

IL1, IL2, IL5, IL74
 ILD1, ILD2, ILD5, ILD74
 ILQ1, ILQ2, ILQ5, ILQ74



HIGH DENSITY PHOTOTRANSISTOR OPTICALLY COUPLED ISOLATORS

APPROVALS

- UL recognised, File No. E91231
 Package 'FF' (marked I _ _ FF)
 - 'X' SPECIFICATION APPROVALS
 - ILD*X, ILQ*X part numbers
- VDE 0884 in 3 available lead form :-
- STD
 - G form
 - SMD approved to CECC 00802
- IL*X part numbers VDE 0884 pending
- EN60950 pending

DESCRIPTION

The IL*, ILD*, ILQ* series of optically coupled isolators consist of infrared light emitting diodes and NPN silicon photo transistors in space efficient dual in line plastic packages.

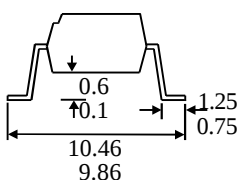
FEATURES

- Options :-
 - 10mm lead spread - add G after part no.
 - Surface mount - add SM after part no.
 - Tape&reel - add SMT&R after part no.
- Three package types
- High Current Transfer Ratio (50% min)
- High Isolation Voltage (5.3kV_{RMS}, 7.5kV_{PK})
- High BV_{CEO} (70V min)
- IL2, ILD2, ILQ2, IL5, ILD5, ILQ5

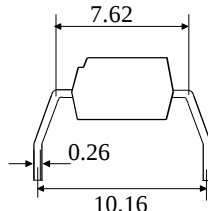
APPLICATIONS

- Computer terminals
- Industrial systems controllers
- Measuring instruments
- Signal transmission between systems of different potentials and impedances

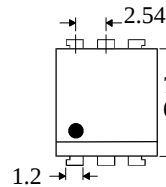
OPTION SM SURFACEMOUNT



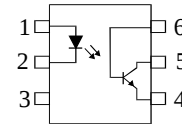
OPTION G



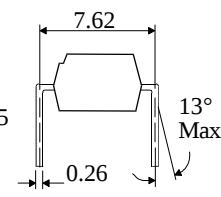
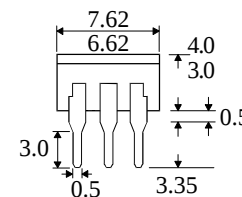
IL1
 IL2
 IL5
 IL74



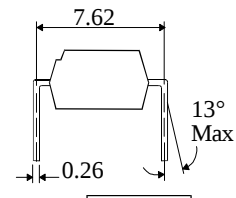
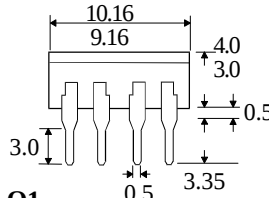
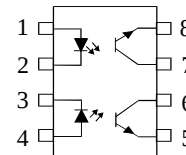
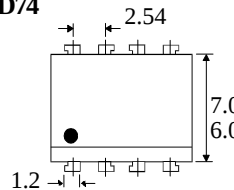
Dimensions in mm



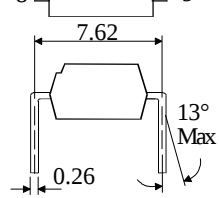
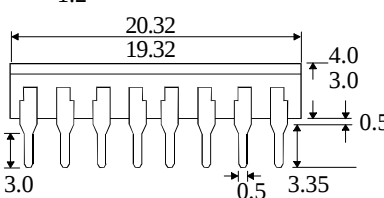
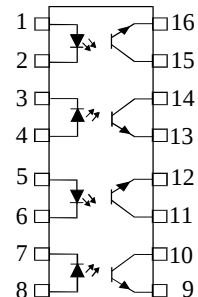
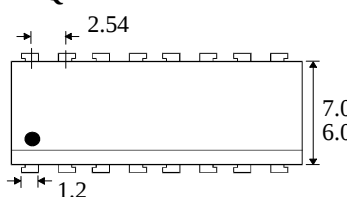
ILD1
 ILD2
 ILD5
 ILD74



ILQ1
 ILQ2
 ILQ5
 ILQ74



ILQ1
 ILQ2
 ILQ5
 ILQ74



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ABSOLUTE MAXIMUM RATINGS
(25°C unless otherwise specified)

