

ABSOLUTE MAXIMUM RATINGS					
PARAMETER	TEST CONDITION	PART	SYMBOL	VALUE	UNIT
INPUT					
Peak reverse voltage			$V_R$	3.0	V
Forward continuous current			$I_F$	60	mA
Power dissipation			$P_{diss}$	100	mW
Derate linearly from 55 %				1.33	mW/°C
OUTPUT					
Collector emitter breakdown voltage			$BV_{CEO}$	20	V
Emitter collector breakdown voltage			$BV_{ECO}$	5.0	V
Collector base breakdown voltage			$BV_{CBO}$	70	V
Power dissipation			$P_{diss}$	150	mW
Derate linearly from 25 °C				2.0	mW/°C
COUPLER					
Isolation test voltage	$t = 1.0 \text{ s}$		$V_{ISO}$	5300	$V_{RMS}$
Isolation resistance	$V_{IO} = 500 \text{ V}, T_{amb} = 25 \text{ °C}$		$R_{IO}$	$\geq 10^{12}$	$\Omega$
	$V_{IO} = 500 \text{ V}, T_{amb} = 100 \text{ °C}$		$R_{IO}$	$\geq 10^{11}$	$\Omega$
Total package dissipation		IL74	$P_{tot}$	200	mW
		ILD74	$P_{tot}$	400	mW
		ILQ74	$P_{tot}$	500	mW
Derate linearly from 25 °C		IL74		2.7	mW/°C
		ILD74		5.33	mW/°C
		ILQ74		6.67	mW/°C
Creepage distance				$\geq 7.0$	mm
Clearance distance				$\geq 7.0$	mm
Storage temperature			$T_{stg}$	- 55 to + 150	°C
Operating temperature			$T_{amb}$	- 55 to + 100	°C
Lead soldering time at 260 °C				10	s

## Note

$T_{amb} = 25 \text{ °C}$ , unless otherwise specified.

Stresses in excess of the absolute maximum ratings can cause permanent damage to the device. Functional operation of the device is not implied at these or any other conditions in excess of those given in the operational sections of this document. Exposure to absolute maximum ratings for extended periods of the time can adversely affect reliability.

ELECTRICAL CHARACTERISTICS						
PARAMETER	TEST CONDITION	SYMBOL	MIN.	TYP.	MAX.	UNIT
INPUT						
Forward voltage	$I_F = 20 \text{ mA}$	$V_F$		1.3	1.5	V
Reverse current	$V_R = 3.0 \text{ V}$	$I_R$		0.1	100	$\mu\text{A}$
Capacitance	$V_R = 0 \text{ V}$	$C_O$		25		pF
OUTPUT						
Collector emitter breakdown voltage	$I_C = 1.0 \text{ mA}$	$BV_{CEO}$	20	50		V
Collector emitter leakage current	$V_{CE} = 5.0 \text{ V}, I_F = 0 \text{ A}$	$I_{CEO}$		5.0	500	nA
Capacitance collector emitter	$V_{CE} = 0 \text{ V}, f = 1.0 \text{ Hz}$	$C_{CE}$		10		pF
COUPLER						
Saturation voltage, collector emitter	$I_C = 2.0 \text{ mA}, I_F = 16 \text{ mA}$	$V_{CEsat}$		0.3	0.5	V
Resistance (input to output)		$R_{IO}$		100		$G\Omega$
Capacitance (input to output)		$C_{IO}$		0.5		pF

## Note

$T_{amb} = 25 \text{ °C}$ , unless otherwise specified.

Minimum and maximum values are testing requirements. Typical values are characteristics of the device and are the result of engineering evaluation. Typical values are for information only and are not part of the testing requirements.



