



Bridge Characteristics

| Parameter | Rating | Units |
|-----------------|--------|-------------------|
| Reverse Voltage | 100 | V |
| Forward Current | 240 | mA _{rms} |

Description

The CPC7557N is an integrated diode bridge built on IXYS Integrated Circuits Division's High Voltage SOI technology.

Features

- Monolithic Construction
- Surface Mount Package

Applications

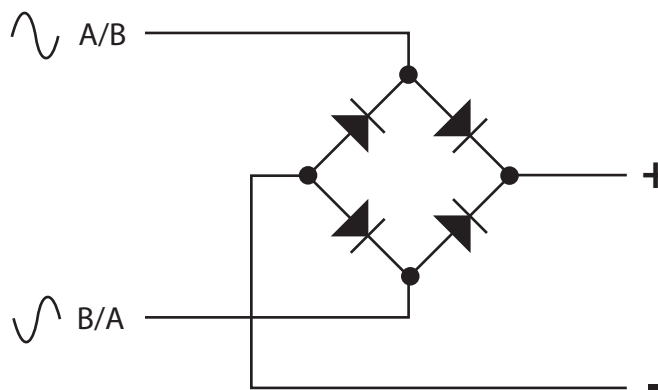
- Telecommunications Protection Clamp
- High Voltage Multiplexer/Switch

Ordering Information

| Part | Description |
|------------|------------------------------------|
| CPC7557N | 8-Pin SOIC in Tubes (100/Tube) |
| CPC7557NTR | 8-Pin SOIC Tape & Reel (2000/Reel) |

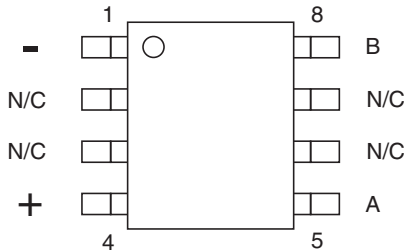


CPC7557N Diagram



1 Specifications

1.1 Package Pinout



1.2 Pin Description

| Pin# | Name | Description |
|------|------|------------------------|
| 1 | - | Negative Bridge Output |
| 2 | N/C | No Connection |
| 3 | N/C | No Connection |
| 4 | + | Positive Bridge Output |
| 5 | A | Input A |
| 6 | N/C | No Connection |
| 7 | N/C | No Connection |
| 8 | B | Input B |

1.3 Absolute Maximum Ratings

Unless Otherwise Specified all electrical ratings are at 25°C

| Parameter | Symbol | Minimum | Maximum | Units |
|-----------------------------------|-----------|---------|---------|------------|
| Reverse Voltage | V_{RRM} | - | 120 | V |
| Diode Forward Current (Average) | I_F | - | 250 | mA_{rms} |
| Diode Forward Surge Current | I_{FSM} | - | 2 | A |
| Fusing Current | I^2t | - | 0.02 | A^2s |
| ESD, Human Body Model | - | - | 3 | kV |
| Junction Temperature ¹ | T_J | - | +150 | °C |
| Storage Temperature | T_{STG} | -65 | +150 | °C |

¹ Derate package for P_{DISS} 120°C/W.

Absolute maximum ratings are stress ratings. Stresses in excess of these ratings can cause permanent damage to the device. Functional operation of the device at conditions beyond those indicated in the operational sections of this data sheet is not implied.

1.4 Recommended Operating Conditions

| Parameter | Symbol | Minimum | Maximum | Units |
|---------------------------------|---------------|---------|---------|-----------------------------|
| Diode Forward Current (Average) | I_F | - | 240 | mA_{rms} |
| Reverse Voltage | V_R | - | 100 | V |
| Operating Temperature Range | T_A | -40 | +125 | $^{\circ}\text{C}$ |
| Thermal Impedance | θ_{JA} | 120 | - | $^{\circ}\text{C}/\text{W}$ |

1.5 General Conditions

Typical values are characteristic of the device at 25°C and are the result of engineering evaluations. They are provided for information purposes only and are not part of the manufacturing testing requirements.

Unless otherwise noted, all electrical specifications are listed for $T_A=25^{\circ}\text{C}$.

