



**OPTICALLY COUPLED
ISOLATOR
PHOTOTRANSISTOR OUTPUT**

APPROVALS

- UL recognised, File No. E91231

'X' SPECIFICATION APPROVALS

- VDE 0884 approval pending
- EN60950 approval pending

DESCRIPTION

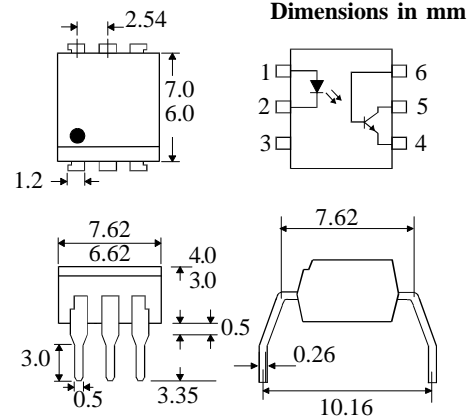
The CNX83AG optically coupled isolator consists of an infrared light emitting diode and a NPN silicon photo transistor in a standard 6 pin dual in line plastic package.

FEATURES

- High Current Transfer Ratio (40% min)
- Low Saturation Voltage suitable for TTL integrated circuits
- High BV_{CEO} (50V min)
- High Isolation Voltage ($5.3kV_{RMS}$, $7.5kV_{PK}$)

APPLICATIONS

- DC motor controllers
- Industrial systems controllers
- 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} _____ 50V
 Collector-base Voltage BV_{CBO} _____ 70V
 Emitter-collector Voltage BV_{ECO} _____ 6V
 Power Dissipation _____ 160mW

POWER DISSIPATION

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

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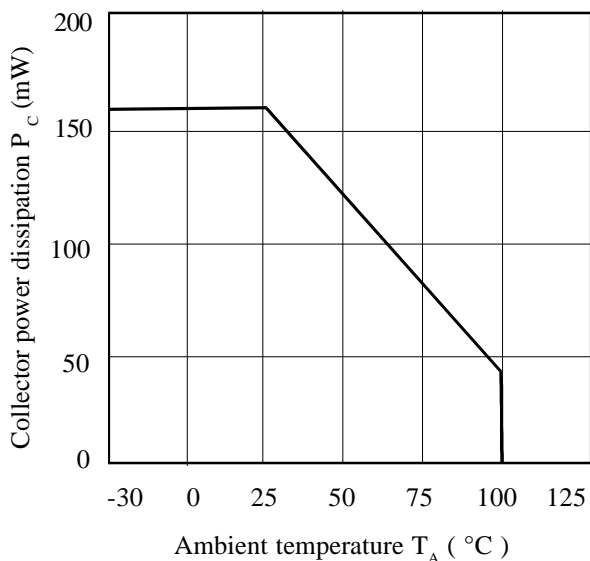
ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ Unless otherwise noted)

PARAMETER		MIN	TYP	MAX	UNITS	TEST CONDITION
Input	Forward Voltage (V_F)		1.2	1.5	V	$I_F = 10\text{mA}$
	Reverse Voltage (V_R)	6			V	$I_R = 10\mu\text{A}$
	Reverse Current (I_R)			10	μA	$V_R = 6\text{V}$
Output	Collector-emitter Breakdown (BV_{CEO}) (Note 2)	50			V	$I_C = 1\text{mA}$
	Collector-base Breakdown (BV_{CBO})	70			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})			50	nA	$V_{CE} = 10\text{V}$
Coupled	Current Transfer Ratio (I_C / I_F) (Note 2)	0.4	1.5			$10\text{mA } I_F, 0.4\text{V } V_{CE}$ $10\text{mA } I_F, 5\text{V } V_{CE}$
	Collector-emitter Saturation Voltage $V_{CE(SAT)}$			0.4	V	$10\text{mA } I_F, 4\text{mA } I_C$
	Input to Output Isolation Voltage V_{ISO}	5300 7500			V_{RMS} V_{PK}	See note 1 See note 1
	Input-output Isolation Resistance R_{ISO}	5×10^{10}			Ω	$V_{IO} = 500\text{V}$ (note 1)
	Turn-on Time t_{on}		3		μs	$V_{CC} = 5\text{V}, I_C = 2\text{mA},$ $R_L = 100\Omega$
	Turn-off Time t_{off}		3		μs	
	Turn-on Time t_{on}		12		μs	$V_{CC} = 5\text{V}, I_C = 2\text{mA},$ $R_L = 1\text{k}\Omega$
Turn-off Time t_{off}		12		μs		