### CURRENT TRANSFER RATIO

PARAMETER	TEST CONDITION	SYMBOL	MIN.	TYP.	MAX.	UNIT
DC current transfer ratio	$I_F = 16 \text{ mA}$ , $V_{CE} = 5.0 \text{ V}$	$CTR_{DC}$	12.5	35		%

### SWITCHING CHARACTERISTICS

PARAMETER	TEST CONDITION	SYMBOL	MIN.	TYP.	MAX.	UNIT
Switching times	$R_L = 100 \Omega$ , $V_{CE} = 10 \text{ V}$ , $I_C = 2.0 \text{ mA}$	$t_{on}$ , $t_{off}$		3.0		$\mu\text{s}$

### TYPICAL CHARACTERISTICS

$T_{amb} = 25^\circ\text{C}$ , unless otherwise specified

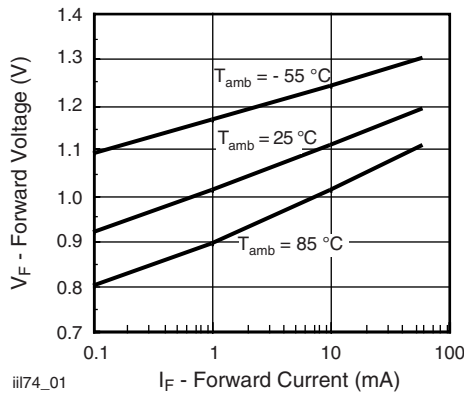


Fig. 1 - Forward Voltage vs. Forward Current

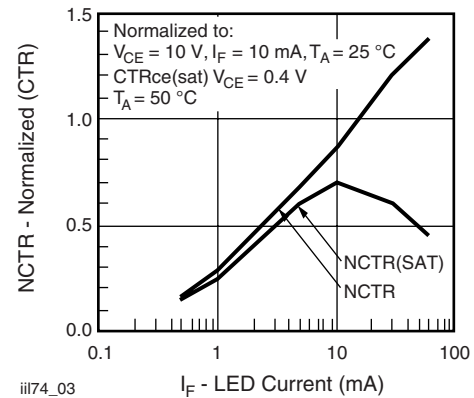


Fig. 3 - Normalized Non-Saturated and Saturated CTR vs. LED Current

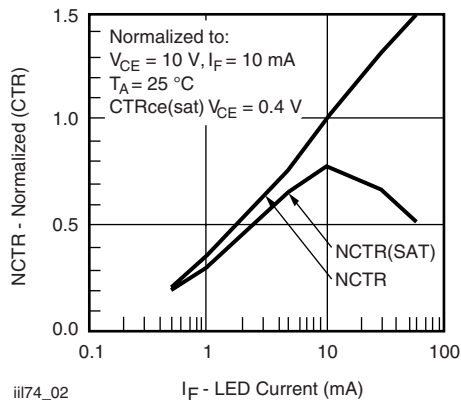


Fig. 2 - Normalized Non-Saturated and Saturated CTR vs. LED Current

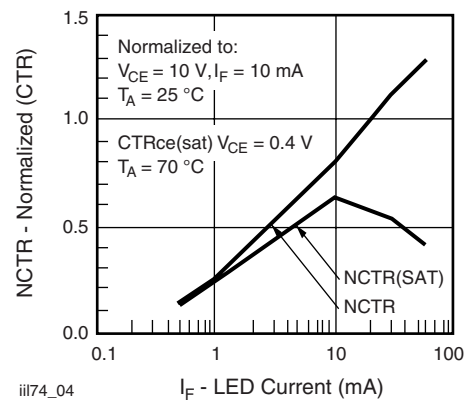


Fig. 4 - Normalized Non-Saturated and Saturated CTR vs. LED Current

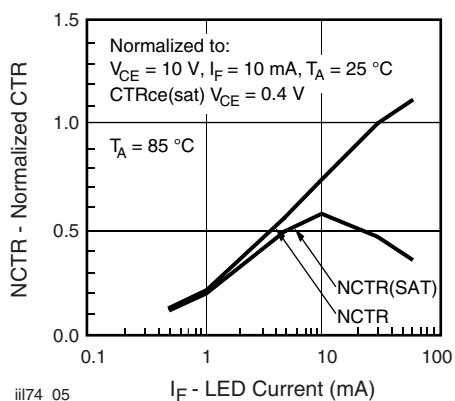


Fig. 5 - Normalized Non-Saturated and Saturated CTR vs. LED Current