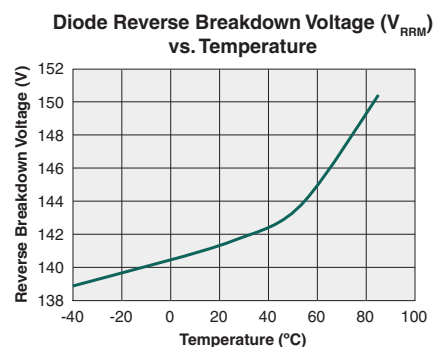
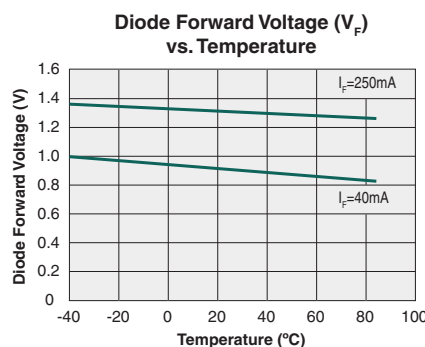
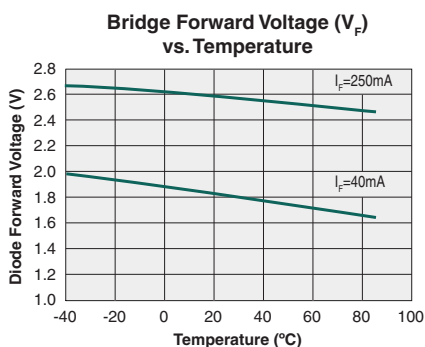
1.6 DC Electrical Characteristics

| Parameter | Conditions | Symbol | Minimum | Typical | Maximum | Units |
|---------------------------------|----------------------|--------|---------|---------|---------|--------------------------|
| Forward Current | - | I_F | - | - | 240 | mA_{rms} |
| Diode Forward Voltage Drop | $I_F = 40\text{mA}$ | V_F | 0.83 | 0.91 | 0.97 | V |
| | $I_F = 250\text{mA}$ | | 1 | 1.3 | 1.49 | |
| Reverse Voltage Leakage Current | $V_R=100\text{V}$ | I_R | - | - | 1 | μA |

1.7 AC Electrical Characteristics

| Parameter | Conditions | Symbol | Minimum | Typical | Maximum | Units |
|------------------------------|---|--------------------------------------|---------|---------|---------|-------|
| Input Zero Bias Capacitance | $V_+ - V_- = 0\text{V}$ Measured from V_A to V_B | C_{AB} | - | 4.4 | 12 | pF |
| Output Zero Bias Capacitance | $V_A = V_B$ Measured from V_+ to V_- | $C_{+/-}$ | - | 8.3 | 20 | pF |
| Bridge Zero Bias Capacitance | $V_+ - V_- = 0\text{V}$ Measured from V_A to $V_{+/-}$ and V_B to $V_{+/-}$ | $C_{A/+}, C_{A/-}, C_{B/+}, C_{B/-}$ | - | 8.5 | 12 | pF |

2 Typical Performance Data



3 Manufacturing Information

3.1 Moisture Sensitivity



All plastic encapsulated semiconductor packages are susceptible to moisture ingress. IXYS Integrated Circuits Division classified all of its plastic encapsulated devices for moisture sensitivity according to the latest version of the joint industry standard, **IPC/JEDEC J-STD-020**, in force at the time of product evaluation. We test all of our products to the maximum conditions set forth in the standard, and guarantee proper operation of our devices when handled according to the limitations and information in that standard as well as to any limitations set forth in the information or standards referenced below.

Failure to adhere to the warnings or limitations as established by the listed specifications could result in reduced product performance, reduction of operable life, and/or reduction of overall reliability.

This product carries a **Moisture Sensitivity Level (MSL) rating** as shown below, and should be handled according to the requirements of the latest version of the joint industry standard **IPC/JEDEC J-STD-033**.

| Device | Moisture Sensitivity Level (MSL) Rating |
|----------|---|
| CPC7557N | MSL 1 |

3.2 ESD Sensitivity



This product is **ESD Sensitive**, and should be handled according to the industry standard **JESD-625**.

3.3 Reflow Profile

This product has a maximum body temperature and time rating as shown below. All other guidelines of **J-STD-020** must be observed.