Storage Temperature _____ -55°C to + 125°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 _____ 50mA
Reverse Voltage _____ 6V
Power Dissipation _____ 70mW

OUTPUT TRANSISTOR

Collector-emitter Voltage BV_{CEO}
IL2,ILD2,ILQ2,IL5,ILD5,ILQ5 _____ 70V
IL1,ILD1,ILQ1,IL74,ILD74,ILQ74 _____ 50V
Emitter-collector Voltage BV_{ECO} _____ 6V
Power Dissipation _____ 150mW

POWER DISSIPATION

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

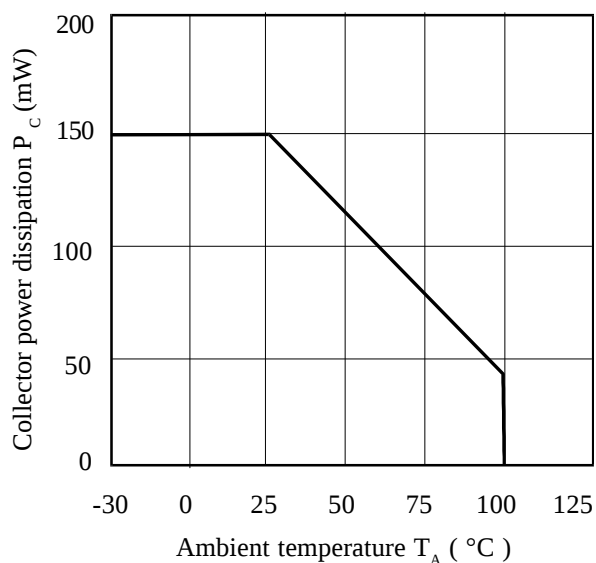
ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ Unless otherwise noted)

PARAMETER		MIN	TYP	MAX	UNITS	TEST CONDITION
Input	Forward Voltage (V_F)	6	1.2	1.65	V	$I_F = 50\text{mA}$ $I_R = 10\mu\text{A}$ $V_R = 6\text{V}$
	Reverse Voltage (V_R)				V	
	Reverse Current (I_R)			10	μA	
Output	Collector-emitter Breakdown (BV_{CEO}) IL2, ILD2, ILQ2, IL5, ILD5, ILQ5	70			V	$I_C = 1\text{mA}$ (Note 2) $I_E = 100\mu\text{A}$ $V_{CE} = 10\text{V}$
	IL1, ILD1, ILQ1, IL74, ILD74, ILQ74	50			V	
	Emitter-collector Breakdown (BV_{ECO})	6			V	
	Collector-emitter Dark Current (I_{CEO})			50	nA	
Coupled	Current Transfer Ratio (CTR) (Note 2)					
	IL1, ILD1, ILQ1	20		300	%	10mA I_F , 10V V_{CE}
	IL2, ILD2, ILQ2	100		500	%	10mA I_F , 10V V_{CE}
	IL5, ILD5, ILQ5	50		400	%	10mA I_F , 10V V_{CE}
	IL74, ILD74, ILQ74	12.5			%	16mA I_F , 5V V_{CE}
	Saturated Current Transfer Ratio					
	IL1, ILD1, ILQ1		75		%	10mA I_F , 0.4V V_{CE}
	IL2, ILD2, ILQ2		170		%	10mA I_F , 0.4V V_{CE}
	IL5, ILD5, ILQ5		100		%	10mA I_F , 0.4V V_{CE}
	IL74, ILD74, ILQ74	12.5			%	16mA I_F , 0.5V V_{CE}
	Input to Output Isolation Voltage V_{ISO}	5300			V_{RMS}	See note 1
	Input to Output Isolation Voltage V_{ISO}	7500			V_{PK}	See note 1
	Input-output Isolation Resistance R_{ISO}	5×10^{10}			Ω	$V = 500\text{V}$ (note 1)
	Output Rise Time		2.6		μs	I_F
	Output Fall Time tf				μs	$V = 5\text{V}$, R_L Ω