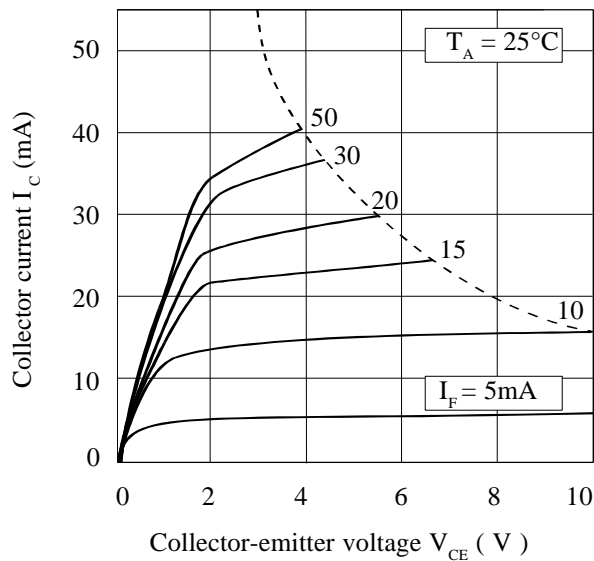
Note 1 Measured with input leads shorted together and output leads shorted together.

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

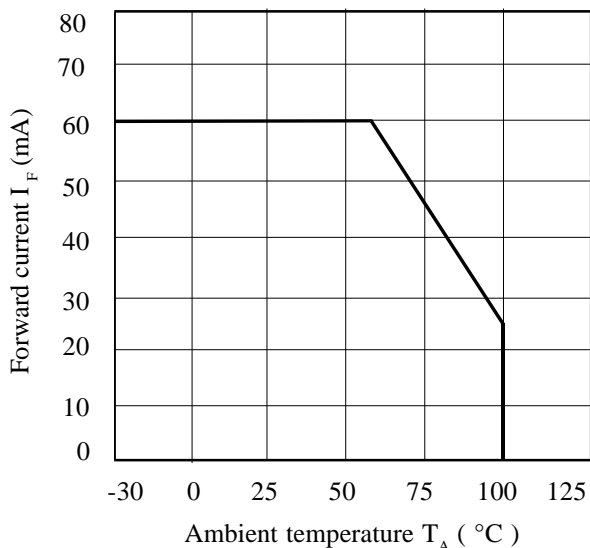
Collector Power Dissipation vs. Ambient Temperature



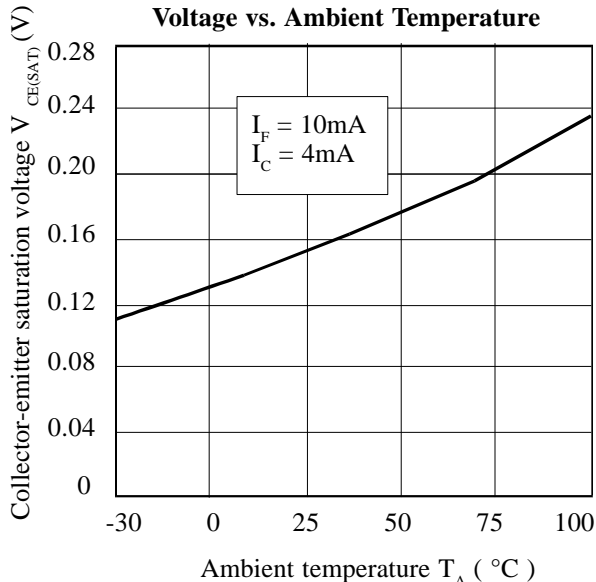
Collector Current vs. Collector-emitter Voltage



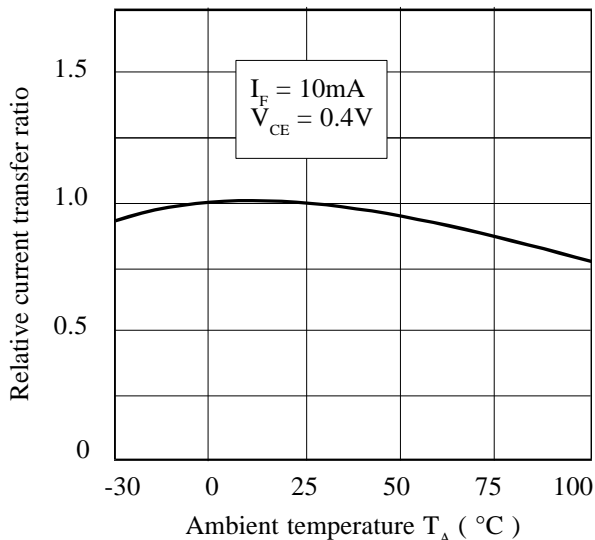
Forward Current vs. Ambient Temperature



Collector-emitter Saturation Voltage vs. Ambient Temperature



Relative Current Transfer Ratio vs. Ambient Temperature



Relative Current Transfer Ratio vs. Forward Current

