

H21L1, H21L2  
H22L1, H22L2



**ISO - LOGIC INVERTER  
SCHMITT TRIGGER  
INTERRUPTER SWITCH**

**DESCRIPTION**

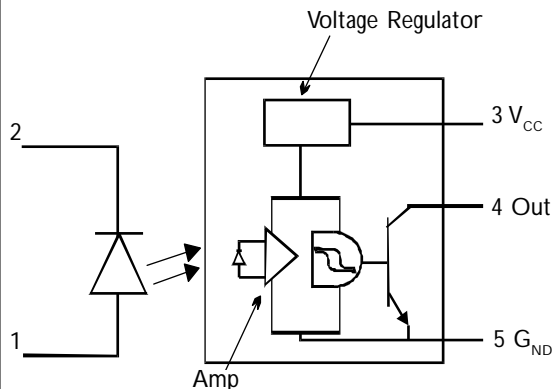
The H21L\_ and H22L\_ series of transmissive photointerrupters are single channel switches consisting of a Gallium Arsenide infrared emitting diode coupled to a high speed integrated circuit detector. The output incorporates a Schmitt trigger which provides hysteresis for noise immunity and pulse shaping. The gap in the plastic housing provides a means of interrupting the signal with an opaque material, switching the output from an 'ON' into an 'OFF' state.

**FEATURES**

- Built in Schmitt trigger circuit
- Open collector output
- High sensitivity
- 3mm gap between LED and detector
- 1mm aperture over LED and detector

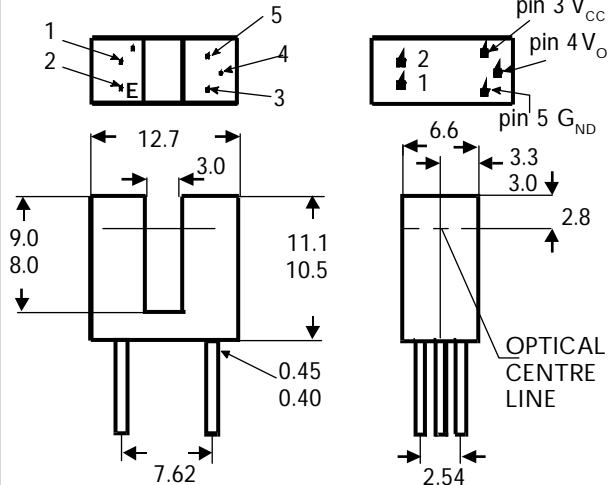
**APPLICATIONS**

- Floppy disk drives, Copiers, Printers, Facsimilies, VCR's, Cassette tape Recorders, Automatic vending machines

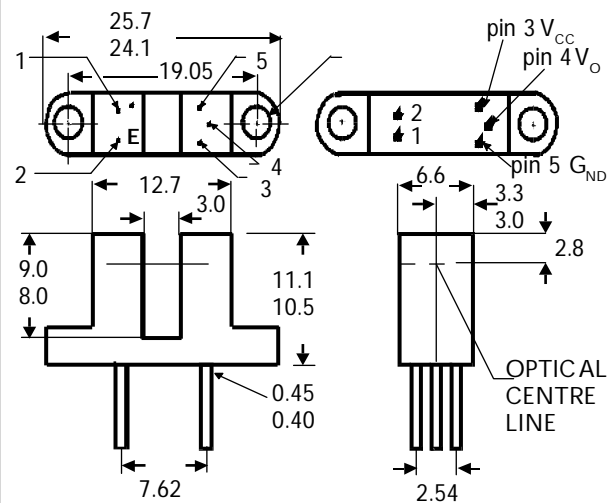


Dimensions in mm

**H22L1  
H22L2**



**H21L1  
H21L2**



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**ABSOLUTE MAXIMUM RATINGS (25°C unless otherwise specified)**

Storage Temperature	_____	-40°C to +85°C
Operating Temperature	_____	-25°C to +85°C
Lead Soldering Temperature	_____	260°C
(5 secs maximum)		

