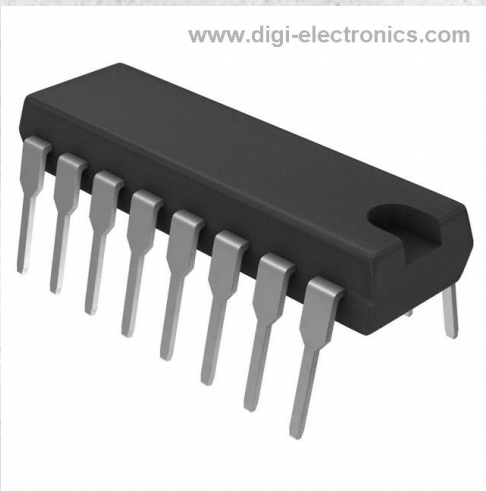
# ILQ1 Datasheet




https://www.DiGi-Electronics.com

| | |
|---|---|
| DiGi Electronics Part Number | ILQ1-DG |
| Manufacturer | Isocom Components 2004 LTD |
| Manufacturer Product Number | ILQ1 |
| Description | 16PIN TRANSISTOR DETECTOR, HIGH |
| Detailed Description | Optoisolator Transistor Output 5300Vrms 1 Channel 16-DIP |

This model ILQ1 is available at DiGi Electronics.

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Datasheet Search

Tel: +00 852-30501935

RFQ Email: Info@DiGi-Electronics.com

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## Purchase and inquiry

| Manufacturer Product Number: | Manufacturer: |
| --- | --- |
| ILQ1 | Isocom Components 2004 LTD |
| Series: | Product Status: |
| ILQ | Active |
| Number of Channels: | Voltage - Isolation: |
| 1 | 5300Vrms |
| Current Transfer Ratio (Min): | Current Transfer Ratio (Max): |
| 20% @ 10mA | 300% @ 10mA |
| Turn On / Turn Off Time (Typ): | Rise / Fall Time (Typ): |
| - | 2µs, 2µs |
| Input Type: | Output Type: |
| DC | Transistor |
| Voltage - Output (Max): | Current - Output / Channel: |
| 50V | 50mA |
| Voltage - Forward (Vf) (Typ): | Current - DC Forward (If) (Max): |
| 1.2V | 50 mA |
| Vce Saturation (Max): | Operating Temperature: |
| 400mV | -25°C ~ 100°C |
| Mounting Type: | Package / Case: |
| Through Hole | 16-DIP (0.300", 7.62mm) |
| Supplier Device Package: | |
| 16-DIP | |

## Environmental & Export classification

| RoHS Status: | Moisture Sensitivity Level (MSL): |
| --- | --- |
| ROHS3 Compliant | 1 (Unlimited) |
| REACH Status: | ECCN: |
| REACH Unaffected | EAR99 |
| HTSUS: | |
| 8541.49.8000 | |