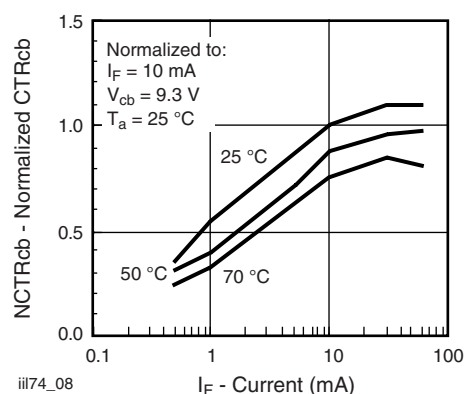


Fig. 8 - Normalized  $CTR_{cb}$  vs. LED Current and Temperature

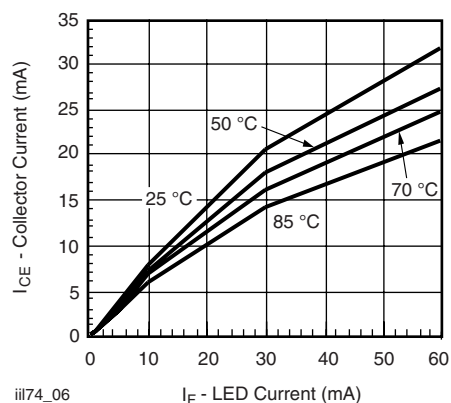


Fig. 6 - Collector Emitter Current vs. Temperature and LED Current

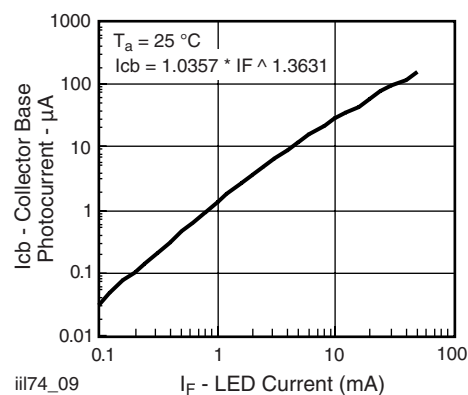


Fig. 9 - Collector Base Photocurrent vs. LED Current

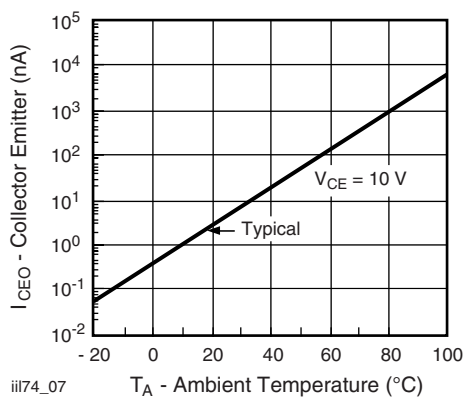


Fig. 7 - Collector Emitter Leakage Current vs. Temperature

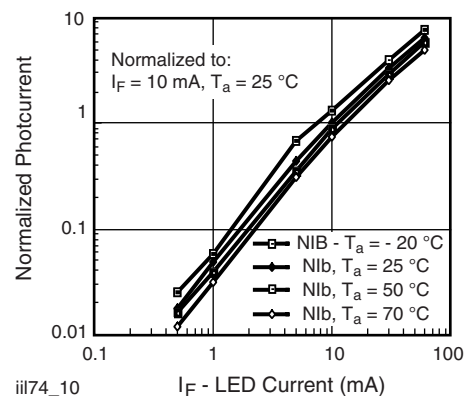


