

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.

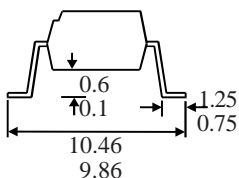
**FEATURES**

- 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

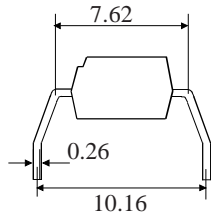
**APPLICATIONS**

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

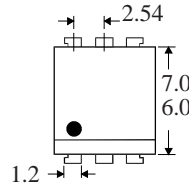
**OPTION SM  
 SURFACE MOUNT**



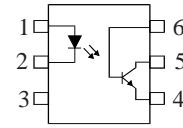
**OPTION G**



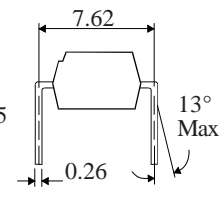
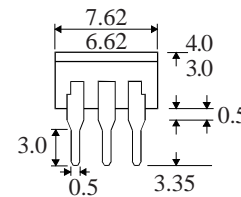
**IL1  
 IL2  
 IL5  
 IL74**



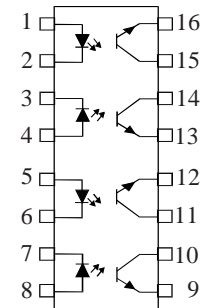
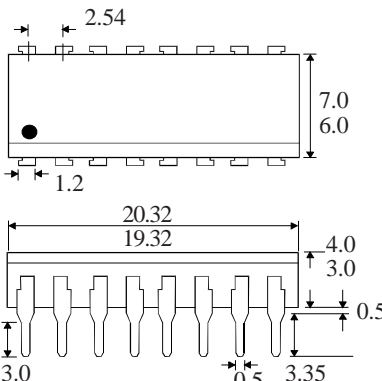
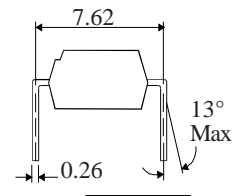
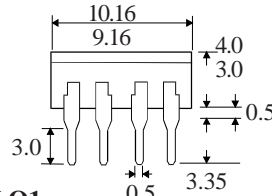
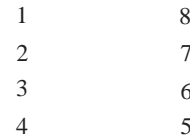
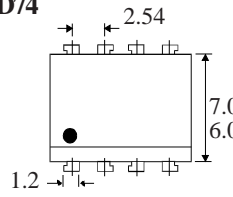
**Dimensions in mm**



**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)

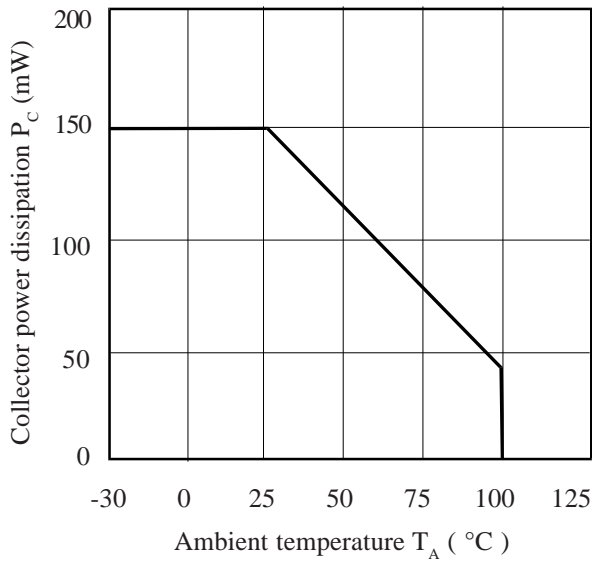
**ELECTRICAL CHARACTERISTICS (  $T_A = 25^\circ\text{C}$  Unless otherwise noted )**

	PARAMETER	MIN	TYP	MAX	UNITS	TEST CONDITION
Input	Forward Voltage ( $V_F$ ) Reverse Current ( $I_R$ )		1.2	1.65 10	V $\mu\text{A}$	$I_F = 50\text{mA}$ $V_R = 4\text{V}$
Output	Collector-emitter Breakdown ( $BV_{CEO}$ ) 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) 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 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 tr		2		$\mu\text{s}$	$I_F = 10\text{mA}$
Output Fall Time tf		2		$\mu\text{s}$	$V_{CC} = 5\text{V}, R_L = 75\Omega$	

