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

HIGH DENSITY PHOTOTRANSISTOR OPTICALLY COUPLED ISOLATORS

ROHS COMPLIANT

APPROVALS

- UL recognised, File No. E91231
  IL* Package Code " GG "
  ILD*/ILQ* Package Code " FF "

'X' SPECIFICATION APPROVALS

Add 'X' after part number

- VDE 0884 in 3 available lead form : -
  - STD
  - G form
  - SMD approved to CECC 00802

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.

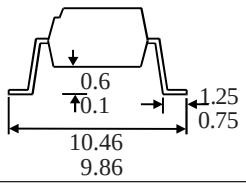
FEATURES

- 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

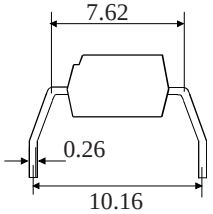
APPLICATIONS

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

OPTION SM
SURFACE MOUNT

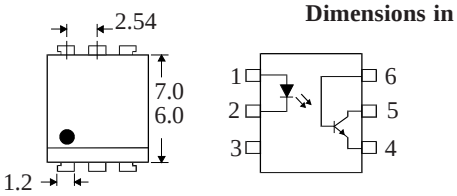


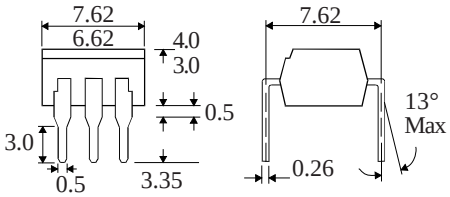
OPTION G



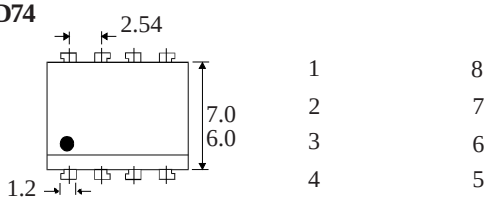
IL1
IL2
IL5
IL74

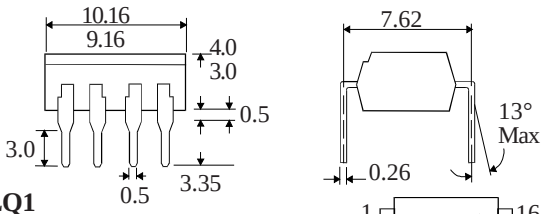
Dimensions in mm



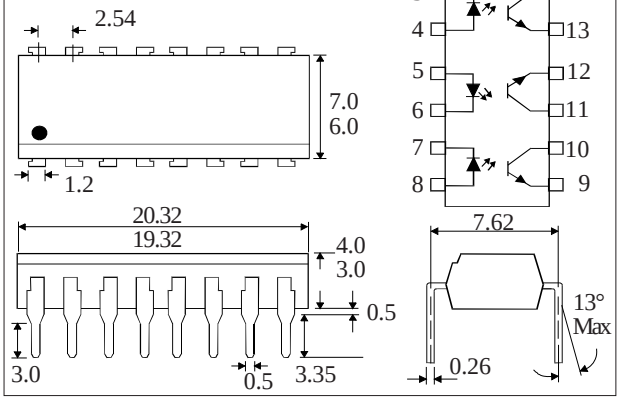


ILD1
ILD2
ILD5
ILD74





ILQ1
ILQ2
ILQ5
ILQ74



ISOCOM COMPONENTS 2004 LTD
Unit 25B, Park View Road West,
Park View Industrial Estate, Brenda Road
Hartlepool, Cleveland, TS25 1UD
Tel: (01429) 863609 Fax: (01429) 863581

ABSOLUTE MAXIMUM RATINGS
(25°C unless otherwise specified)

Storage Temperature	-40°C to + 125°C
Operating Temperature	-25°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
Collector Current	50mA
Power Dissipation	150mW

POWER DISSIPATION

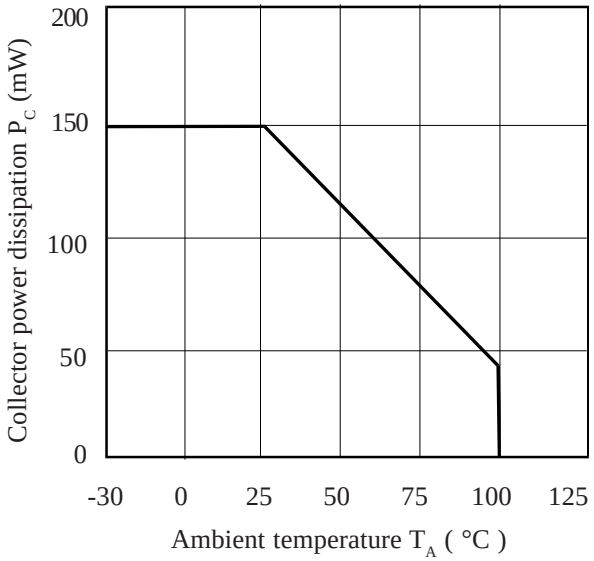
Total Power Dissipation	170mW
(derate linearly 2.67mW/°C above 25°C)	

ELECTRICAL CHARACTERISTICS (T_A = 25°C Unless otherwise noted)