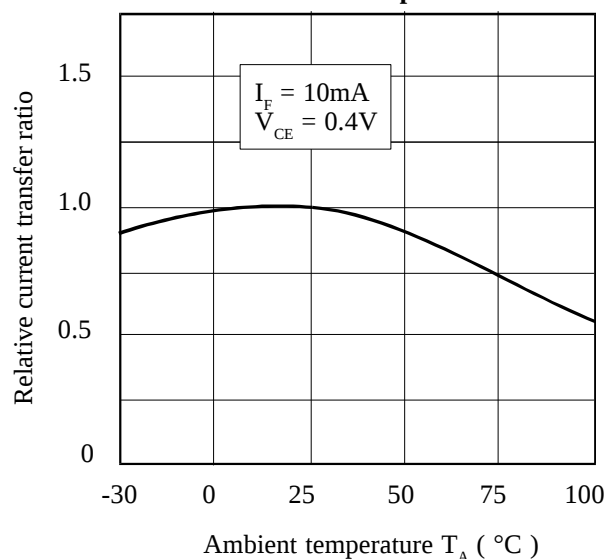
Note 1 Measured with input leads shorted together and output leads shorted together.

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

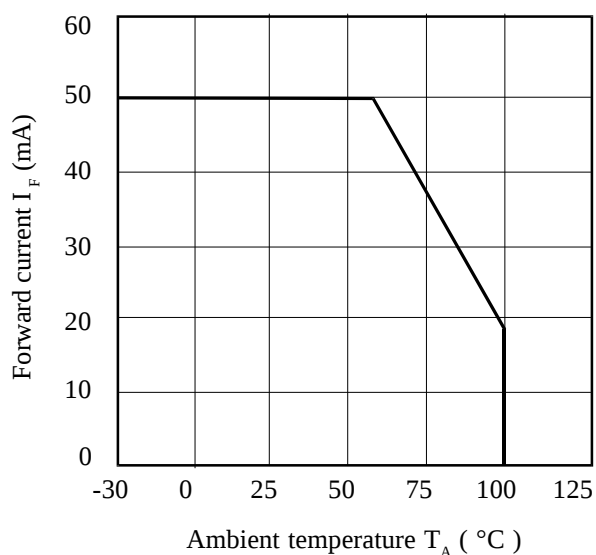
Collector Power Dissipation vs. Ambient Temperature



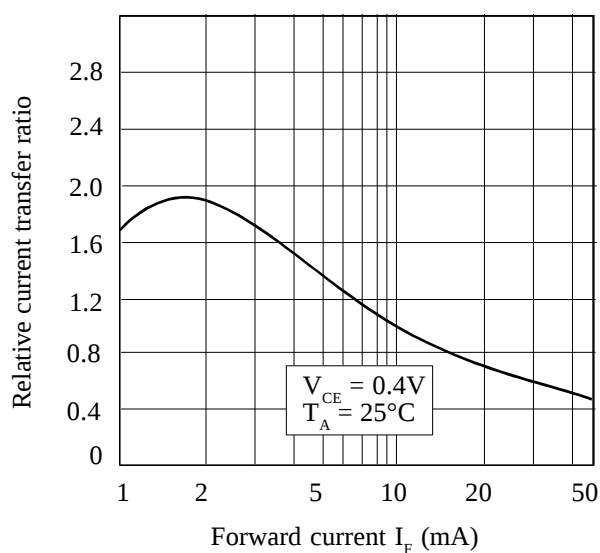
Relative Current Transfer Ratio vs. Ambient Temperature



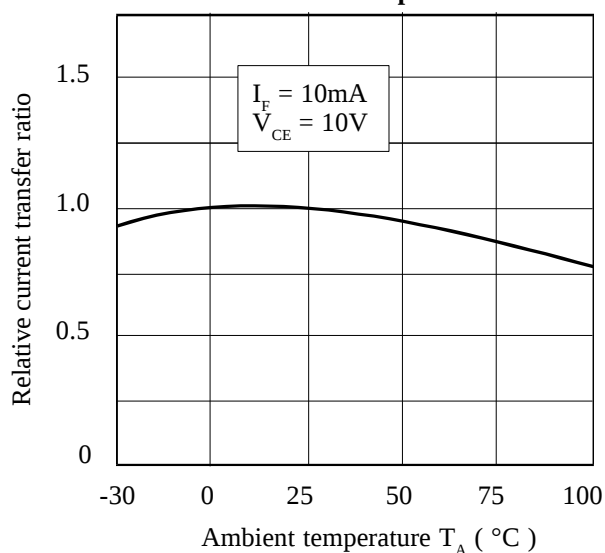
Forward Current vs. Ambient Temperature



Relative Current Transfer Ratio vs. Forward Current



Relative Current Transfer Ratio vs. Ambient Temperature



Relative Current Transfer Ratio vs. Forward Current