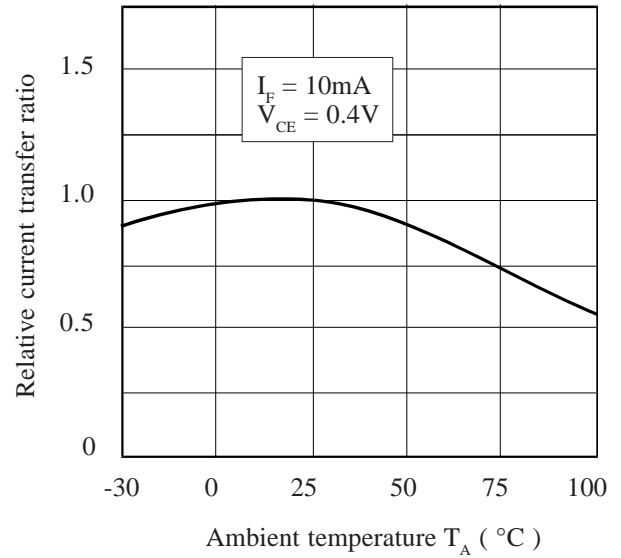
Note 1 Measured with input leads shorted together and output leads shorted together.

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

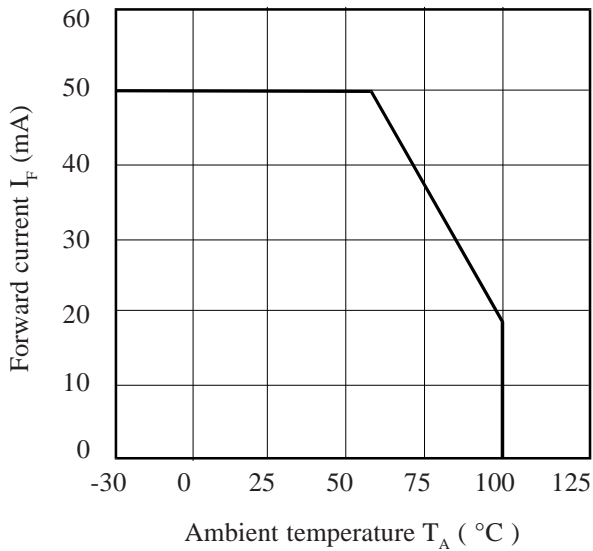
**Collector Power Dissipation vs. Ambient Temperature**



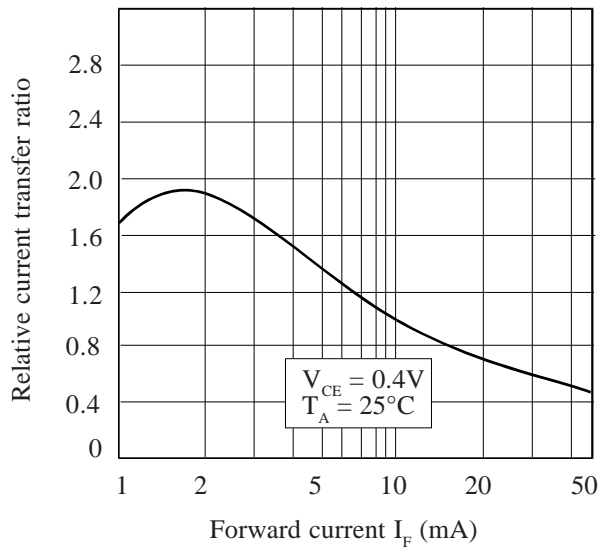
**Relative Current Transfer Ratio vs. Ambient Temperature**



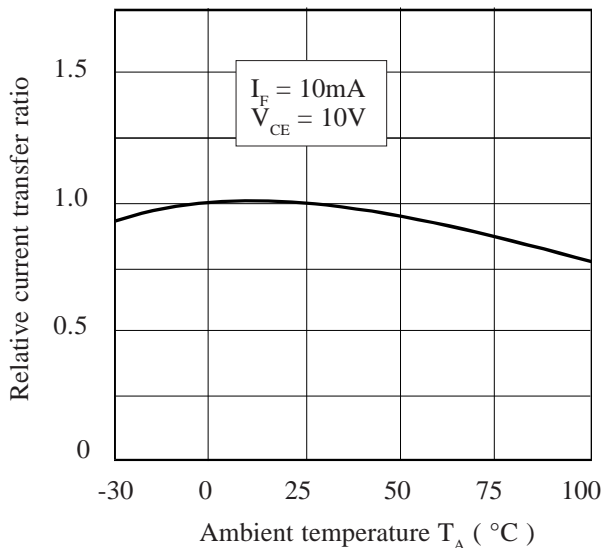
**Forward Current vs. Ambient Temperature**



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



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



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

