



**PART NUMBER:** SES10

**DESCRIPTION:** sine wave

**ELECTRICAL SPECIFICATIONS**

|                         |                                 |
|-------------------------|---------------------------------|
| output waveform         | Sine Wave                       |
| output signals          | A phase, A,B phase              |
| current consumption     | ≤30 mA (LED: maximum 20mA)      |
| frequency response      | 0~20 KHz                        |
| output phase difference | A, B phase difference 90° ± 45° |
| supply voltage          | 5 V dc ± 10%                    |
| output resolution (ppr) | 100, 200                        |

**MECHANICAL SPECIFICATIONS**

|                         |   |
|-------------------------|---|
| max shaft load, radial: | 1.9N (200gf)  |
| axial:                  | 1.9N (200gf)  |
| starting torque         | 0.3 x 10 <sup>-3</sup> N·m (3 gf·cm)                |
| max rotational speed    | 6000 RPM  |
| shock resistance        | 500m/s <sup>2</sup> (about 50G) 3 times each on XYZ |
| vibration proof         | 55 Hz, double amplitude 1.5mm, 2 hours each on XYZ  |
| weight                  | 10g (with 130mm cable)                              |
| cable                   | Vinyl wire (AWG 30) 130mm                           |

**ENVIRONMENTAL SPECIFICATIONS**

|                |                         |
|----------------|-------------------------|
| operating temp | 0° to +50° C            |
| storage temp   | -20° to +80° C          |
| humidity       | 90% max. non collecting |

**ORDERING INSTRUCTIONS**

SES10 - XXXXX

Resolution (PPR):

100 = 100 PPR

200 = 200 PPR

Output Phase:

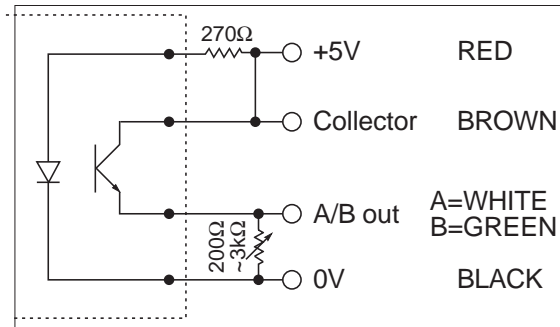
A = Single Phase

AB = Two-Phase

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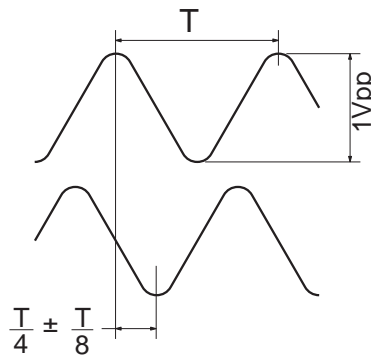
**DESCRIPTION:** sine wave

### CIRCUIT CONNECTIONS

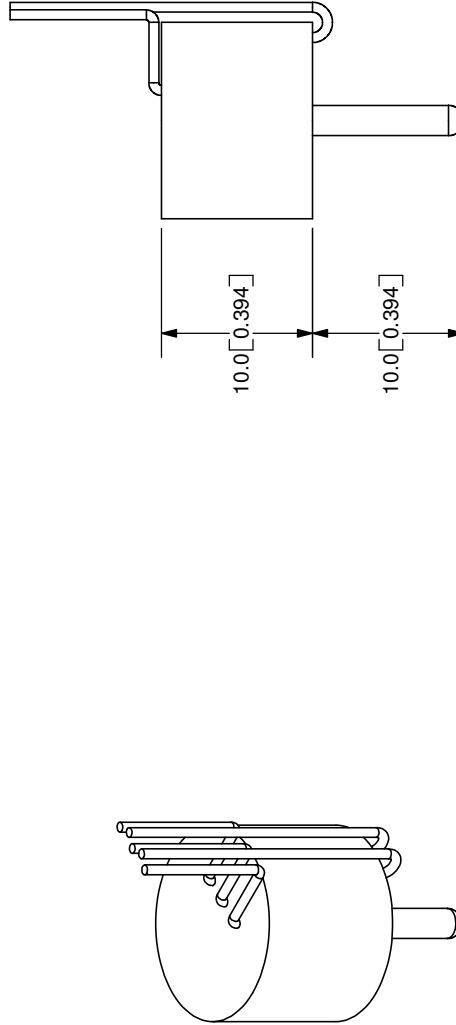
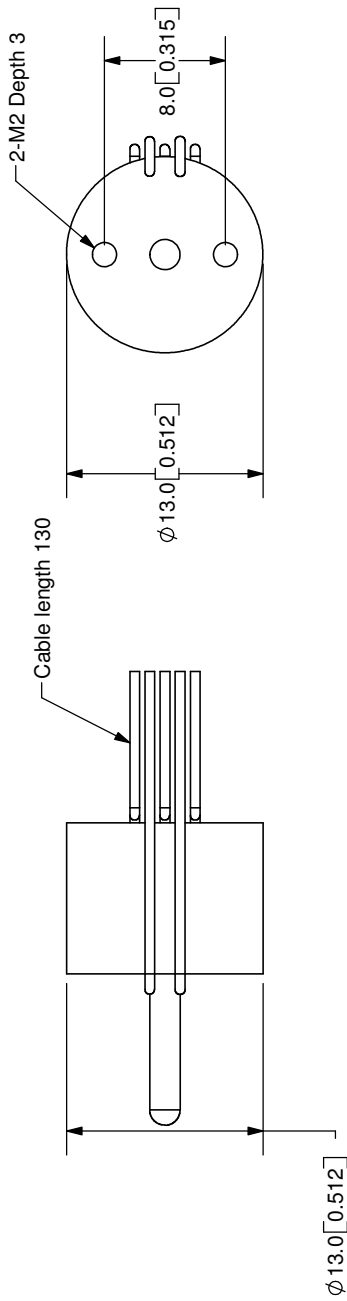


### OUTPUT WAVEFORM

Clockwise rotation viewed from front



|      |             |           |
|------|-------------|-----------|
| REV. | DESCRIPTION | DATE      |
| A    | NEW DRAWING | 7/27/2007 |



TOLERANCE:  
±0.3mm UNLESS OTHERWISE  
SPECIFIED



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TITLE: Incremental Encoder  
REV: A

PART NO: SES 10  
UNITS: MM [INCHES]

DRAWN BY: JMS  
APPROVED BY:  
SCALE: 2:1

|             |       |           |           |           |         |   |   |   |
|-------------|-------|-----------|-----------|-----------|---------|---|---|---|
| Cable Color | Red   | Brown     | White     | Green     | Black   | - | - | - |
| Output Type | Anode | Collector | Emitter A | Emitter B | Cathode | - | - | - |

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PC FILE NAME: SES 10