

FEATURES

- **Very High Current Transfer Ratio**
IL766B-1: 400% at $I_F=1.0$ mA, $V_{CE}=5.0$ V
IL766B-2: 900% at $I_F=0.5$ mA, $V_{CE}=5.0$ V
- **Internal R_{BE} for Better Stability**
- **$BV_{CEO} > 60$ V**
- **Isolation Test Voltage, 5300 V_{RMS}**
- **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

($t=1.0$ sec.) 5300 V_{RMS}
Dissipation at 25°C 250 mW
Derate Linearly from 25°C 3.3 mW/°C
Creepage ≥ 7.0 min
Clearance ≥ 7.0 min
Isolation Resistance

$V_{IO}=500$ V, $T_A=25^\circ\text{C}$ $10^{12}\Omega$

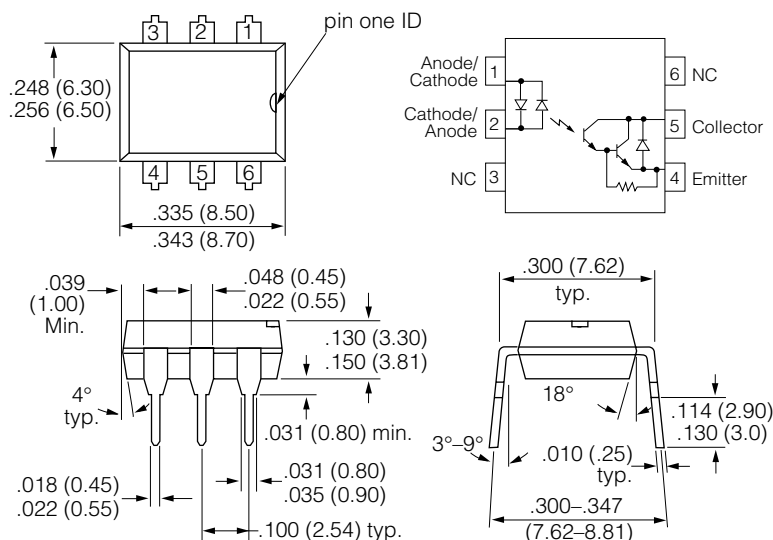
$V_{IO}=500$ V, $T_A=100^\circ\text{C}$ $10^{11}\Omega$

Storage Temperature -55°C to $+150^\circ\text{C}$

Operating Temperature -55°C to $+100^\circ\text{C}$

Lead Soldering Time at 260°C 10 sec.

Dimensions in inches (mm)



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

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
Emitter						
Forward Voltage	V_F	—	1.25	1.5	V	$I_F=\pm 10$ mA
Detector						
Breakdown Voltage, Collector-Emitter	BV_{CEO}	60	—	—	V	$I_C=1.0$ mA $I_F=0$
Leakage Current	—	—	—	—	—	—
Collector-Emitter	I_{CEO}	—	1.0	100	nA	$V_{CE}=10$ V $I_F=0$
Package						
Current Transfer Ratio	IL766B-1	CTR	400	—	—	% $I_F=\pm 1.0$ mA $V_{CE}=5.0$ V
	IL766B-2	—	900	—	—	$I_F=\pm 0.5$ mA $V_{CE}=5.0$ V
Saturation Voltage, Collector-Emitter	V_{CEsat}	—	—	1.0	V	$I_C=10$ mA $I_F=\pm 10$ mA
Turn-On, Turn-Off Time	t_{on}, t_{off}	—	200	—	μs	$V_{CC}=5.0$ V $I_F=\pm 2.0$ mA $R_L=100\Omega$