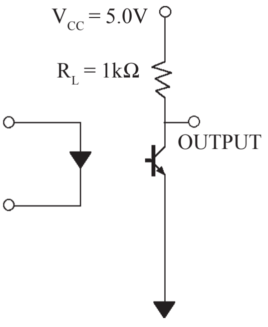
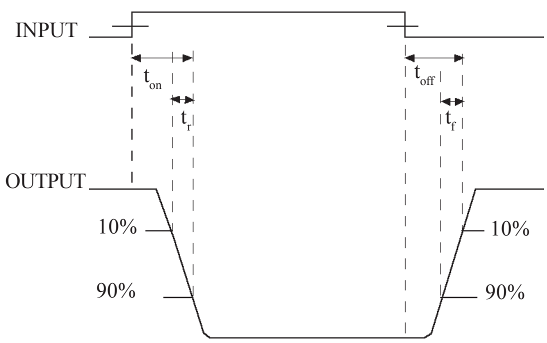


FIG 2



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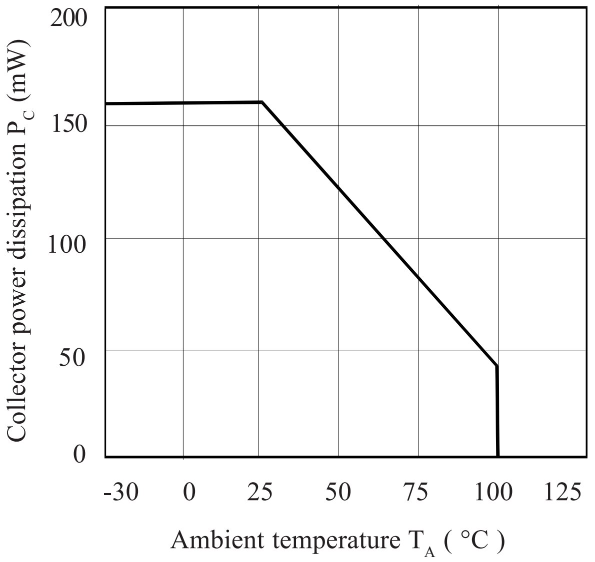
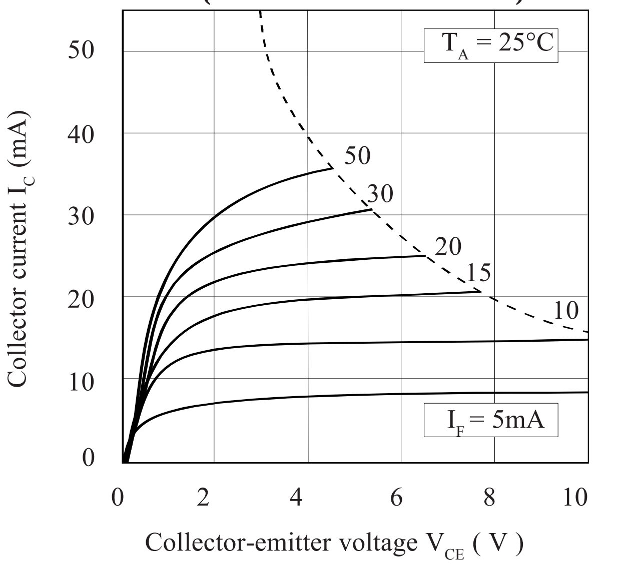
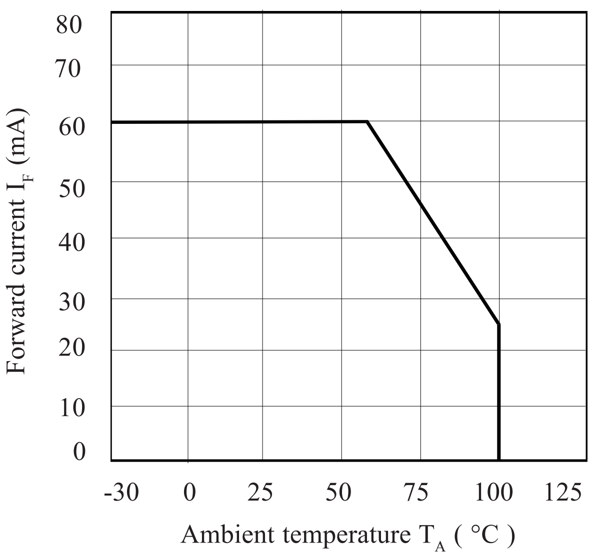
Collector Power Dissipation vs. Ambient Temperature



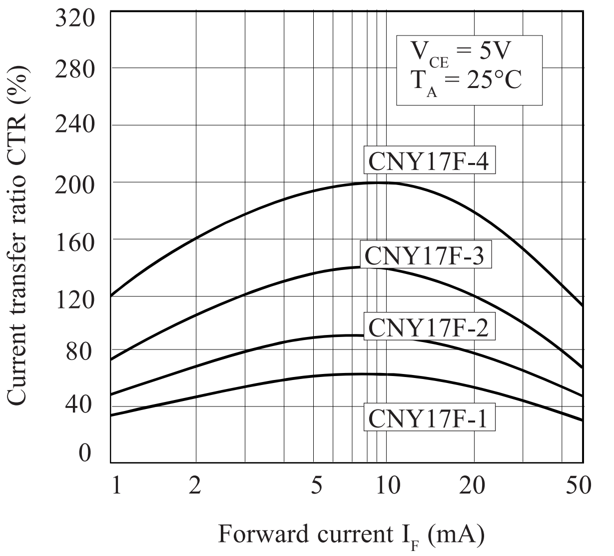
Collector Current vs. Collector-emitter Voltage (normalised to CNY17F-3)



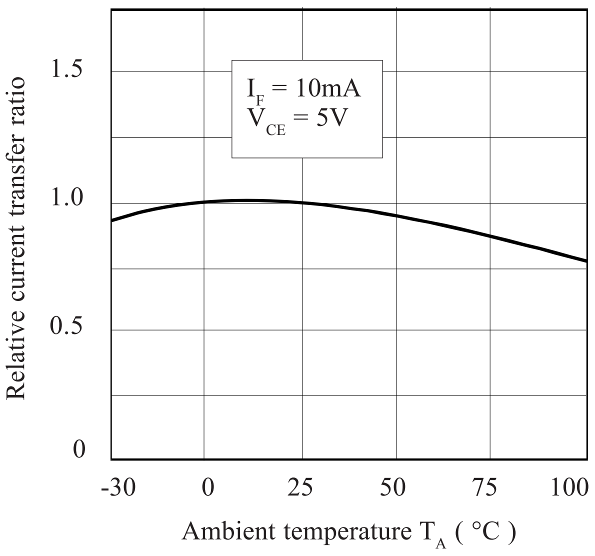
Forward Current vs. Ambient Temperature



Current Transfer Ratio vs. Forward Current



Relative Current Transfer Ratio vs. Ambient Temperature



Collector-emitter Saturation Voltage vs. Ambient Temperature