Fig. 10 - Normalized Photocurrent vs.  $I_F$  and Temperature

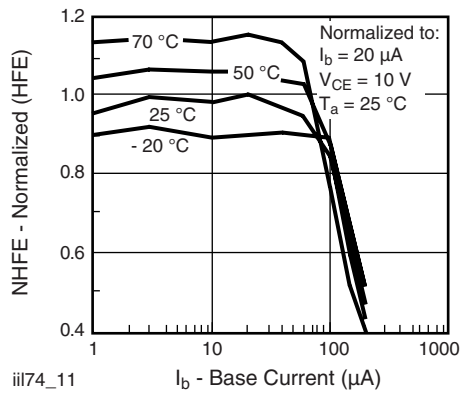


Fig. 11 - Normalized Non-Saturated  $h_{FE}$  vs. Base Current and Temperature

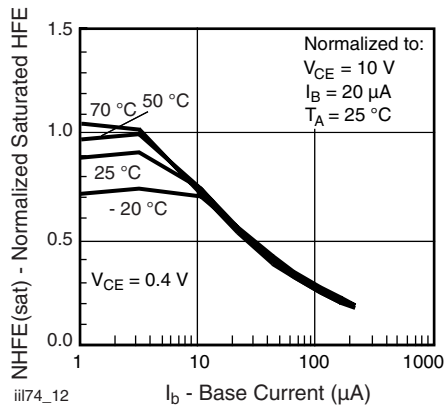


Fig. 12 - Normalized Saturated  $h_{FE}$  vs. Base Current and Temperature

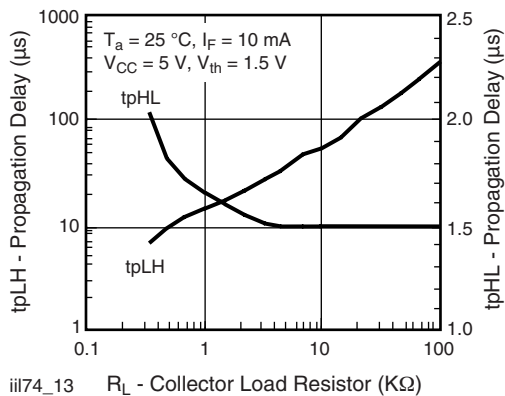


Fig. 13 - Propagation Delay vs. Collector Load Resistor

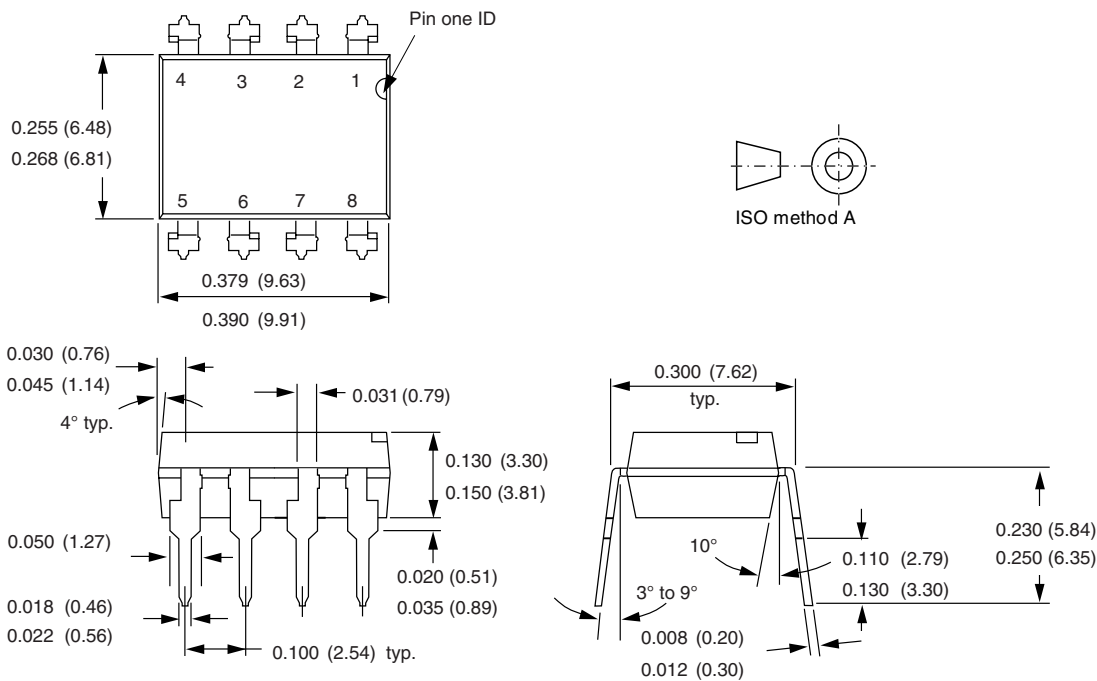
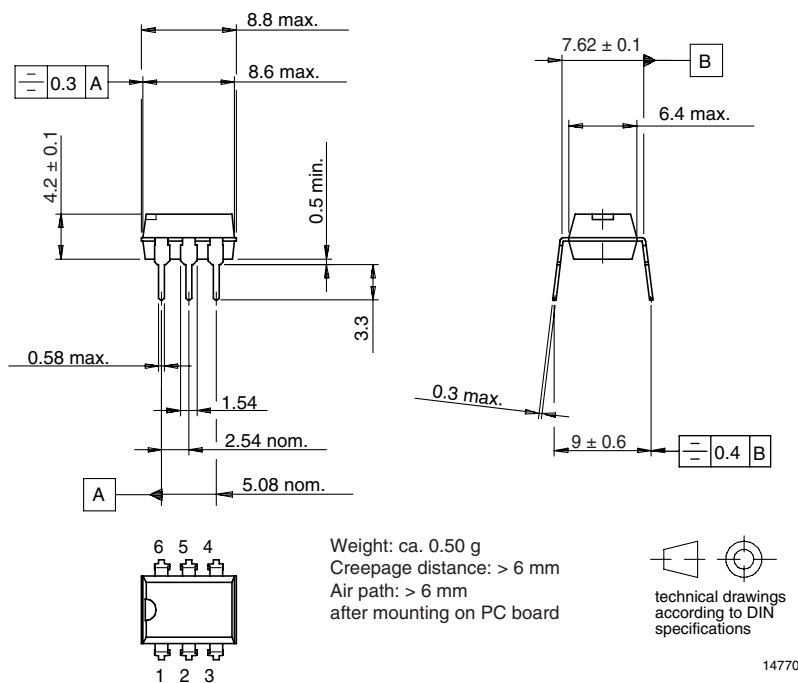
# IL74/ILD74/ILQ74

