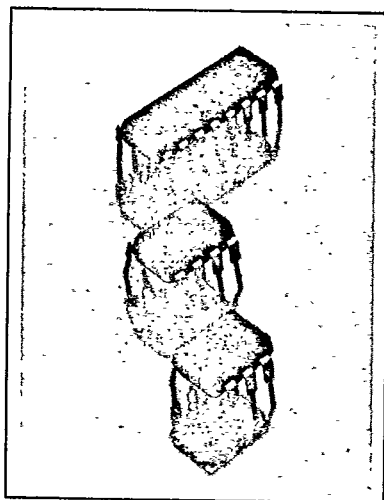


SIEMENS

IL30/IL31/IL55 SINGLE CHANNEL ILD30/ILD31/ILD55 DUAL CHANNEL ILQ30/ILQ31/ILQ55 QUAD CHANNEL

**PHOTODARLINGTON
T-41-85 OPTOCOUPLER**


FEATURES

- 125 mA Load Current Rating
- Fast Rise Time—10 μ s
- Fast Fall Time—35 μ s
- Current Transfer Ratio
100% Min.
200% Min. (IL31, ILD31, ILQ31 only)
- Solid State Reliability
- Standard Dip Package
- Underwriter Lab Approval #E52744
- VDE Approvals 0883/6.80,
0804/1.83

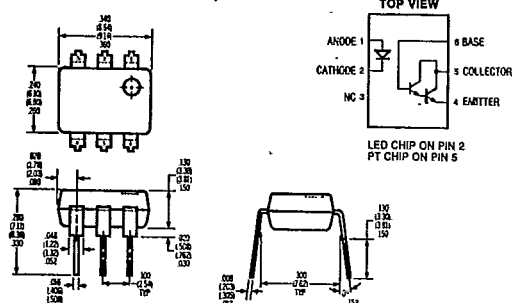
DESCRIPTION

IL30/IL31/IL55, ILD30/ILD31/ILD55 and ILQ30/ILQ31/ILQ55 are optically coupled isolators employing a Gallium Arsenide infrared emitter and a silicon photodarlington sensor. Switching can be accomplished while maintaining a high degree of isolation between driving and load circuits, with no crosstalk between channels. They can be used to replace reed and mercury relays with advantages of long life, high speed switching and elimination of magnetic fields.

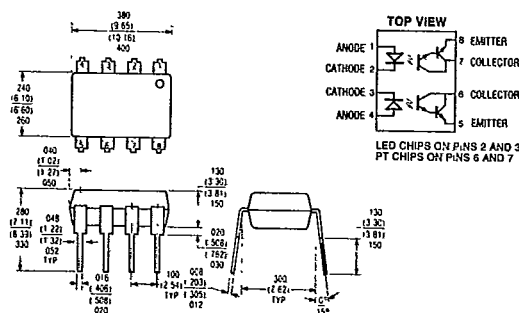
The IL30/IL31/IL55 are equivalent to MCA2-30/MCA2-31/MCA2-55. ILD30/ILD31/ILD55 are designed to reduce board space requirements in high density applications.

Package Dimensions in Inches (mm)

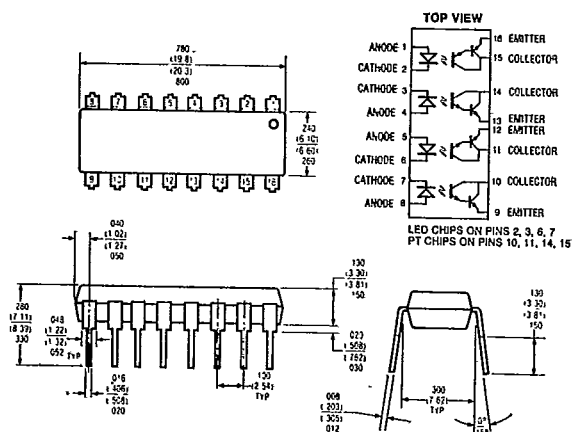
IL30/IL31/IL55 (Single Channel)



ILD30/ILD31/ILD55 (Dual Channel)



ILQ30/ILQ31/ILQ55 (Quad Channel)