**INFRARED EMITTING DIODE**

Power Dissipation	_____	75 mW
Forward Current ( Continuous )	_____	50 mA
Forward Current ( Peak )	_____	1 A
(Pulse Width ≤ 100μs, Duty Ratio = 0.01)		
Reverse Voltage	_____	6V

**PHOTO DETECTOR**

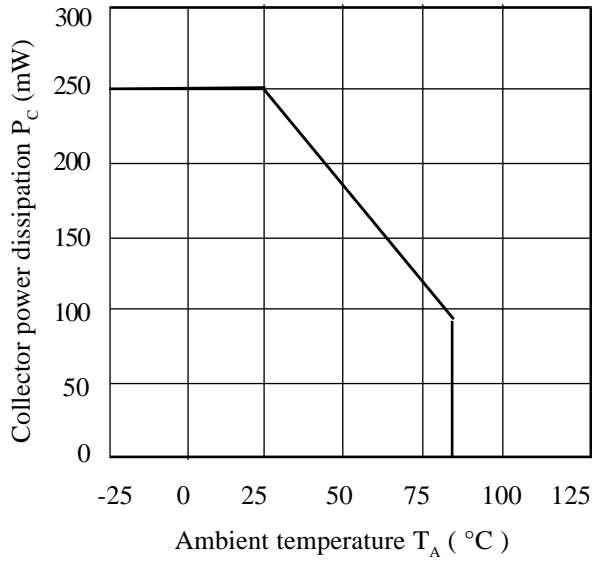
Power Dissipation	_____	250 mW
Output Current	_____	50mA
Allowed Range $V_{35}$	_____	0 to 35V
Allowed Range $V_{45}$	_____	0 to 40V

**ELECTRICAL CHARACTERISTICS (  $T_A = 25^\circ\text{C}$  Unless otherwise noted )**

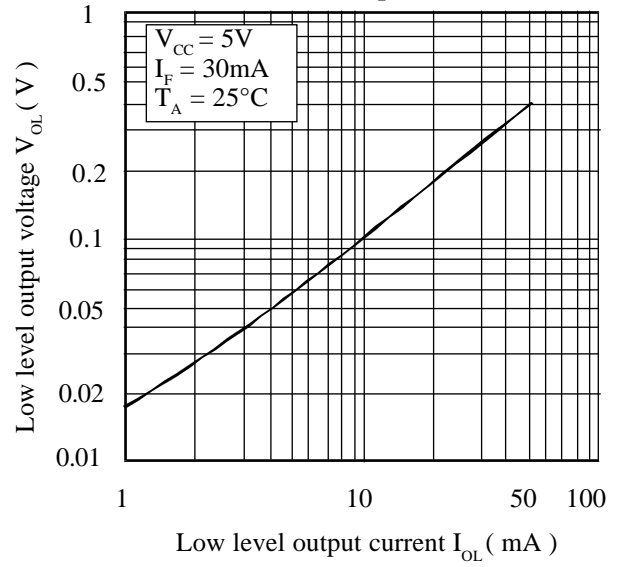
PARAMETER		MIN	TYP	MAX	UNITS	TEST CONDITION	
Input	Forward Voltage ( $V_F$ )		1.1	1.6	V	$I_F = 20\text{mA}$ $I_R = 10\mu\text{A}$ $V_R = 3\text{V}$	
	Reverse Voltage ( $V_R$ )	6			V		
	Reverse Current ( $I_R$ )			10	$\mu\text{A}$		
Detector	Operating Voltage Range $V_{CC}$	4		15	V		
	Low Level Supply Current $I_{CCL}$		1.6	5	mA		
	High Level Supply Current $I_{CCH}$		1.0	5	mA		
	Low Level Output Voltage $V_{OL}$			0.4	V		
	High Level Output Current $I_{OH}$			100	$\mu\text{A}$		
	Turn-on Threshold Current $I_F (ON)$	H21L1, H22L1			30		mA
		H21L2, H22L2			15		mA
	Turn-off Threshold Current $I_F (OFF)$	H21L1, H22L1	0.5				mA
		H21L2, H22L2	0.5				mA
	Hysteresis Ratio $I_F (OFF) / I_F (ON)$	0.5		0.9			
Rise Time	tr		0.1		$\mu\text{s}$		
Fall Time	tf		0.05		$\mu\text{s}$		

Note 1 Special Selections are available on request. Please consult the factory.