Vishay Semiconductors

Optocoupler, Phototransistor Output  
(Single, Dual, Quad Channel)



## PACKAGE DIMENSIONS in inches (millimeters)

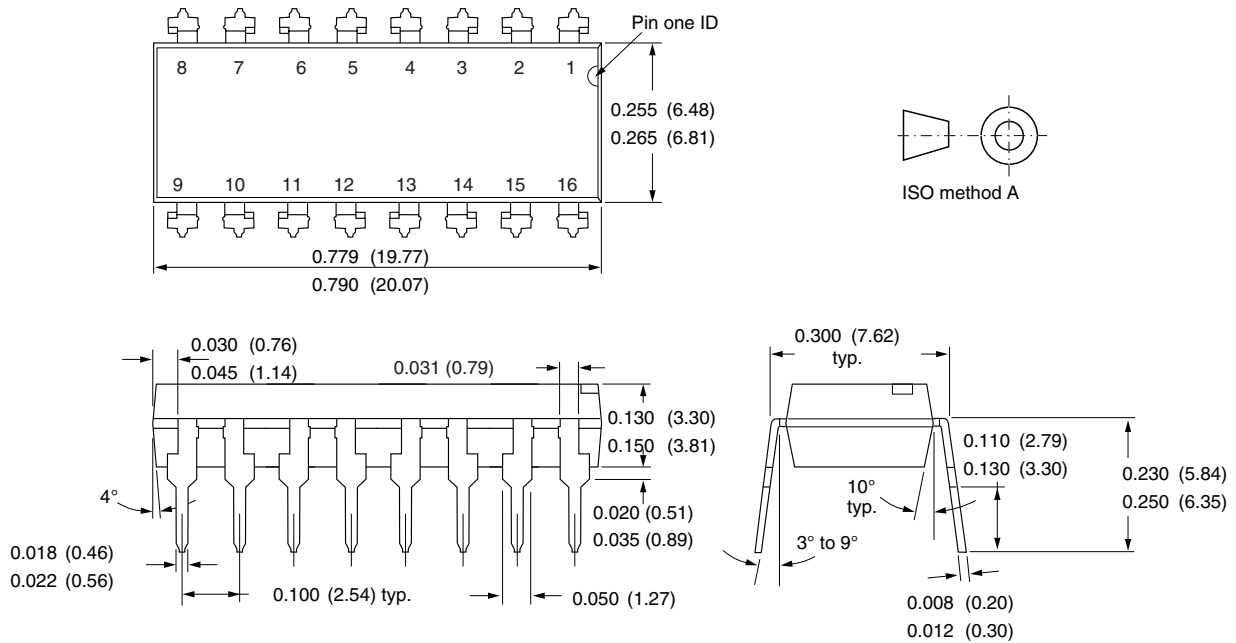




Optocoupler, Phototransistor Output  
(Single, Dual, Quad Channel)

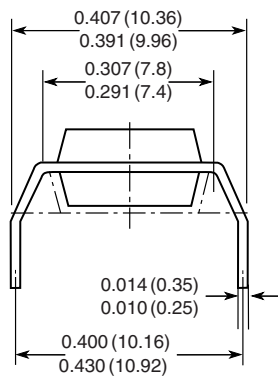
IL74/ILD74/ILQ74

Vishay Semiconductors

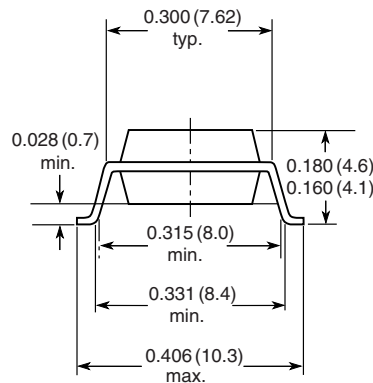


i178007

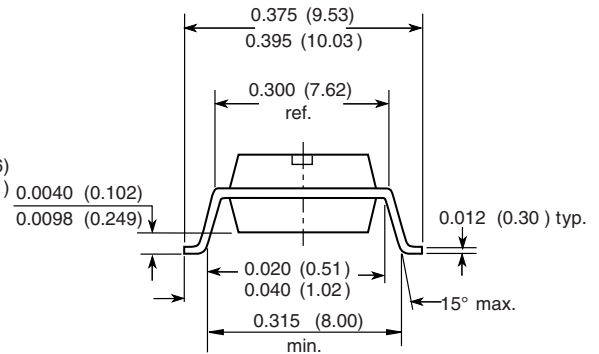
Option 6



Option 7



Option 9



18450

**OZONE DEPLETING SUBSTANCES POLICY STATEMENT**

It is the policy of Vishay Semiconductor GmbH to

1. Meet all present and future national and international statutory requirements.
2. Regularly and continuously improve the performance of our products, processes, distribution and operating systems with respect to their impact on the health and safety of our employees and the public, as well as their impact on the environment.

It is particular concern to control or eliminate releases of those substances into the atmosphere which are known as ozone depleting substances (ODSs).

The Montreal Protocol (1987) and its London Amendments (1990) intend to severely restrict the use of ODSs and forbid their use within the next ten years. Various national and international initiatives are pressing for an earlier ban on these substances.

Vishay Semiconductor GmbH has been able to use its policy of continuous improvements to eliminate the use of ODSs listed in the following documents.

1. Annex A, B and list of transitional substances of the Montreal Protocol and the London Amendments respectively.
2. Class I and II ozone depleting substances in the Clean Air Act Amendments of 1990 by the Environmental Protection Agency (EPA) in the USA.
3. Council Decision 88/540/EEC and 91/690/EEC Annex A, B and C (transitional substances) respectively.

Vishay Semiconductor GmbH can certify that our semiconductors are not manufactured with ozone depleting substances and do not contain such substances.

We reserve the right to make changes to improve technical design  
and may do so without further notice.

Parameters can vary in different applications. All operating parameters must be validated for each customer application by the customer. Should the buyer use Vishay Semiconductors products for any unintended or unauthorized application, the buyer shall indemnify Vishay Semiconductors against all claims, costs, damages, and expenses, arising out of, directly or indirectly, any claim of personal damage, injury or death associated with such unintended or unauthorized use.

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