

## SPECIAL PURPOSE SENSORS

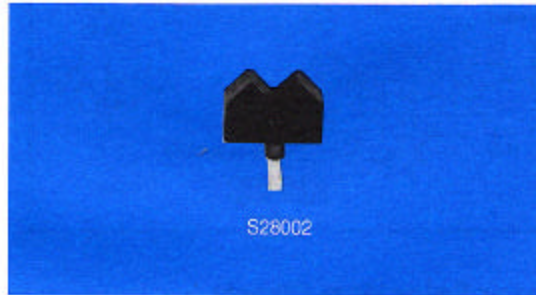
### Semiconductor Wafer Detection

### S28 Series

### WAFER SKANNER

#### Features:

- Operating distance: .050 in.
- Detects semiconductor wafers
- LED skanner
- Subminiature size
- Can be modulated
- Three different body styles



#### Description:

The S28 Series skanner is a specially constructed LED sensor designed to detect wafers for the semiconductor industry. Polished and unpolished wafers can be detected from the same sensing point.

The unit employs matched and focused components assembled in a sealed aluminum body with an ambient filter and protective cover glass.

#### Typical Applications:

- Proximity sensing
- Detection of specular surfaces

#### Specifications: (at 25°C)

##### LIGHT SOURCE—LED

<b>Input</b>	40 mA max. with resultant voltage drop of 1.1 to 1.7 VDC; derate at 1 mA per degree above 25°C ambient
<b>Modulated Input</b>	80 mA max., 50% duty cycle at 1 kHz min.
<b>Reverse Voltage</b>	2 V max.
<b>Spectral Emission</b>	930 nm peak

##### PHOTODETECTOR

<b>Operating Voltage</b>	30 VDC max.
<b>Spectral Response</b>	910 nm peak; filtered to respond to less than 5% at 750 nm and less than 0.1% at 700 nm

##### BODY

Black anodized aluminum

##### TEMPERATURE

Operating: 0° to 50°C  
Storage: -40° to 50°C

##### LEADS

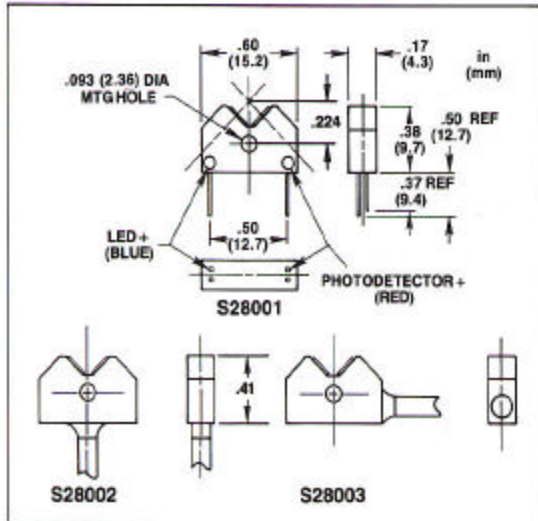
<b>S28001</b>	Four tinned leads for circuit board mounting
<b>S28002</b>	4 cond. 26 AWG., teflon covered cable, with shielded photodetector leads and overall shield, 6 ft. long. Type J (Shielded Quad)
<b>S28003</b>	

##### Color Coding

<b>S28001</b>	LED: (blue dot) long lead (+), short lead (-) Sensor: (red dot) long lead (+), short lead (-)
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## S28 Series

### Dimensions:



### Compatibility With Controls:

The S28 Series is compatible with most Skan-A-Matic controls. For high speed operation use the T41300 High Speed Amplifier.

These skanners utilize a 40 mA Light Emitting Diode. A 100 ohm, 1/4 W current limiting resistor is supplied and must be used with Skan-A-Matic controls furnishing 5 VDC for light source power. With modulating controls such as our R42/T42, a 27 ohm, 1/4 W current limiting resistor must be used. The S28 Series is not compatible with the R43/T43 modulating controls.

### Model Selection Guide:

Part #	Description
S28001	Skanner for circuit board mounting
S28002	Skanner with bottom mounted cable
S28003	Skanner with side mounted cable

### Variations:

#### LEADS

Extra lead lengths available. Use Type J — see pg. 129.

#### Options:

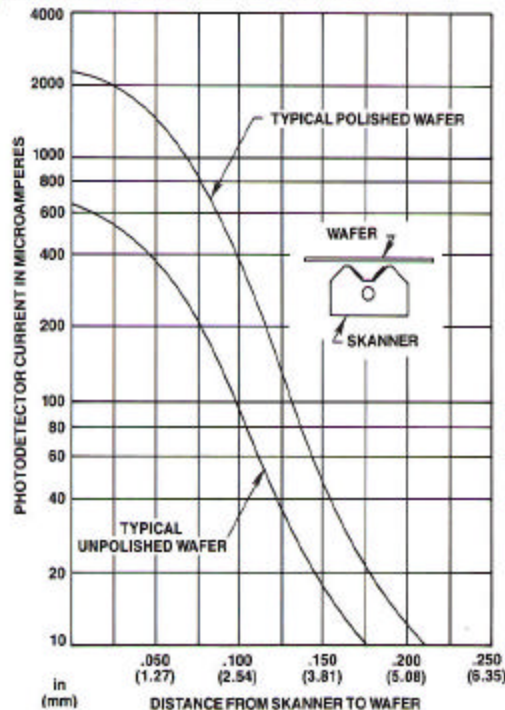
##### CONNECTOR

The S28 Series skanners are available with connector installed. The mating half is furnished for field connection. Order by adding a suffix as follows:

- P For connector pair with in-line receptacle. Example: S28001-P
- F For connector pair with flanged, panel-mount receptacle. Example: S28001-F

See Options for a more detailed description.

### Typical Performance Chart:



With the skanner placed at .050 inches from a white target, photodetector current will be a minimum of 250 microamperes.

### Wiring Diagram:

