

ISOCOM[®]



Hutton Close, Crowther Ind Est, Washington, Tyne & Wear NE38 0AH, England
[Email: enquiry@isocomoptocouplers.com](mailto:enquiry@isocomoptocouplers.com) - Tel: +44 (0)191 4166546 - Fax: +44 (0)191 4155055

CNG35, CNG36, CNG39 CNX35, CNX36, CNX39 OPTICALLY COUPLED ISOLATORS

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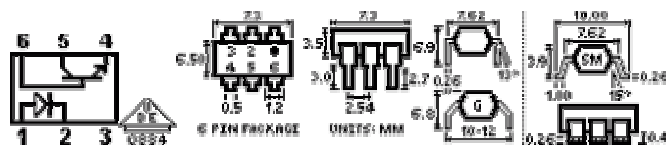
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Circuit



Features

- 3120-4400 Volt Isolation.
- High DC Current Transfer Ratio.
- Low Cost Dual-In-Line Package.
- Working Voltage 2500 VDC

Description

The CNG/CNX Series are optically coupled isolators consisting of a Gallium Arsenide infrared emitting diode and an NPN silicon phototransistor mounted in a standard 6-pin dual-in-line package. Surface Mount Option Available.

All electrical parameters are 100% tested by manufacturing. Specifications are guaranteed to a cumulative 0.65% AQL

Absolute Maximum Ratings (Ta=25°C)

Storage Temperature:	-55°C to +150°C
Operating Temperature:	-55°C to +100°C
Lead Soldering:	260°C for 10s, 1.6mm from case
Input-To-Output Isolation Voltage:	3120-4400Vdc

Input Diode

Forward DC Current:	100mA
Reverse DC Voltage:	5V
Peak Forward Current (1µs p.w. 300pps):	3A
Power Dissipation:	200mW
Derate Linearly:	1.33mW/°C above 25°C

Output Transistor

Collector-Emitter Voltage:	30V
Power Dissipation:	200mW

Optocoupler

Collector Cut-off Current (Dark) I_{CEW} :	200nA Max (Vcc=10V; work. volt.=2.5kV Diode; If=0)
Isolation Voltage DC V_{IO} :	4.4kVMin
Isolation Voltage AC (RMS) V_{IO} :	3.12kVMin

Package

Total Power Dissipation:	250mW
Derate Linearly:	3.3mW/°C above 25°C

Electro-optical Characteristics (Ta=25°C)

INPUT	PARAMETER	CONDITIONS	MIN	TYP	MAX	UNIT
V_F	Forward Voltage	$I_F=10mA$			1.5	V
I_R	Reverse Current	$V_R=5V$			10	µA
OUTPUT	PARAMETER	CONDITIONS	MIN	TYP	MAX	UNIT
I_{CEO}	Collector cut-off current (dark)	$V_{CE}=10V$			50	nA
		$V_{CE}=10V, T_A=70°C$			10	µA
		$V_{CB}=10V$			20	nA
	Collector-Emitter Breakdown	$V_{(BR)CEO}$	30			V

	Voltage					
COUPLED	PARAMETER	CONDITIONS	MIN	TYP	MAX	UNIT
I_C/I_F	DC Current Transfer Ratio					
	CNG/CNX35	$I_F=10\text{mA}, V_{CE}=5\text{V}$	40		80	%
	CNG/CNX36		63		125	%
	CNG/CNX39		100		200	%
R_{IO}	Input-to-Output Isolation Resistance	$V_{IO}=500\text{V}$, (note 1)	100			Gohm
$V_{CE(SAT)}$	Collector-Emitter Saturation Voltage	$I_F=10\text{mA}$, $I_C=2.5\text{mA}$		0.2	0.4	V
C_{IO}	Capacitance Input to Output	$f=1\text{MHz}$ (note 1)		0.6		pf
T_R	Output Rise Time	$I_F=10\text{mA}$, $V_{CC}=5.0\text{V}$		2	4	μs
T_{ON}	Output Turn-on Time	$R_L=75\text{ohm}$, $T_A=25^\circ\text{C}$		3	5.6	μs
T_F	Output Fall Time			2	3.5	μs
T_{OFF}	Output Turn-off Time			2.5	4.1	μs

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