



**EN:** This Datasheet is presented by the manufacturer.

Please visit our website for pricing and availability at [www.hestore.hu](http://www.hestore.hu).

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



# ISOCOM

COMPONENTS

## HIGH DENSITY PHOTOTRANSISTOR OPTICALLY COUPLED ISOLATORS



### 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.

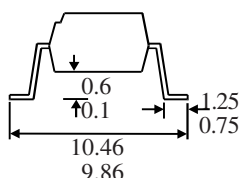
### FEATURES

- 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<sub>RMS</sub>, 7.5kV<sub>PK</sub>)
- High BV<sub>CEO</sub> (70V min)
- IL2, ILD2, ILQ2, IL5, ILD5, ILQ5

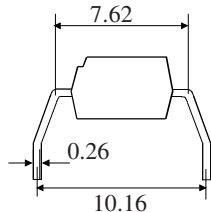
### APPLICATIONS

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

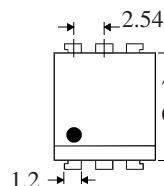
#### OPTION SM SURFACE MOUNT



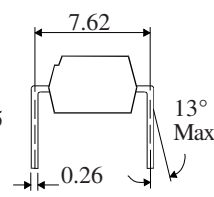
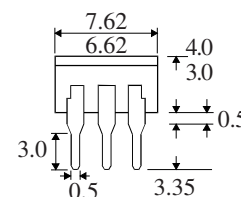
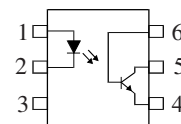
#### OPTION G GULL WING



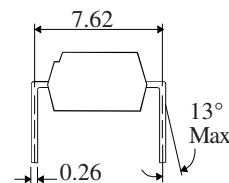
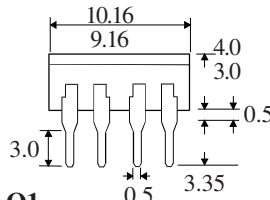
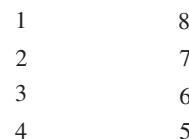
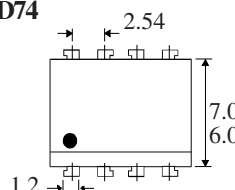
IL1  
IL2  
IL5  
IL74



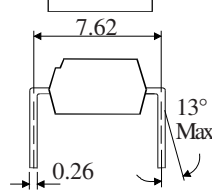
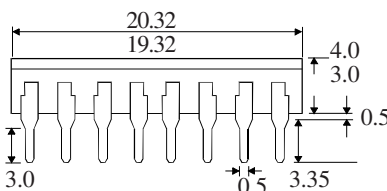
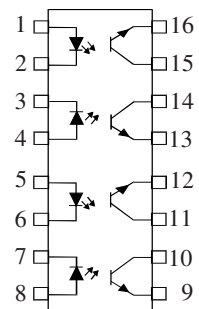
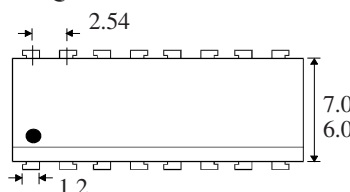
Dimensions in mm



ILD1  
ILD2  
ILD5  
ILD74



ILQ1  
ILQ2  
ILQ5  
ILQ74



ISOCOM COMPONENTS 2004 LTD

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**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)

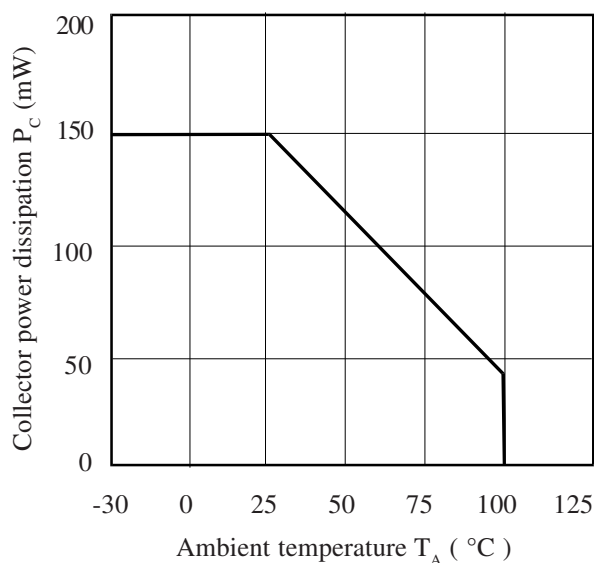
**ELECTRICAL CHARACTERISTICS (  $T_A = 25^\circ\text{C}$  Unless otherwise noted )**

