Assemblies Optical Encoder

HOA901 SERIES
The HOA901 optical encoder assembly consists of a dual channel IC sensor, and a GaAs IRED (Infrared Emitting Diode) mounted in an opaque plastic housing. The sensor is a monolithic IC, consisting of two narrow adjacent photodiodes, amplifiers, and Schmitt trigger output stages. The NPN collector outputs have internal pull-up to V_{cc} to directly drive TTL loads. Sensitivity compensation circuitry is included (output power versus IRED temperature characteristic).

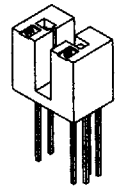
The IC sensing areas are each 0.008" wide, with 0.001" separation, for center-to-center spacing of 0.009", and outside edge-to-edge distance of 0.017". The HOA901 can operate with an encoder pattern period as small as 0.036". With proper processing logic, it can resolve motion to 0.009".

ELECTRICAL CHARACTERISTICS (at -40 to +85°C, unless otherwise noted)

Parameter	Test Condition	Sym.	Min.	Max.	Units
EMITTER					
Forward Voltage	I_f = 20 mA	V_F	—	1.5	V
Reverse Current	V_R = 3.0 VDC	I_R	—	100	µA
SENSOR					
Supply Current	V_{CC} = 5.25 VDC	I_{CC}	—	7.0	mA
High Level Output Voltage (A and B)	V_{CC} = 5.0 VDC I_{OH} = 0 mA	V_{OH}	4.5	—	V
Low Level Output Voltage (A and B)	V_{CC} = 5.0 VDC I_{OL} = 1.6 mA	V_{OL}	—	0.4	V
Internal Pull-up Resistor (A and B)		R_{INT}	5	20	kohm
Propagation Delay Time Lo-Hi	V_{CC} = 5.0 VDC R_L = 390Ω T_A = 25°C	t_{PLH}	—	5	µsec
Propagation Delay Time Hi-Lo		t_{PHL}	—	5	µsec
Rise Time	V_{CC} = 5.0 VDC R_L = 390Ω T_A = 25°C	t_r	—	100	nsec
Fall Time		t_f	—	100	nsec
COUPLED					
IRED Operating Current	V_{CC} = 5.0 VDC	I_{OP}	—	15	mA

ORDER GUIDE

Catalog Listing	Description
HOA901-11	Optical encoder assembly, PCB mount



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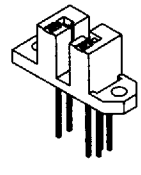
Catalog Listing	Description
HOA901-12	Optical encoder assembly, chassis mount, with mounting tabs



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