

## FEATURES

- **Very High Current Transfer Ratio**  
IL766B-1: 400% at  $I_F=1\text{ mA}$ ,  $V_{CE}=5\text{ V}$   
IL766B-2: 900% at  $I_F=0.5\text{ mA}$ ,  $V_{CE}=5\text{ V}$
- **Internal  $R_{BE}$  for Better Stability**
- **$BV_{CEO} > 60\text{ V}$**
- **Isolation Test Voltage, 5300 VAC<sub>RMS</sub>**
- **AC or Polarity Insensitive Inputs**
- **No Base Connection**
- **High Insulation Resistance,  $10^{11}\Omega$  Typical**
- **Standard Plastic DIP Package**
- **Underwriters Lab File #E52744**

## DESCRIPTION

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

### Maximum Ratings (at 25°C)

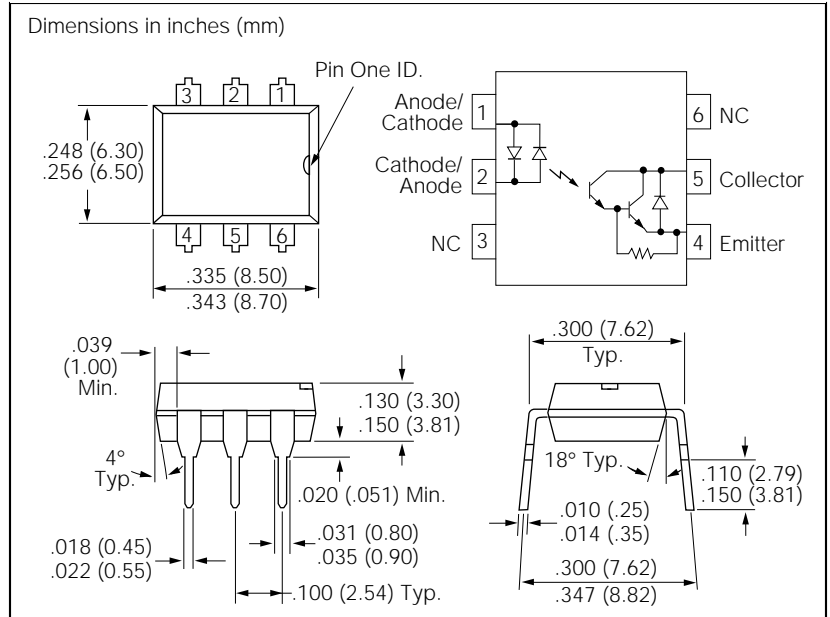
**Emitter (Drive Circuit)**  
 Continuous Forward Current .....60 mA  
 Power Dissipation at 25°C.....200 mW  
 Derate Linearly from 55°C .....2.6 mW/°C

### Detector (Load Circuit)

Collector-Emitter Breakdown Voltage..... 60 V  
 Collector-Base Breakdown Voltage..... 70 V  
 Power Dissipation at 25°C Ambient .....200 mW  
 Derate Linearly from 25°C .....2.6 mW/°C

### Package

UL Isolation Test Voltage  
 (t=1 sec.) .....5300 VAC<sub>RMS</sub>  
 Dissipation at 25°C.....250 mW  
 Derate Linearly from 25°C .....3.3 mW/°C  
 Creepage ..... 7 min mm  
 Clearance..... 7 min mm  
 Isolation Resistance  
 $V_{IO}=500\text{ V}$ ,  $T_A=25^\circ\text{C}$  .....  $10^{12}\Omega$   
 $V_{IO}=500\text{ V}$ ,  $T_A=100^\circ\text{C}$  .....  $10^{11}\Omega$   
 Storage Temperature..... -55°C to +150°C  
 Operating Temperature .....-55°C to +100°C  
 Lead Soldering Time at 260°C ..... 10 sec.



## Characteristics ( $T_A=25^\circ\text{C}$ )

	Symbol	Min.	Typ.	Max.	Unit	Condition
<b>Emitter</b>						
Forward Voltage	$V_F$		1.25	1.5	V	$I_F=\pm 10\text{ mA}$
<b>Detector</b>						
Breakdown Voltage						
Collector-Emitter	$BV_{CEO}$	60			V	$I_C=1\text{ mA}$ , $I_F=0$
Leakage Current						
Collector-Emitter	$I_{CEO}$		1.0	100	nA	$V_{CE}=10\text{ V}$ , $I_F=0$
<b>Package</b>						
Current Transfer Ratio	CTR					
IL766B-1		400			%	$I_F=\pm 1\text{ mA}$ , $V_{CE}=5\text{ V}$
IL766B-2		900			%	$I_F=\pm 0.5\text{ mA}$ , $V_{CE}=5\text{ V}$
Saturation Voltage, Collector-Emitter	$V_{CEsat}$			1.0	V	$I_C=10\text{ mA}$ , $I_F=\pm 10\text{ mA}$
Turn-On, Turn-Off Time	$t_{on}$ , $t_{off}$		200		$\mu\text{s}$	$V_{CC}=5\text{ V}$ , $I_F=\pm 2\text{ mA}$ , $R_L=100\Omega$