| PARAMETER |                                                                                | MIN                | TYP | MAX  | UNITS         | TEST CONDITION                          |
|-----------|--------------------------------------------------------------------------------|--------------------|-----|------|---------------|-----------------------------------------|
| Input     | Forward Voltage ( $V_F$ )                                                      |                    | 1.2 | 1.65 | V             | $I_F = 50\text{mA}$                     |
|           | Reverse Current ( $I_R$ )                                                      |                    |     | 10   | $\mu\text{A}$ | $V_R = 4\text{V}$                       |
| Output    | Collector-emitter Breakdown ( $BV_{CEO}$ )<br>IL2, ILD2, ILQ2, IL5, ILD5, ILQ5 | 70                 |     |      | V             | $I_C = 1\text{mA}$ , ( Note 2 )         |
|           | IL1, ILD1, ILQ1, IL74, ILD74, ILQ74                                            | 50                 |     |      | V             | $I_C = 1\text{mA}$ , ( Note 2 )         |
|           | 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 (CTR) (Note 2)<br>IL1, ILD1, ILQ1                       | 20                 |     | 300  | %             | $10\text{mA } I_F, 10\text{V } V_{CE}$  |
|           | IL2, ILD2, ILQ2                                                                | 100                |     | 500  | %             | $10\text{mA } I_F, 10\text{V } V_{CE}$  |
|           | IL5, ILD5, ILQ5                                                                | 50                 |     | 400  | %             | $10\text{mA } I_F, 10\text{V } V_{CE}$  |
|           | IL74, ILD74, ILQ74                                                             | 12.5               |     |      | %             | $16\text{mA } I_F, 5\text{V } V_{CE}$   |
|           | Saturated Current Transfer Ratio<br>IL1, ILD1, ILQ1                            |                    | 75  |      | %             | $10\text{mA } I_F, 0.4\text{V } V_{CE}$ |
|           | IL2, ILD2, ILQ2                                                                |                    | 170 |      | %             | $10\text{mA } I_F, 0.4\text{V } V_{CE}$ |
|           | IL5, ILD5, ILQ5                                                                |                    | 100 |      | %             | $10\text{mA } I_F, 0.4\text{V } V_{CE}$ |
|           | IL74, ILD74, ILQ74                                                             | 12.5               |     |      | %             | $16\text{mA } I_F, 0.5\text{V } V_{CE}$ |
|           | Collector-emitter Saturation Voltage, $V_{CE(SAT)}$                            |                    |     | 0.4  | V             | $16\text{mA } I_F, 2\text{mA } I_C$     |
|           | 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 $R_{ISO}$                                    | $5 \times 10^{10}$ |     |      | $\Omega$      | $V_{IO} = 500\text{V}$ (note 1)         |
|           | Output Rise Time $t_r$                                                         |                    | 2   |      | $\mu\text{s}$ | $I_F = 10\text{mA}$                     |
|           | Output Fall Time $t_f$                                                         |                    | 2   |      | $\mu\text{s}$ | $V_{CC} = 5\text{V}, R_L = 75\Omega$    |

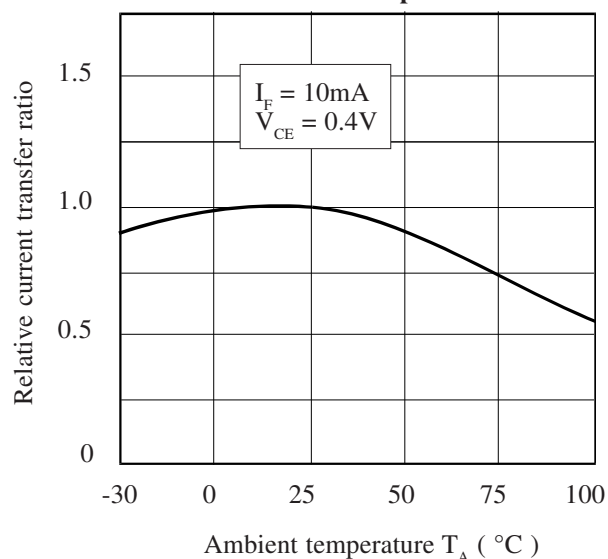
Note 1 Measured with input leads shorted together and output leads shorted together.

