

# SLC800



## Linear Optocoupler



### DESCRIPTION

The SLC800 is a highly advanced linear optocoupler device. The product takes advantage of highly matched transistors used for both a Servo Feedback Loop and a Forward Output Loop. The closely matched transistors provide a high degree of linearity across a wide range of input signal variation. These features make the SLC800 an ideal product for transformer replacement in many medical, industrial, and power supply isolation circuits. Its small size makes the device quite attractive for telecom applications where board space is limited.

### FEATURES

- Couples Analog and Digital Signals
- Low Power Consumption
- Optically isolated
- Wide Bandwidth
- High input to output Isolation
- Low Input/Output Capacitance

### APPLICATIONS

- Digital Telephone Isolation
- Medical Sensor Isolation
- Audio Signal Interfacing
- Modem Transformer Replacement

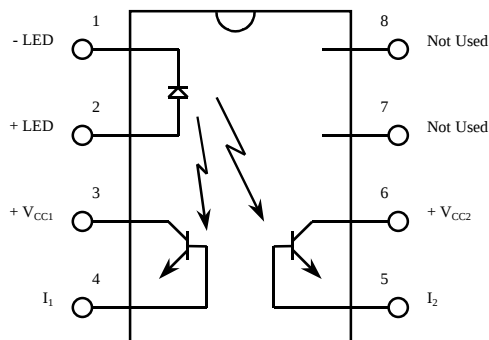
### OPTIONS / SUFFIXES

- -S Surface Mount Device
- -TR Tape and Reel

### MAXIMUM RATINGS

| PARAMETER                     | UNIT | MIN   | TYP | MAX  |
|-------------------------------|------|-------|-----|------|
| Storage Temperature           | C    | - 55° | -   | 125° |
| Operating Temperature         | C    | - 40° | -   | 85°  |
| Continuous Input Current      | mA   | -     | -   | 40   |
| Transient Input Current       | mA   | -     | -   | 400  |
| Reverse Input Control Voltage | V    | 6.0   | -   | -    |
| Output Power Dissipation      | mW   | -     | -   | 500  |

### SCHEMATIC DIAGRAM



### APPROVALS

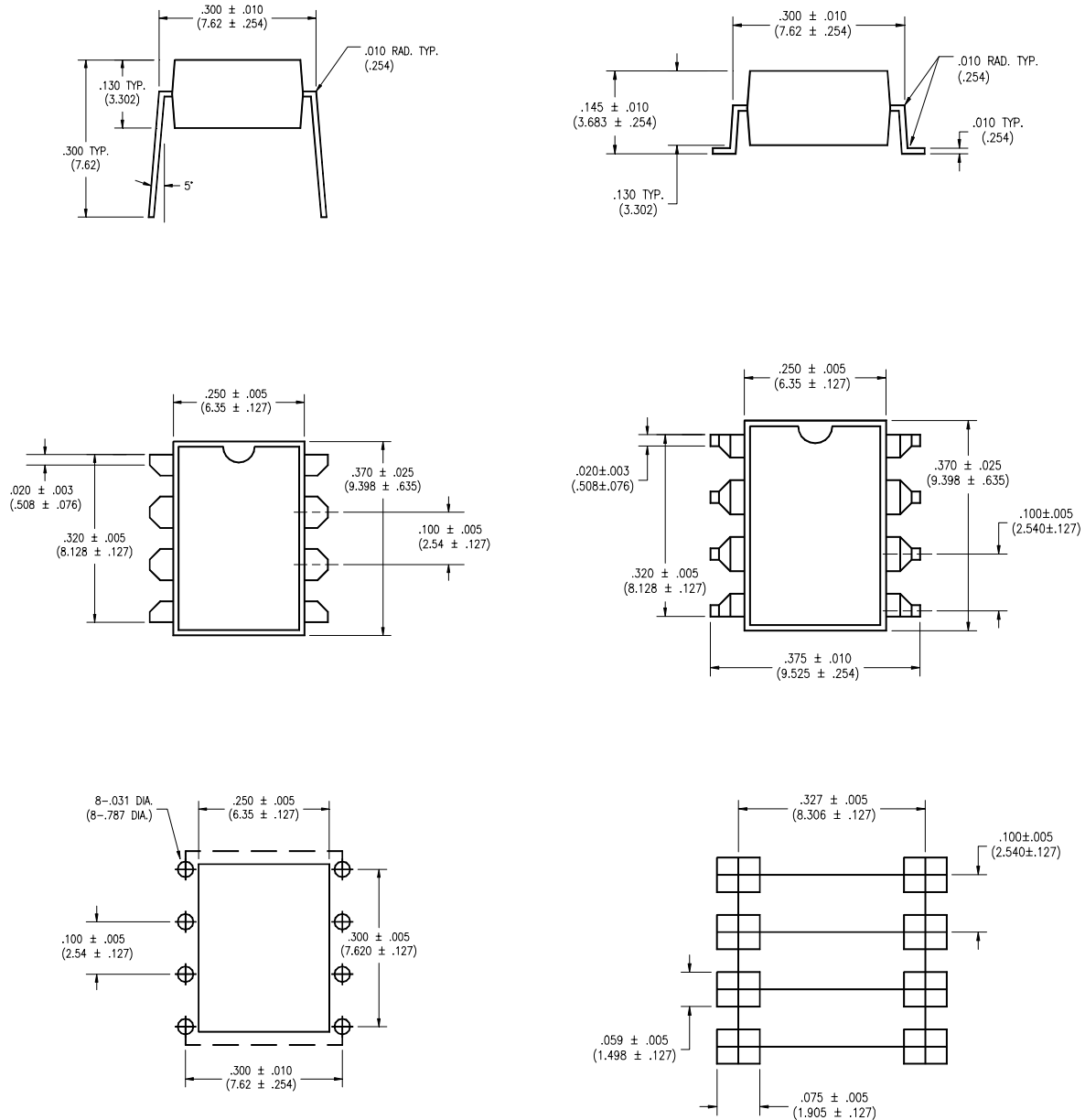
- BABT - Pending
- CSA - Pending
- UL - Pending

