IL766B

Bidirectional Input Optocoupler

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)

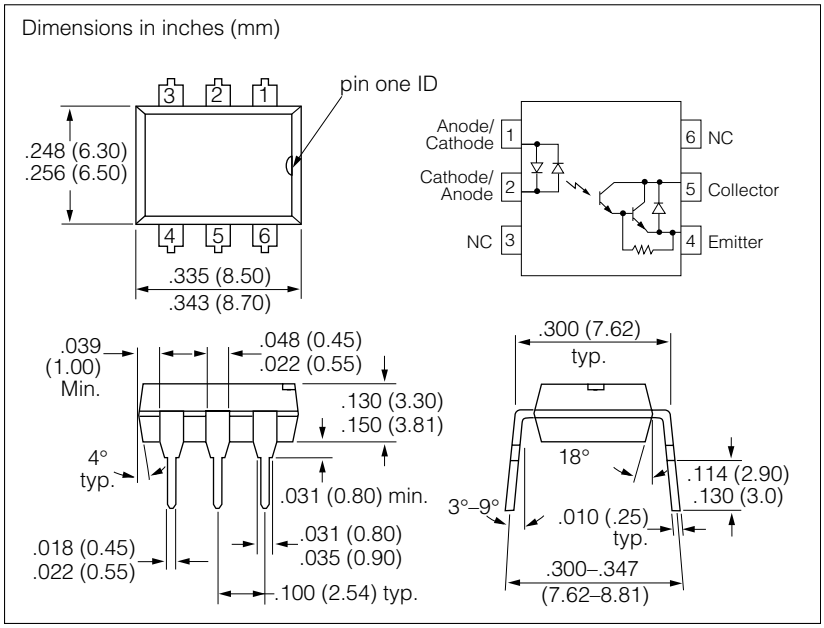
Continuous Forward Current .....60 mA
Power Dissipation at 25°C.....200 mW
Derate Linearly from 55°C.....2.6 mW/°C

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°C..... $10^{12}\Omega$
V_{IO}=500 V, T_A=100°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°C

Parameter		Symbol	Min.	Typ.	Max.	Unit	Condition
Emitter							
Forward Voltage		V_F	—	1.25	1.5	V	I_F=±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=±1.0 mA V_{CE}=5.0 V
	IL766B-2	—	900	—	—	—	I_F=±0.5 mA V_{CE}=5.0 V
Saturation Voltage, Collector-Emitter		V_{CEsat}	—	—	1.0	V	I_C=10 mA I_F=±10 mA
Turn-On, Turn-Off Time		t_{on}, t_{off}	—	200	—	µs	V_{CC}=5.0 V I_F=±2.0 mA R_L=100 Ω