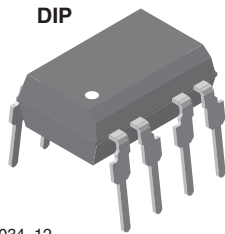




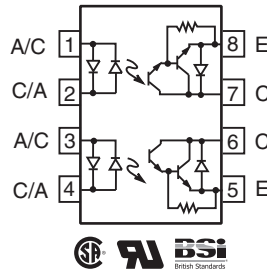
**THE DATASHEET OF
ILD766-1**



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



i179034_12



FEATURES

- Internal R_{BE} for better stability
- $BV_{CEO} > 60\text{ V}$
- AC or polarity insensitive inputs
- Built-in reverse polarity input protection
- Industry standard DIP package
- Compliant to RoHS Directive 2002/95/EC and in accordance to WEEE 2002/96/EC


RoHS
COMPLIANT

APPLICATIONS

- Designed for applications requiring detection or monitoring of AC signals

AGENCY APPROVALS

- UL1577, file no. E52744 system code H or J, double protection
- CSA 93751
- BSI IEC 60950; IEC 60065

ORDERING INFORMATION			
<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="border: 1px solid black; padding: 2px 5px;">I</div> <div style="border: 1px solid black; padding: 2px 5px;">L</div> <div style="border: 1px solid black; padding: 2px 5px;">D</div> <div style="border: 1px solid black; padding: 2px 5px;">7</div> <div style="border: 1px solid black; padding: 2px 5px;">6</div> <div style="border: 1px solid black; padding: 2px 5px;">6</div> <div style="margin: 0 10px;">-</div> <div style="border: 1px solid black; padding: 2px 5px;">#</div> </div> <p style="text-align: center; margin-top: 5px;">PART NUMBER CTR BIN</p>			
AGENCY CERTIFIED/PACKAGE	CTR (%)		
	2 mA	1 mA	
UL, CSA, BSI	≥ 500	≥ 500	
DIP-8	ILD766-1	ILD766-2	

Note

- Additional options may be possible, please contact sales office.

ABSOLUTE MAXIMUM RATINGS ($T_{amb} = 25\text{ °C}$, unless otherwise specified)				
PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
INPUT				
Forward current		I_F	60	mA
Power dissipation		P_{diss}	90	mW
Derate linearly	from 25 °C		1.2	mW/°C
OUTPUT				
Collector emitter breakdown voltage		BV_{CEO}	60	V
Collector base breakdown voltage		BV_{CBO}	70	V
Power dissipation		P_{diss}	100	mW
Derate linearly	from 25 °C		1.33	mW/°C



ABSOLUTE MAXIMUM RATINGS ($T_{amb} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified)				
PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
COUPLER				
Total dissipation		P_{tot}	400	mW
Derate linearly	from 25 °C		5.3	mW/°C
Isolation test voltage	$t = 1\text{ s}$	V_{ISO}	5300	V_{RMS}
Isolation resistance	$T_{amb} = 25\text{ }^{\circ}\text{C}$	R_{IO}	$\geq 10^{12}$	Ω
	$T_{amb} = 100\text{ }^{\circ}\text{C}$	R_{IO}	$\geq 10^{11}$	Ω
Creepage distance			≥ 7.0	mm
Clearance distance			≥ 7.0	mm
Comparative tracking index per DIN IEC 112/VDE 0303, part 1		CTI	175	
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 ($T_{amb} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified)						
PARAMETER	TEST CONDITION	SYMBOL	MIN.	TYP.	MAX.	UNIT
INPUT						
Forward voltage	$I_F = \pm 10\text{ mA}$	V_F		1.2	1.5	V
OUTPUT						
Collector emitter breakdown voltage	$I_C = 1.0\text{ mA}$	BV_{CEO}	60	75		V
Collector base breakdown voltage	$I_C = 10\text{ }\mu\text{A}$	BV_{CBO}	60	90		V
Collector emitter leakage current	$V_{CE} = 10\text{ V}$	I_{CEO}		10	100	nA
COUPLER						
Collector emitter saturation voltage	$I_F = \pm 10\text{ mA}, I_C = 10\text{ mA}$	V_{CEsat}			1.0	V

Note

- 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 ($T_{amb} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified)						
PARAMETER	TEST CONDITION	SYMBOL	MIN.	TYP.	MAX.	UNIT
DC current transfer ratio	$V_{CE} = 5.0\text{ V}, I_F = \pm 2\text{ mA}$	CTR_{DC}	500			%

SWITCHING CHARACTERISTICS ($T_{amb} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified)						
PARAMETER	TEST CONDITION	SYMBOL	MIN.	TYP.	MAX.	UNIT
Rise time	$V_{CC} = 10\text{ V}, I_F = \pm 2.0\text{ mA}, R_L = 100\text{ }\Omega$	t_r		100		μs
Fall time		t_f		100		