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

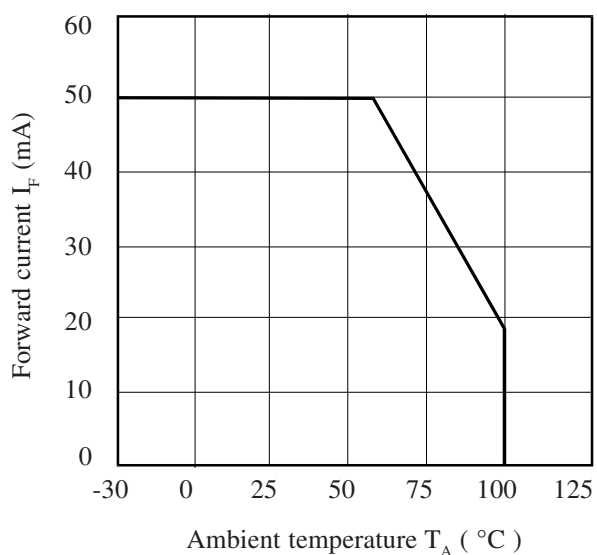
**Collector Power Dissipation vs. Ambient Temperature**



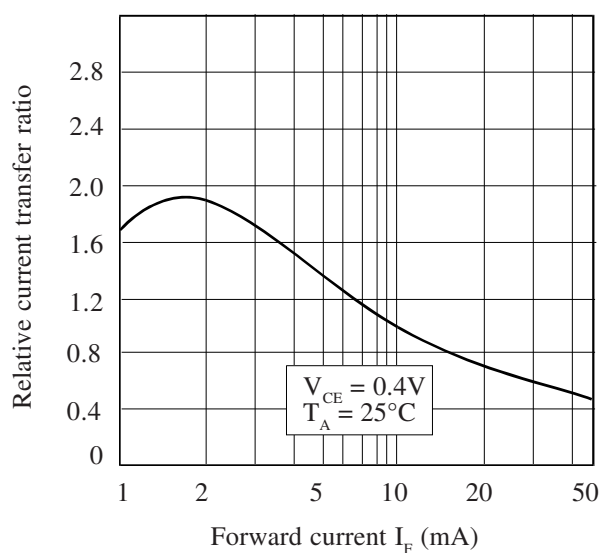
**Relative Current Transfer Ratio vs. Ambient Temperature**



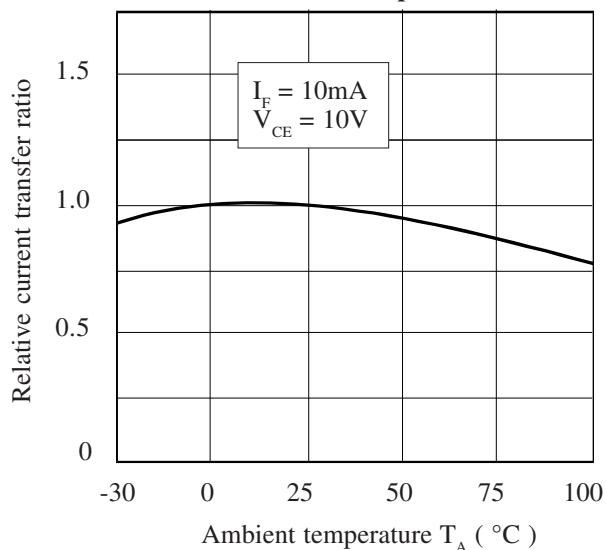
**Forward Current vs. Ambient Temperature**



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



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



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

