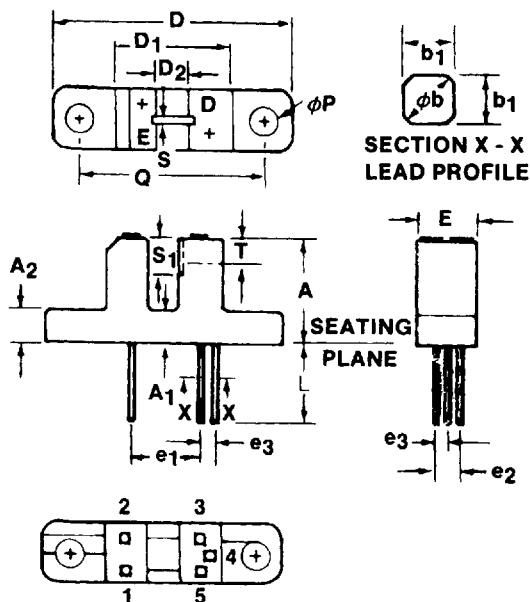


PACKAGE DIMENSIONS



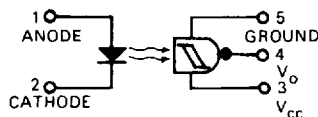
SYMBOL	MILLIMETERS		INCHES		NOTES
	MIN.	MAX.	MIN.	MAX.	
A	10.7	11.0	.422	.433	
A ₁	3.0	3.2	.119	.125	
A ₂	3.0	3.2	.119	.125	
phi b	.600	.750	.024	.030	2
b ₁	.50 NOM.		.020 NOM.		2
D	24.3	24.7	.957	.972	
D ₁	11.6	12.0	.457	.472	
D ₂	3.0	—	.119	—	
e ₁	6.9	7.5	.272	.295	
e ₂	2.3	2.8	.091	.110	
e ₃	1.14	1.40	.045	.055	
E	6.15	6.35	.243	.249	
L	8.00	—	.315	—	
phi p	3.2	3.4	.126	.133	
Q	18.9	19.2	.745	.755	
S	.85	1.0	.034	.039	
S ₁	3.94 NOM.		.155 NOM.		
T	2.6 NOM.		.103 NOM.		3

NOTES

1. INCH DIMENSIONS ARE DERIVED FROM MILLIMETERS.
2. FIVE LEADS, LEAD CROSS SECTION IS CONTROLLED BETWEEN 1.27 mm (.050") FROM SEATING PLANE AND THE END OF THE LEADS.
3. THE SENSING AREA IS DEFINED BY THE "S" DIMENSION AND BY DIMENSION "T" ± 0.75 mm ($\pm .030$ INCH).

ST1344

PACKAGE OUTLINE



ST1610

DESCRIPTION

The H21L Slotted Optical Switch is a gallium arsenide light emitting diode coupled to a high speed integrated circuit detector in a plastic housing. The output incorporates a Schmitt trigger which provides hysteresis for noise immunity and pulse shaping. The packaging system is designed to optimize the mechanical resolution, coupling efficiency, ambient light rejection, cost and reliability. The gap in the housing provides a means of interrupting the signal with an opaque material, switching the output from an "ON" to an "OFF" state.

FEATURES

- Opaque housing
- Low cost
- .035" apertures

ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ Unless Otherwise Specified)

Storage Temperature	-55°C to $+85^\circ\text{C}$
Operating Temperature	-55°C to $+85^\circ\text{C}$
Soldering:	
Lead Temperature (Iron)	240°C for 5 sec. ^(3,4,5)
Lead Temperature (Flow)	260°C for 10 sec. ^(3,4)

INPUT DIODE

Continuous Forward Current	60 mA
Reverse Voltage	6.0 Volts
Power Dissipation	100mW ⁽¹⁾

OUTPUT OPTOLOGIC™

Output Current I_A	50 mA
Allowed Range V_{35}	4 to 16 Volts
Allowed Range V_{45}	2.4 to 16 Volts
Power Dissipation	150 mW (2)

ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ Unless Otherwise Specified)

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNITS	TEST CONDITIONS
INPUT DIODE						
Forward Voltage	V_F	—		1.6	V	$I_F = 20\text{ mA}$
Reverse Leakage Current	I_R	—		10	μA	$V_R = 3\text{V}$
OUTPUT OPTOLOGIC™						
Operating Voltage Range	V_C	4		16	V	
Supply Current	$I_{3(\text{off})}$	—		5.0	mA	$I_F = 0, V_{CC} = 5\text{V}$
Supply Current	$I_{3(\text{on})}$	—		5.0	mA	$I_F = 30\text{mA}, V_{CC} = 5\text{V}$

NOTES

1. Derate power dissipation linearly 1.33mW/ $^\circ\text{C}$ above 25°C .
2. Derate power dissipation linearly 2.00mW/ $^\circ\text{C}$ above 25°C .
3. RMA flux is recommended.
4. Methanol or Isopropyl alcohols are recommended as cleaning agents.
5. Soldering iron tip $\frac{1}{16}$ " (1.6 mm) minimum from housing.

COUPLED ELECTRICAL CHARACTERISTICS

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNITS	TEST CONDITIONS
Output Current High	I_{OH}	—		100	μA	$I_F = 0, V_{CC} = 5V, V_O = 16V$
Output Voltage, Low	V_{OL}	—	0.2	0.4	V	$R_L = 270\Omega, V_{CC} = 5V, I_F = 30mA$
TURN-ON THRESHOLD CURRENT						
H21L1	$I_{F(ON)}$	—		30	mA	$R_L = 270\Omega, V_{CC} = 5V$
H21L2	$I_{F(ON)}$	—		15.0	mA	$R_L = 270\Omega, V_{CC} = 5V$
TURN-OFF THRESHOLD CURRENT						
H21L1	$I_{F(OFF)}$	0.5	15	—	mA	$R_L = 270\Omega, V_{CC} = 5V$
H21L2	$I_{F(OFF)}$	0.5	8	—	mA	$R_L = 270\Omega, V_{CC} = 5V$
Hysteresis Ratio	$I_{F(OFF)}/I_{F(ON)}$	0.50	0.75	0.90	—	$R_L = 270\Omega, V_{CC} = 5V$
SWITCHING SPEEDS						
Rise Time	t_r	—	0.1	—	μS	$R_L = 270\Omega, V_{CC} = 5V, I_F = 20mA$
Fall Time	t_f	—	0.1	—	μS	$R_L = 270\Omega, V_{CC} = 5V, I_F = 20mA$

TYPICAL CHARACTERISTICS