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

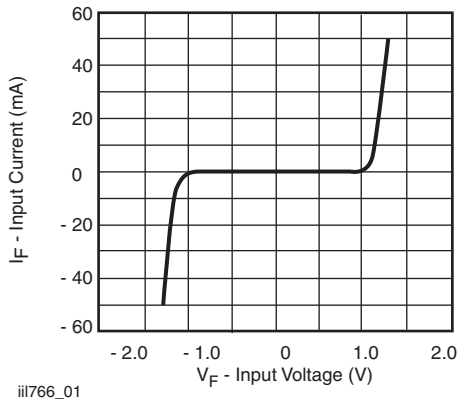


Fig. 1 - Input Characteristics

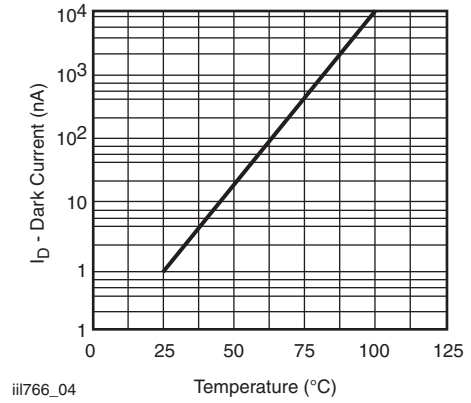


Fig. 4 - I_{CEO} at $V_{CE} = 10\text{ V}$ vs. Temperature

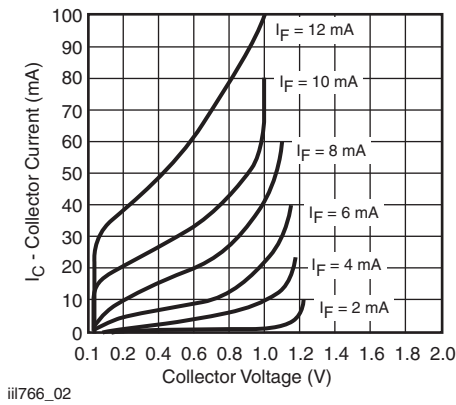


Fig. 2 - Transistor Current vs. Voltage

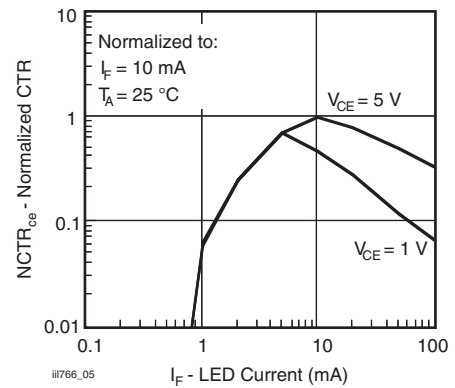


Fig. 5 - Normalized CTR vs. Forward Current

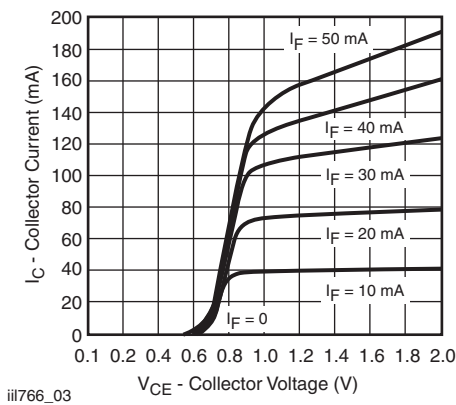


Fig. 3 - Transistor Output Current vs. Voltage

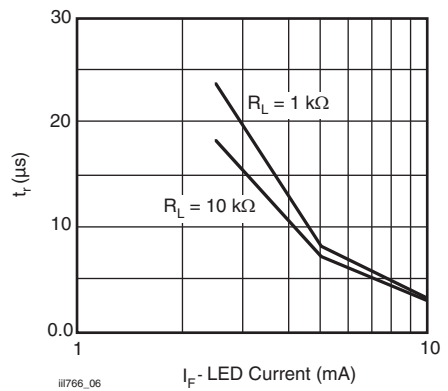
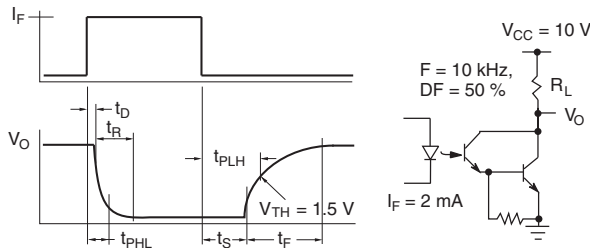
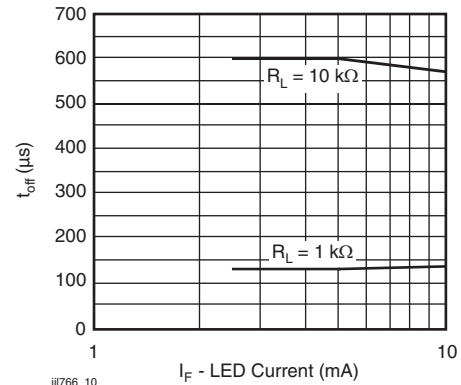