Maximum Ratings**Gallium Arsenide LED (each channel)**

Power Dissipation @ 25°C	75 mW
Derate Linearly from 25°C	10 mW/°C
Continuous Forward Current	50 mA
Peak Reverse Voltage	3 V

Photodarlington Sensor (Each Channel)

	ILD30	ILD55
Power Dissipation at 25°C Ambient	150 mW	150 mW
Derate Linearly From 25°C	2.0 mW/°C	2.0 mW/°C
Collector (load) Current	125 mA	125 mA
Collector-Emitter Breakdown Voltage (BV _{CEO})	30V	55V

Package

Storage Temperature	-55°C to +125°C
Operating Temperature	-55°C to +100°C
Lead Soldering Time at 260°C	10 sec

Total Package Power Dissipation @ 25°C

ILD30/ILD31/ILD55	250 mW
ILD30/ILD31/ILD55	400 mW
ILD30/ILD31/ILD55	500 mW

Derate Linearly from 25°C

ILD30/ILD31/ILD55	3.3 mW/°C
ILD30/ILD31/ILD55	5.33 mW/°C
ILD30/ILD31/ILD55	5.67 mW/°C

Isolation Test Voltage

in Accordance with DIN57883/6.80 3750 VAC/5300 VDC

Creepage Path

ILD30/31/55 8 mm min.

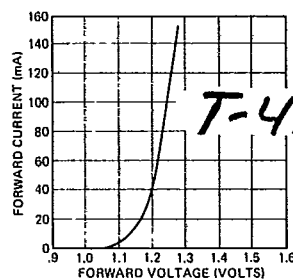
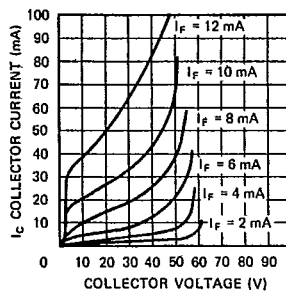
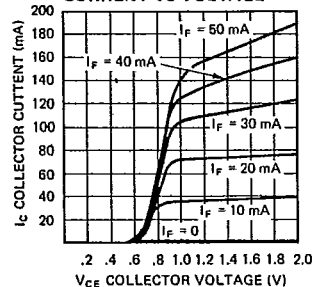
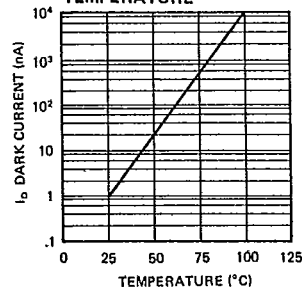
ILD30/31/55, ILQ30/31/55 7 mm min.

Clearance Path 7 mm min.

Tracking Index According to VDE 0303 KB100/A

Electrical Characteristics (T_{amb} = 25°C)

Parameter	Min	Typ	Max	Unit	Test Condition
GaAs Emitter					
Forward Voltage		1.25	1.5	V	I _F = 20mA
Reverse Current		0.1	10	μA	V _R = 3.0V
Capacitance		50		pF	V _R = 0
Sensor					
BV _{CEO}	30/55			V	I _C = 100μA I _F = 0
I _{CEO}		1.0	100	nA	V _{CE} = 10V I _F = 0
Capacitance					
Collector-Emitter		3.4		pF	V _{CE} = 10V
Coupled Characteristics					
Current Transfer Ratio	100	400		%	I _F = 10mA V _{CE} = 5V
Current Transfer Ratio ILD31, ILQ31, ILQ31 only	200	400			
V _{CE(SAT)}		0.9	1.0	V	I _C = 50mA I _F = 50mA V _{CC} = 13.5V R _C = 100Ω
Rise Time		10		μs	
Fall Time		35		μs	
UL Qualified for	7500			VDC	
Isolation Resistance		10 ¹²		ohm	
Isolation Capacitance		0.5		pF	

TYPICAL OPTOELECTRONIC CHARACTERISTIC CURVES**GaAs EMITTER:
FORWARD CURRENT - VOLTAGE
CHARACTERISTICS****DARLINGTON
TRANSISTOR CURRENT VS VOLTAGE****DARLINGTON
TRANSISTOR OUTPUT
CURRENT VS VOLTAGE****DARK CURRENT VS
TEMPERATURE**Optocouplers
(Optoisolators)

ILD/Q30/31/55