**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.

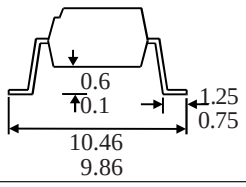
## FEATURES

- 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

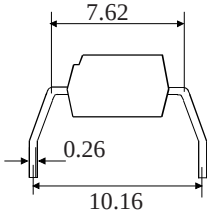
## APPLICATIONS

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

**OPTION SM**
**SURFACE MOUNT**

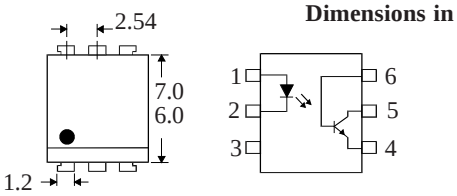


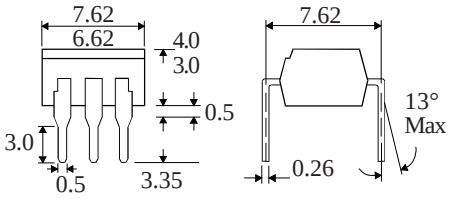

**OPTION G**



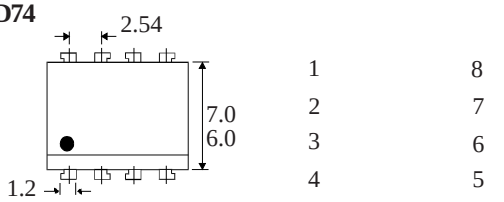

**IL1**
**IL2**
**IL5**
**IL74**

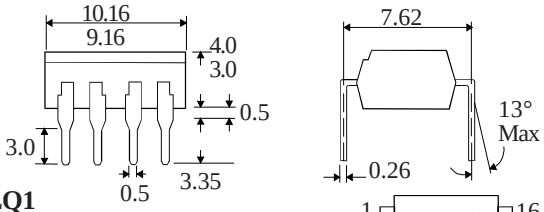
Dimensions in mm



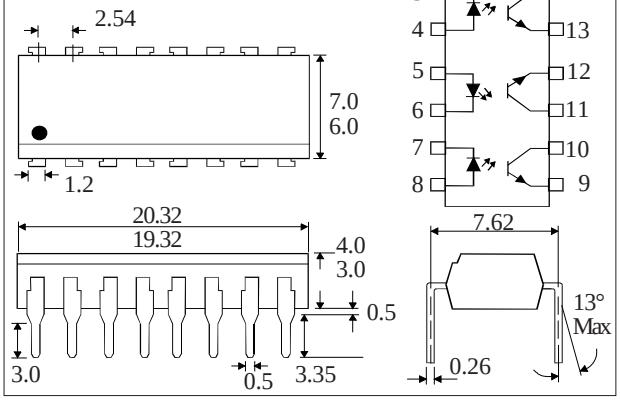




**ILD1**
**ILD2**
**ILD5**
**ILD74**




**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**

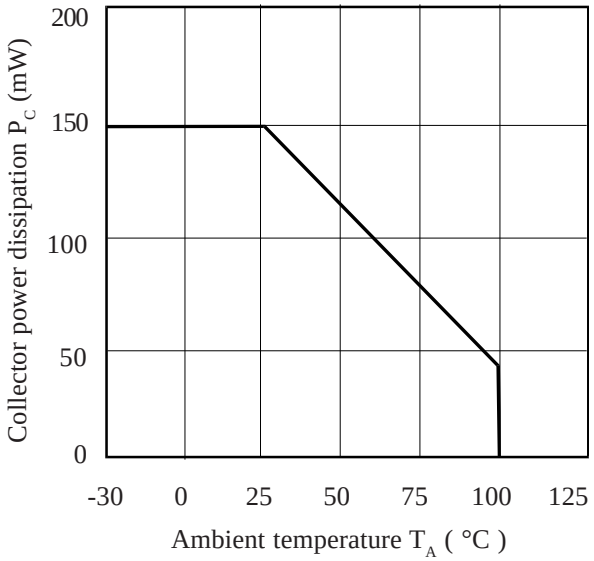
| | |
|---|---|
| Total Power Dissipation | 170mW |
| (derate linearly 2.67mW/°C above 25°C) | |

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

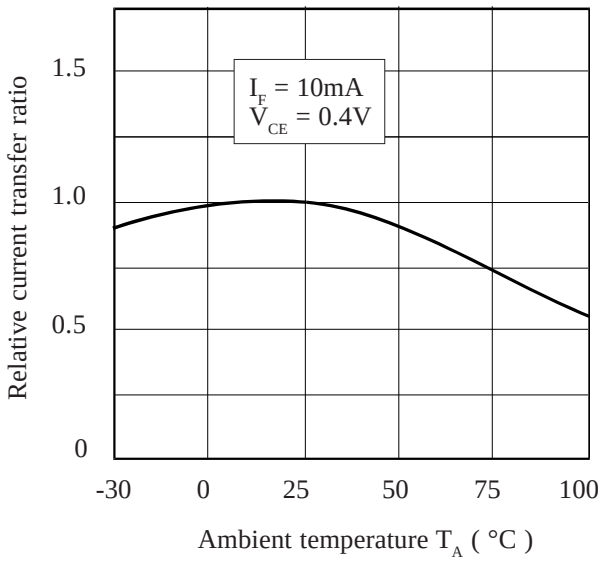
| PARAMETER | | MIN | TYP | MAX | UNITS | TEST CONDITION |
|---|---|---|---|---|---|---|
| Input | Forward Voltage ($V_F$) | | 1.2 | 1.65 | V | $I_F$ = 50mA |
| | Reverse Current ($I_R$) | | | 10 | µA | $V_R$ = 4V |
| Output | Collector-emitter Breakdown ($BV_{CEO}$) | | | | | |
| | IL2, ILD2, ILQ2, 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.