## ELECTRICAL CHARACTERISTICS - 25°C

| PARAMETER                                        | UNIT | MIN   | TYP   | MAX   | TEST CONDITIONS                                     |
|--------------------------------------------------|------|-------|-------|-------|-----------------------------------------------------|
| <b>INPUT SPECIFICATIONS</b>                      |      |       |       |       |                                                     |
| LED Forward Voltage                              | V    | -     | 1.2   | 1.5   | $I_F = 10\text{mA}$                                 |
| LED Reverse Voltage                              | V    | 6.0   | 12    | -     | $I_R = 10\mu\text{A}$                               |
| Forward LED Current                              | mA   | -     | -     | 40    | -                                                   |
| <b>COUPLER / DETECTOR CHARACTERISTICS @ 25°C</b> |      |       |       |       |                                                     |
| K1 Servo Gain ( $I_1 / I_F$ )                    | -    | 0.003 | 0.007 | 0.010 | $I_F = 0.3\text{-}10\text{mA}, V_{CC} = 15\text{V}$ |
| K2 Servo Gain ( $I_2 / I_F$ )                    | -    | 0.003 | 0.007 | 0.010 | $I_F = 0.3\text{-}10\text{mA}, V_{CC} = 15\text{V}$ |
| K3 Servo Gain ( $K_2 / K_1$ )                    | -    | 0.800 | 1.000 | 1.200 | $I_F = 0.3\text{-}10\text{mA}, V_{CC} = 15\text{V}$ |
| Transfer Gain Linearity                          | %    | -     | 0.100 | 0.500 | $I_F = 0.3\text{-}10\text{mA}$                      |
| Isolation Voltage                                | V    | 1500  | -     | -     | T = 1 Minute                                        |
| <b>PHOTOCONDUCTIVE OPERATION @ 25°C</b>          |      |       |       |       |                                                     |
| Frequency Response (BW @ -3dB)                   | kHz  | -     | 140   | -     | $I_F = 10\text{mA}, \Delta V = 2\text{V}$           |
| Phase Response                                   | DEG  | -     | -45   | -     | f = 140 kHz                                         |

## MECHANICAL DIMENSIONS

### 8 pin DIP and SMD Package



NOTES

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