Fig. 6 - t_r vs. Forward Current



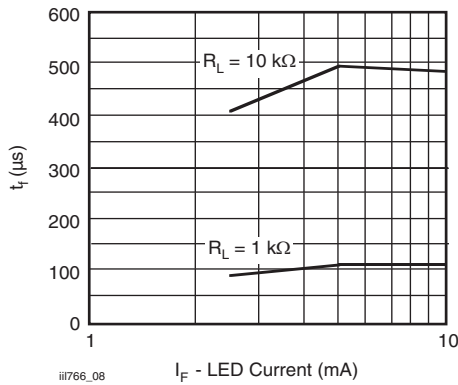
iii766_07

Fig. 7 - Saturated Switching Characteristics Measurements-Schematic and Waveform



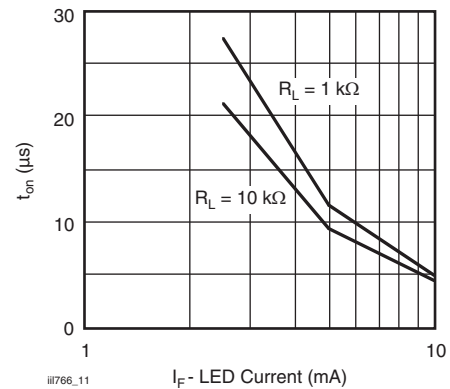
iii766_10

Fig. 10 - t_{off} vs. Forward Current



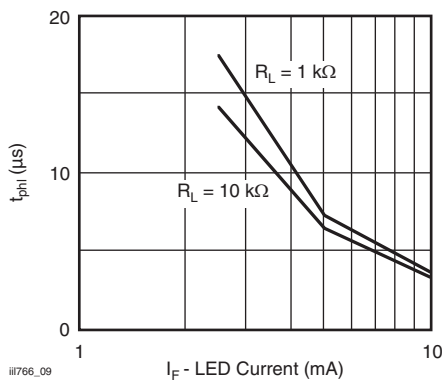
iii766_08

Fig. 8 - t_{fall} vs. Forward Current



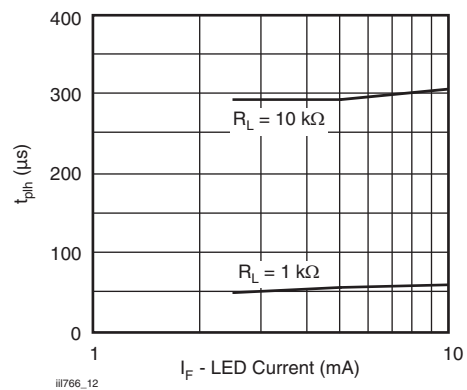
iii766_11

Fig. 11 - t_{on} vs. Forward Current



iii766_09

Fig. 9 - t_{phl} vs. Forward Current

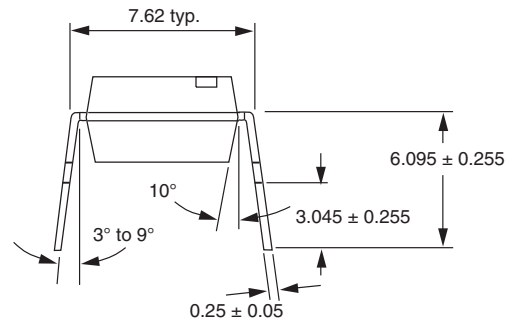
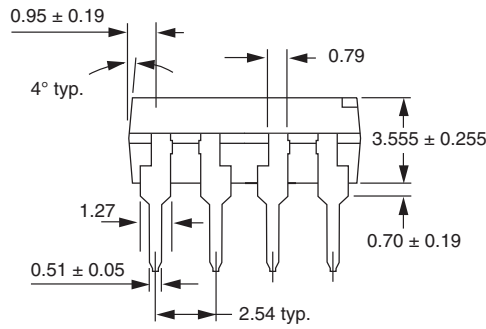
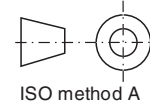
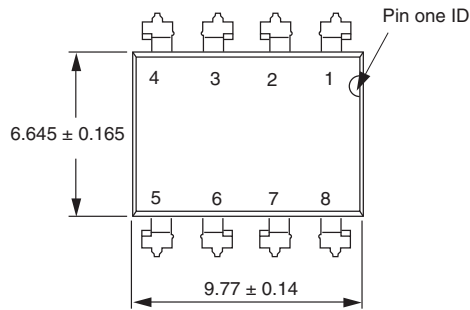


iii766_12

Fig. 12 - t_{plh} vs. Forward Current

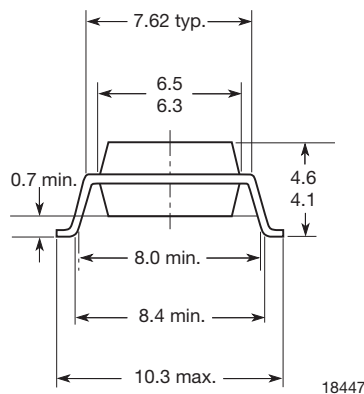


PACKAGE DIMENSIONS in millimeters



i178006

Option 7





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