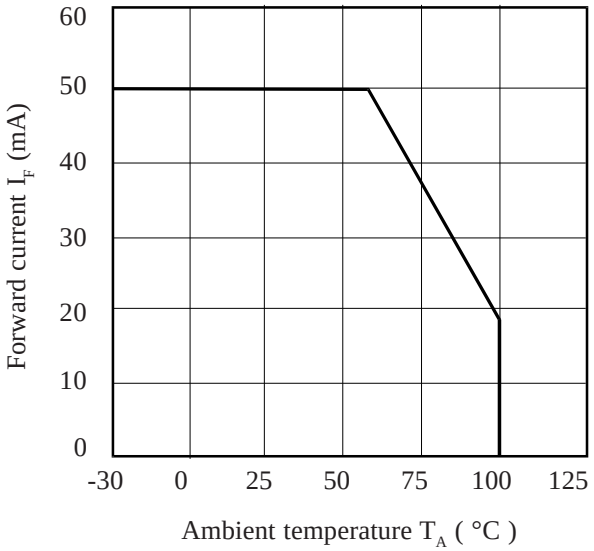
**Collector Power Dissipation vs. Ambient Temperature**



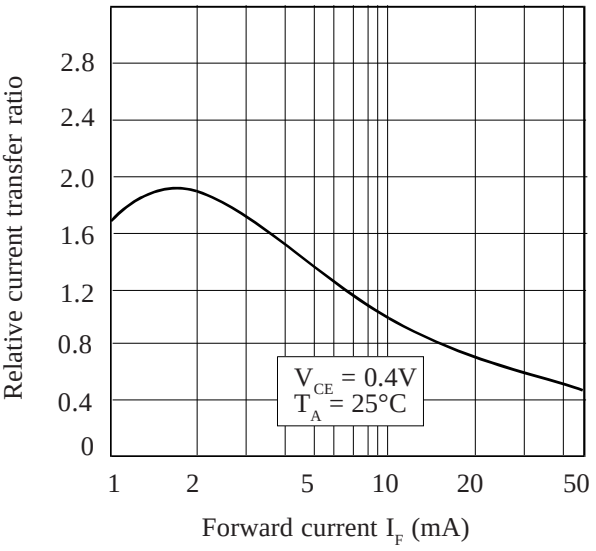

**Relative Current Transfer Ratio vs. Ambient Temperature**



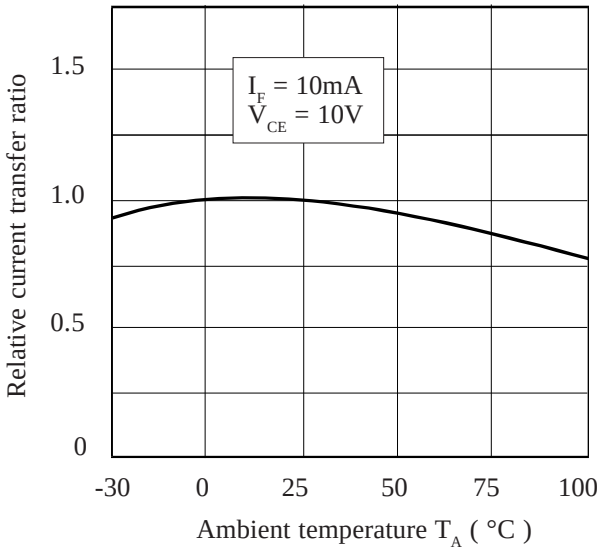

**Forward Current vs. Ambient Temperature**



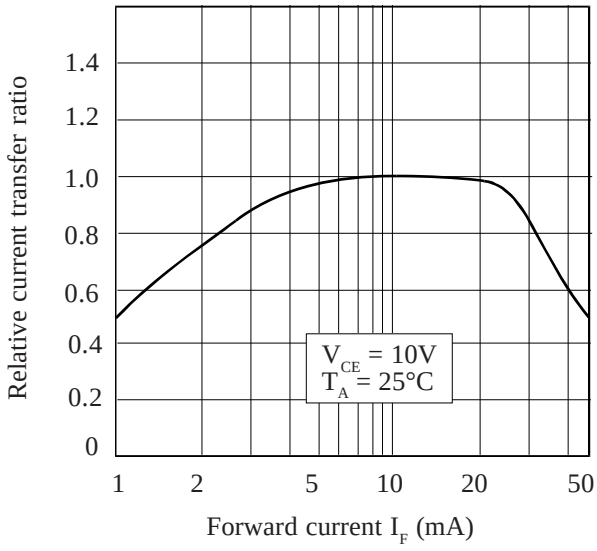

**Relative Current Transfer Ratio vs. Forward Current**




**Relative Current Transfer Ratio vs. Ambient Temperature**




**Relative Current Transfer Ratio vs. Forward Current**



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