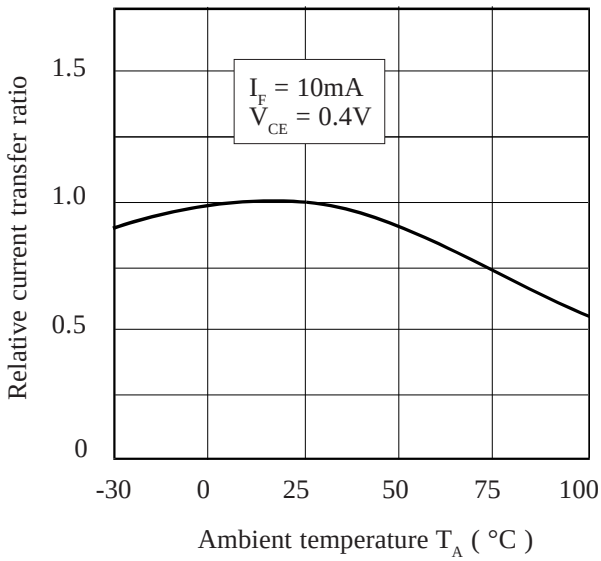
PARAMETER		MIN	TYP	MAX	UNITS	TEST CONDITION
Input	Forward Voltage (V_F)		1.2	1.65	V	I_F = 50mA
	Reverse Current (I_R)			10	µA	V_R = 4V
Output	Collector-emitter Breakdown (BV_{CEO})					
	IL2, ILD2, ILQ2, IL5, ILD5, ILQ5	70			V	I_C = 1mA , (Note 2)
	IL1, ILD1, ILQ1, IL74, ILD74, ILQ74	50			V	I_C = 1mA , (Note 2)
	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)					
	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}
	Collector-emitter Saturation Voltage, $V_{CE(SAT)}$			0.4	V	16mA I_F, 2mA I_C
	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}	$5x10^{10}$			Ω	V_{IO} = 500V (note 1)
	Output Rise Time tr		2		µs	I_F = 10mA
	Output Fall Time tf		2		µs	V_{CC} = 5V, R_L = 75Ω

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.

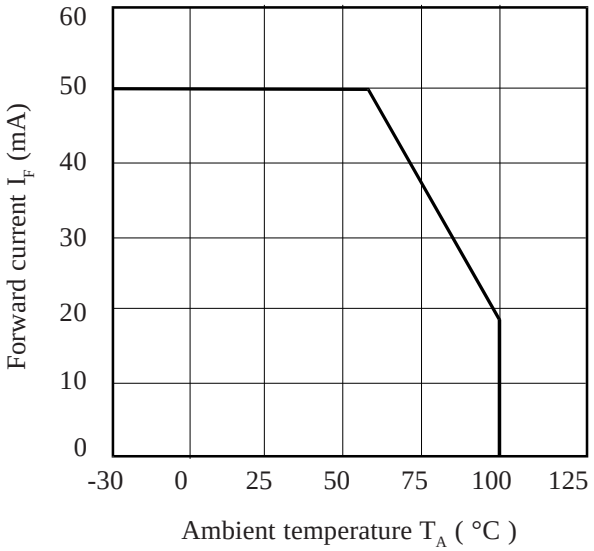
Collector Power Dissipation vs. Ambient Temperature



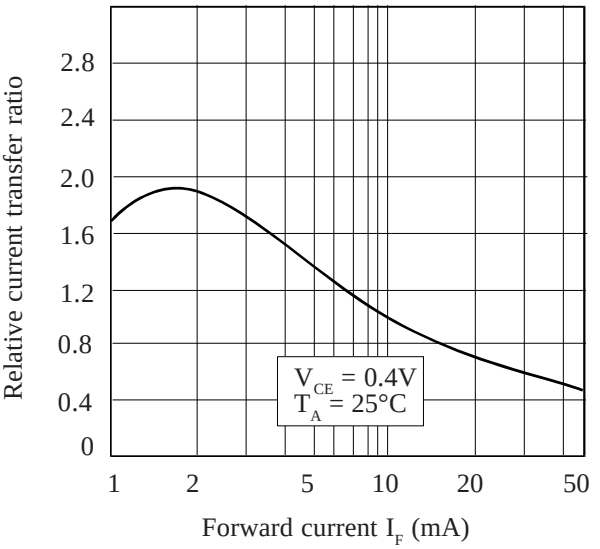
Relative Current Transfer Ratio vs. Ambient Temperature



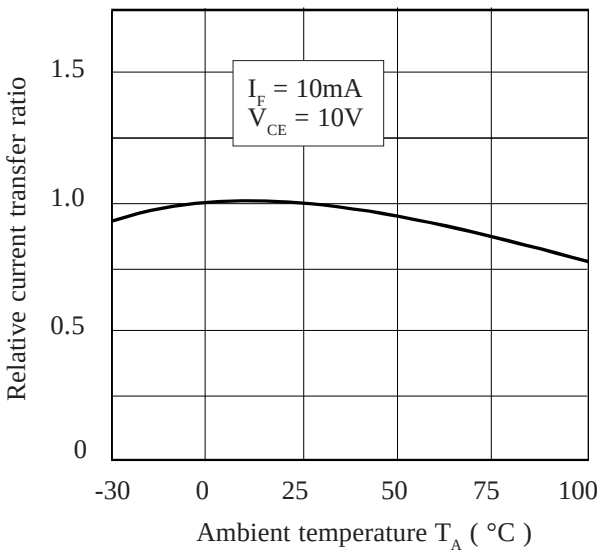
Forward Current vs. Ambient Temperature



Relative Current Transfer Ratio vs. Forward Current



Relative Current Transfer Ratio vs. Ambient Temperature



Relative Current Transfer Ratio vs. Forward Current