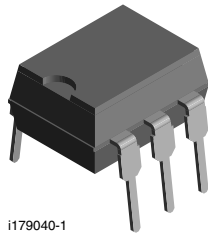
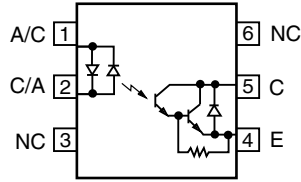


# Optocoupler, Photodarlington Output, AC Input, Internal R<sub>BE</sub>



i179040-1



## FEATURES

- Internal R<sub>BE</sub> for better stability
- BV<sub>CEO</sub> ≥ 60 V
- Isolation test voltage, 5300 V<sub>RMS</sub>
- AC or polarity insensitive inputs
- No base connection
- High insulation resistance, 10<sup>11</sup> Ω typical
- Standard plastic DIP package
- Material categorization: For definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)


**RoHS**  
COMPLIANT

## DESCRIPTION

The IL766B is a bidirectional input, optically coupled isolator consisting of two gallium arsenide infrared emitters and a silicon photodarlington sensor.

## AGENCY APPROVALS

- UL1577, File No. E52744 system code H or J, double protection
- BSI IEC 60950; IEC 60065

ORDERING INFORMATION			
I	L	7	6
6	B	-	#
X	0	0	#
PART NUMBER		CTR BIN	PACKAGE OPTION
		DIP-6 7.62 mm	DIP-6, 400 mil 10.16 mm
AGENCY CERTIFIED/PACKAGE	CTR (%)		
VDE, UL, BSI, CSA	> 400		> 900
DIP-6	IL766B-1	IL766B-2	
DIP-6, 400 mil, option 6	-	IL766B-2X006	

### Note

- For additional information on the available options refer to option information.

ABSOLUTE MAXIMUM RATINGS (T <sub>amb</sub> = 25 °C, unless otherwise specified)				
PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
<b>INPUT</b>				
Forward continuous current		I <sub>F</sub>	60	mA
Power dissipation		P <sub>diss</sub>	200	mW
Derate linearly from 55 °C			2.6	mW/°C
<b>OUTPUT</b>				
Collector emitter breakdown voltage		BV <sub>CEO</sub>	60	V
Collector base breakdown voltage		BV <sub>CBO</sub>	70	V
Power dissipation		P <sub>diss</sub>	200	mW
Derate linearly from 25 °C			2.6	mW/°C
<b>COUPLER</b>				
UL isolation test voltage		V <sub>ISO</sub>	5300	V <sub>RMS</sub>
Total power dissipation	t = 1.0 s	P <sub>tot</sub>	250	mW
Derate linearly from 25 °C			3.3	mW/°C
Creepage			≥ 7	min
Clearance			≥ 7	min



ABSOLUTE MAXIMUM RATINGS ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified)				
PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
<b>COUPLER</b>				
Isolation resistance	$V_{IO} = 500\text{ V}$ , $T_{amb} = 25\text{ }^{\circ}\text{C}$	$R_{IO}$	$10^{12}$	$\Omega$
	$V_{IO} = 500\text{ V}$ , $T_{amb} = 100\text{ }^{\circ}\text{C}$	$R_{IO}$	$10^{11}$	$\Omega$
Storage temperature		$T_{stg}$	- 55 to + 150	$^{\circ}\text{C}$
Operating temperature		$T_{amb}$	- 55 to + 100	$^{\circ}\text{C}$
Lead soldering time at 260 $^{\circ}\text{C}$			10	s

**Note**

- 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 ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified)							
PARAMETER	TEST CONDITION	PART	SYMBOL	MIN.	TYP.	MAX.	UNIT
<b>INPUT</b>							
Forward voltage	$I_F = \pm 10\text{ mA}$		$V_F$		1.25	1.5	V
<b>OUTPUT</b>							
Collector emitter breakdown voltage	$I_C = 10\text{ mA}$ , $I_F = 0\text{ A}$		$BV_{CEO}$	60			V
Collector emitter leakage current	$V_{CE} = 10\text{ V}$ , $I_F = 0\text{ A}$		$I_{CEO}$		1.0	100	nA
<b>COUPLER</b>							
Collector emitter, saturation voltage	$I_C = \pm 10\text{ mA}$ , $I_F = \pm 10\text{ mA}$		$V_{CEsat}$			1.0	V

**Note**

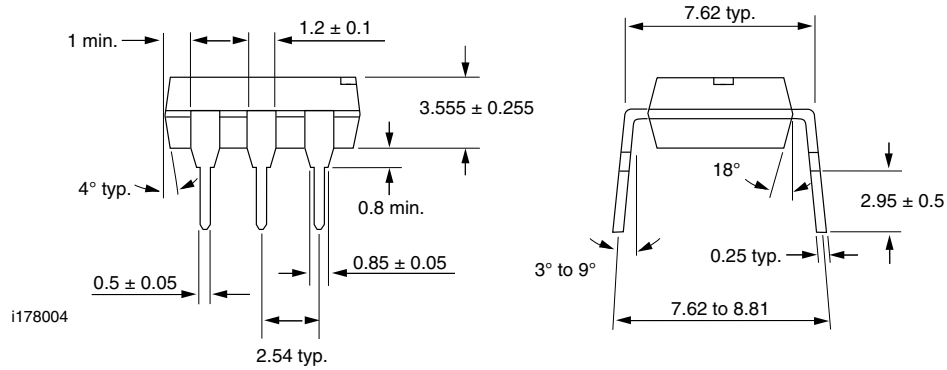
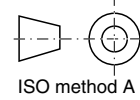
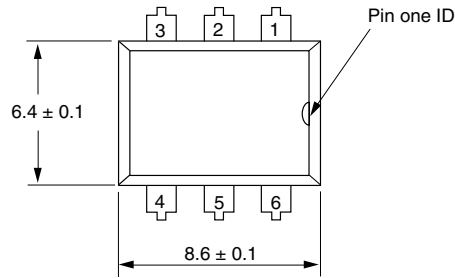
- Minimum and maximum values were tested requirements. Typical values are characteristics of the device and are the result of engineering evaluations. Typical values are for information only and are not part of the testing requirements.

CURRENT TRANSFER RATIO							
PARAMETER	TEST CONDITION	PART	SYMBOL	MIN.	TYP.	MAX.	UNIT
Saturation voltage, collector emitter	$I_F = \pm 1.0\text{ mA}$ , $V_{CE} = 5.0\text{ V}$	IL766B-1	CTR	400			%
	$I_F = \pm 0.5\text{ mA}$ , $V_{CE} = 5.0\text{ V}$	IL766B-2	CTR	900			%

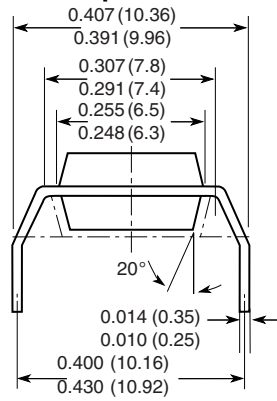
SWITCHING CHARACTERISTICS							
PARAMETER	TEST CONDITION	SYMBOL	MIN.	TYP.	MAX.	UNIT	
Turn-off time	$V_{CC} = 5.0\text{ V}$ , $I_F = \pm 2.0\text{ mA}$ , $R_L = 100\text{ }\Omega$		$t_{off}$		200	$\mu\text{s}$	



PACKAGE DIMENSIONS in inches (millimeters)



Option 6



18446



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