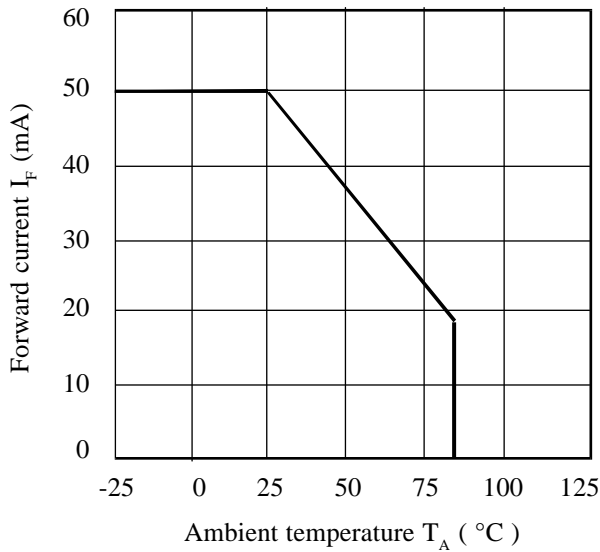
**Collector Power Dissipation vs. Ambient Temperature**



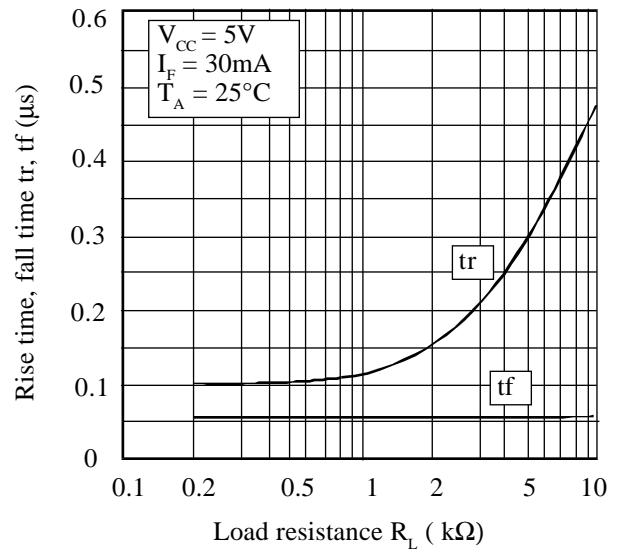
**Low Level Output Voltage vs. Low Level Output Current**



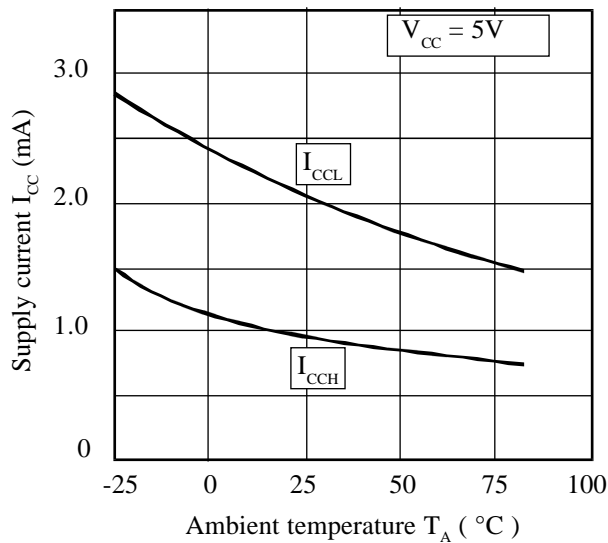
**Forward Current vs. Ambient Temperature**



**Rise Time, Fall Time vs. Load Resistance**



**Supply Current vs. Ambient Temperature**



**Low Level Output Voltage vs. Ambient Temperature**

