67056	**LIQUID LEVEL SENSOR**	**OPTOELECTRONIC PRODUCTS DIVISION**

Features:	**Applications:**
• Accurate liquid level sensing • Rapid response • Solid state reliability • Excellent repeatability	• Medical • Food processing • Appliances • Food service equipment

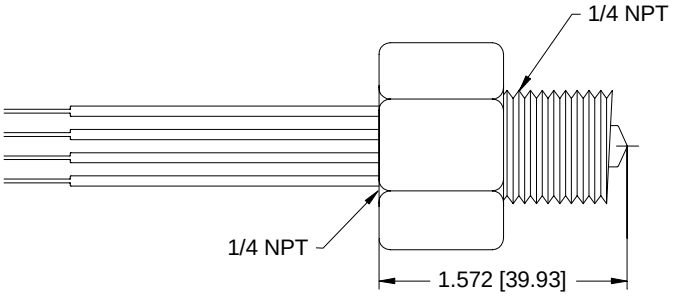
DESCRIPTION

The ***67056*** Liquid Level Sensor combines accurate sensing with solid state operation in a small easily mounted stainless steel housing. It can sense liquids in a wide range of applications with varying viscosities. Both emitter and detector are enclosed in a single, hermetically sealed TO-5. These devices operate on the principal of total internal reflection. The TO-5 is optically coupled to a glass rod with a conical tip. When no liquid is present, LED light is reflected from the conical tip to the detector. When liquid covers the cone, the refractive index at the cone-liquid boundary changes, allowing LED light to escape into the liquid. With the LED light reduced, the detector switches signaling the presence of liquid. Sensing of the liquid is very fast, nearly instantaneous for water. The digital ON/OFF output smoothly interfaces with microprocessor-based devices. This product is available screened in accordance with MIL-PRF-19500. Call the factory for custom versions and/or applications.

ABSOLUTE MAXIMUM RATINGS

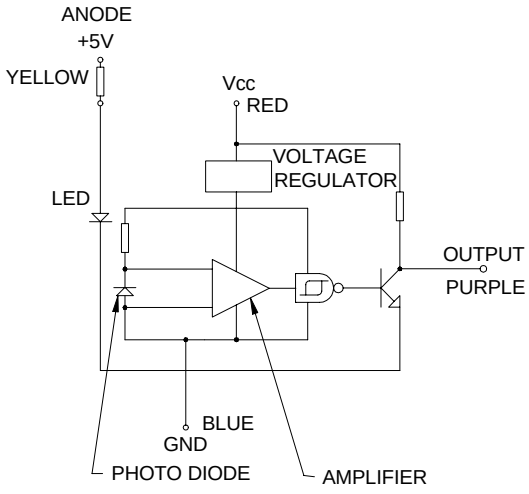
Storage Temperature ..... -65°C to +125°C
Operating Free-Air Temperature Range ..... -40°C to +85°C
Supply Voltage 20V
Ambient Light Limit ..... 0.5mW/cm^2

Package Dimensions



ALL DIMENSIONS ARE IN INCHES [MILLIMETERS]
ALL DIMENSIONS ARE NOMINAL

Schematic Diagram



ELECTRICAL CHARACTERISTICS

T_A = 25°C Unless otherwise specified

PARAMETER	SYMBOL	MIN	MAX	UNITS	TEST CONDITIONS	NOTE
Input Diode Static Forward Voltage	V_F		1.7	V	I_F = 20mA	

OUTPUT TRANSISTOR

T_A = 25°C Unless otherwise specified

PARAMETER	SYMBOL	MIN	MAX	UNITS	TEST CONDITIONS	NOTE
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	30		V	I_C = 1mA, I_B = 0, I_F = 0	
Emitter-Collector Breakdown Voltage	$V_{(BR)ECO}$	5		V	I_C = 0, I_E = 100μA, I_F = 0	
Off State Collector Current	I_{CEO}		100	nA	V_{CE} = 10V, I_B = 0, I_F = 0mA	

COUPLED CHARACTERISTICS

T_A = 25°C

PARAMETER	SYMBOL	MIN	MAX	UNITS	TEST CONDITIONS	NOTE
On State Collector Current	$I_{C(ON)}$	4		mA	V_{CE} = 5V, I_B = 0, I_F = 20mA	
Collector-Emitter Saturation Voltage	$V_{CE(SAT)}$		0.40	V	I_C = 2.0mA, I_B = 0 I_F = 20mA	
Input to Output Resistance	R_{I-O}	10^{11}			V_{IN-OUT} = 1kV	1
Input to Output Capacitance	C_{I-O}		5	pF	f = 1MHz, V = 0	1

NOTES:

1. These parameters are measured between all phototransistor leads shorted together and with both input diode leads shorted together.

RECOMMENDED OPERATING CONDITIONS:

PARAMETER	SYMBOL	MIN	MAX	UNITS
Input Current, Low Level	I_{FL}	0	100	μA
Input Current, High Level	I_{FH}	10	20	mA
Supply Voltage	V_{CE}	5	10	V

SELECTION GUIDE

PART NUMBER	PART DESCRIPTION
67056-001	High output when in contact with liquid
67056-002	Low output when in contact with liquid.