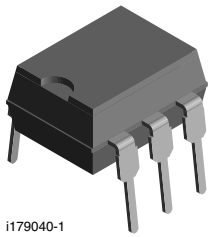
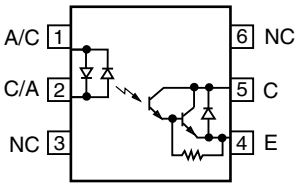
Optocoupler, Photodarlington Output, AC Input, Internal R_{BE}





FEATURES

- Internal R_{BE} for better stability
- $BV_{CEO} \geq 60$ V
- Isolation test voltage, 5300 V_{RMS}
- AC or polarity insensitive inputs
- No base connection
- High insulation resistance, 10^{11} Ω typical
- Standard plastic DIP package
- Material categorization: For definitions of compliance please see www.vishay.com/doc?99912

Pb-free

e3

RoHS COMPLIANT

DESCRIPTION

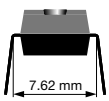
The IL766B is a bidirectional input, optically coupled isolator consisting of two gallium arsenide infrared emitters and a silicon photodarlington sensor.

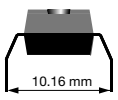
AGENCY APPROVALS

- 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			





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_{amb} = 25 °C, unless otherwise specified)

PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
INPUT				
Forward continuous current		I_F	60	mA
Power dissipation		P_{diss}	200	mW
Derate linearly from 55 °C			2.6	mW/°C
OUTPUT				
Collector emitter breakdown voltage		BV_{CEO}	60	V
Collector base breakdown voltage		BV_{CBO}	70	V
Power dissipation		P_{diss}	200	mW
Derate linearly from 25 °C			2.6	mW/°C
COUPLER				
UL isolation test voltage		V_{ISO}	5300	V_{RMS}
Total power dissipation	t = 1.0 s	P_{tot}	250	mW
Derate linearly from 25 °C			3.3	mW/°C
Creepage			≥ 7	min
Clearance			≥ 7	min

ABSOLUTE MAXIMUM RATINGS (T_{amb} = 25 °C, unless otherwise specified)				
PARAMETER	**TEST CONDITION**	**SYMBOL**	**VALUE**	**UNIT**
COUPLER				
Isolation resistance	V_{IO} = 500 V, T_{amb} = 25 °C	R_{IO}	10^{12}	Ω
	V_{IO} = 500 V, T_{amb} = 100 °C	R_{IO}	10^{11}	Ω
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

- 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 °C, unless otherwise specified)							
PARAMETER	**TEST CONDITION**	**PART**	**SYMBOL**	**MIN.**	**TYP.**	**MAX.**	**UNIT**
INPUT							
Forward voltage	I_F = ± 10 mA		V_F		1.25	1.5	V
OUTPUT							
Collector emitter breakdown voltage	I_C = 10 mA, I_F = 0 A		BV_{CEO}	60			V
Collector emitter leakage current	V_{CE} = 10 V, I_F = 0 A		I_{CEO}		1.0	100	nA
COUPLER							
Collector emitter, saturation voltage	I_C = ± 10 mA, I_F = ± 10 mA		V_{CEsat}			1.0	V

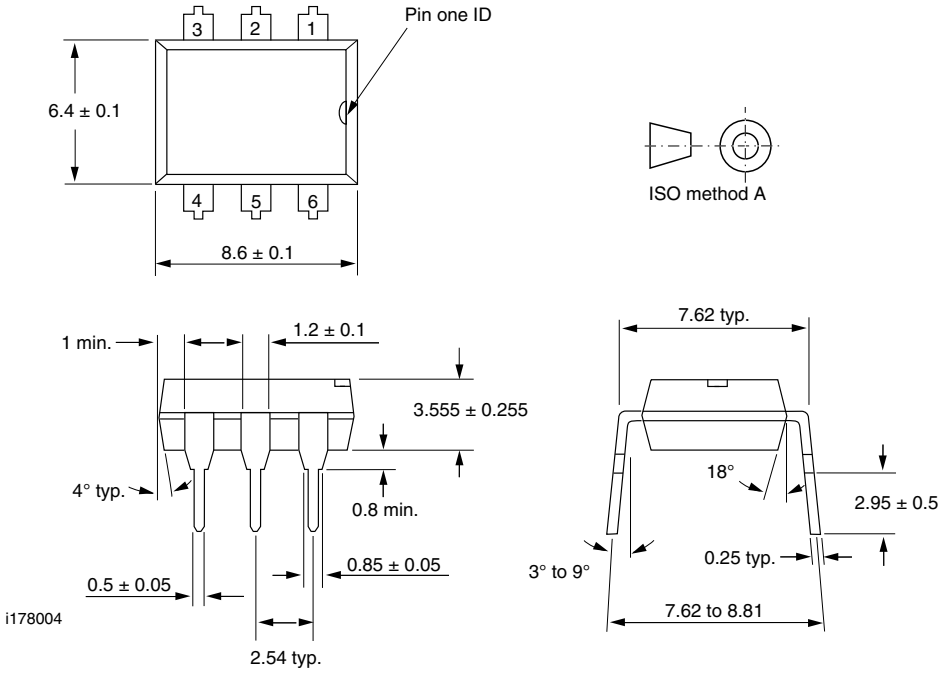
Note

- Minimum and maximum values were tested requierements. 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.

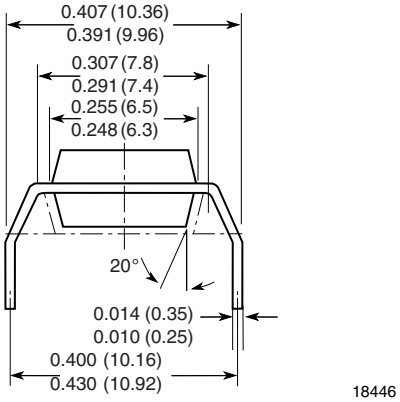
CURRENT TRANSFER RATIO							
PARAMETER	**TEST CONDITION**	**PART**	**SYMBOL**	**MIN.**	**TYP.**	**MAX.**	**UNIT**
Saturation voltage, collector emitter	I_F = ± 1.0 mA, V_{CE} = 5.0 V	IL766B-1	CTR	400			%
	I_F = ± 0.5 mA, V_{CE} = 5.0 V	IL766B-2	CTR	900			%

SWITCHING CHARACTERISTICS						
PARAMETER	**TEST CONDITION**	**SYMBOL**	**MIN.**	**TYP.**	**MAX.**	**UNIT**
Turn-off time	V_{CC} = 5.0 V, I_F = ± 2.0 mA, R_L = 100 Ω	t_{off}		200		µs

PACKAGE DIMENSIONS in inches (millimeters)



Option 6



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