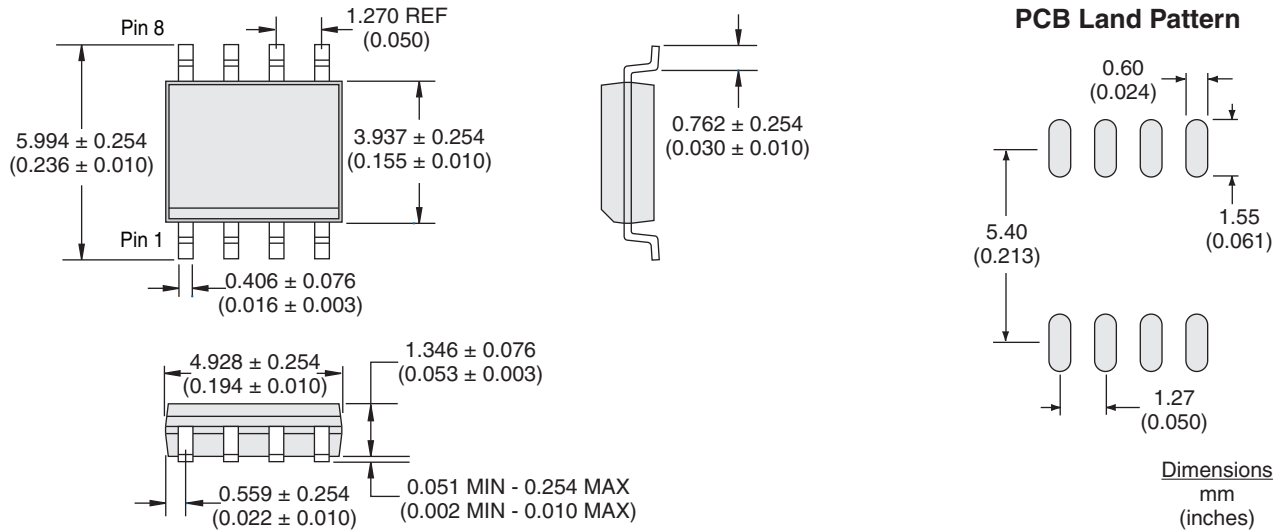
| Device | Maximum Temperature x Time |
|----------|----------------------------|
| CPC7557N | 260°C for 30 seconds |

3.4 Board Wash

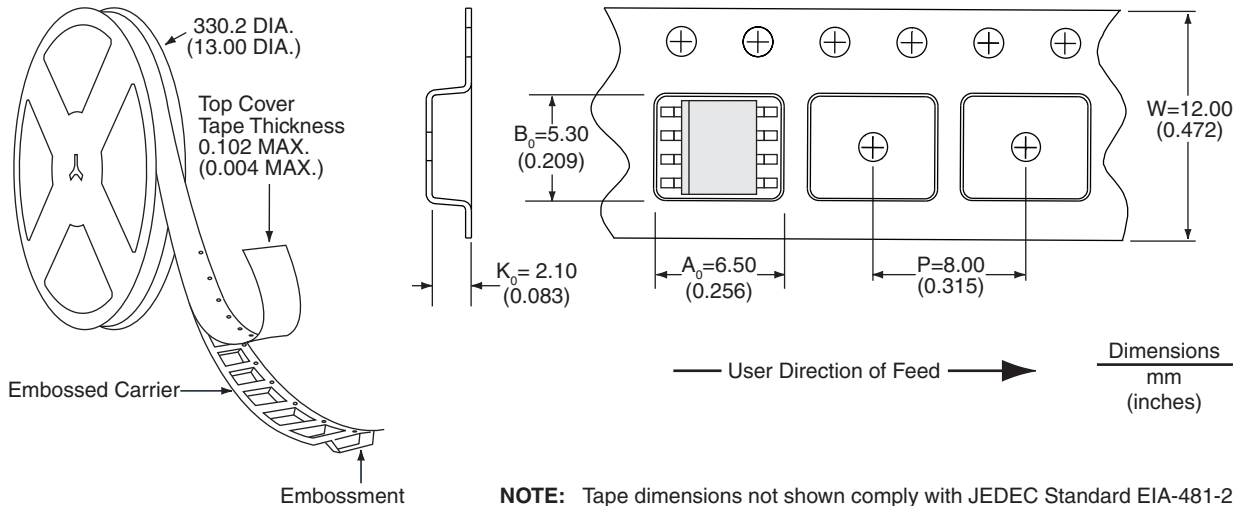
IXYS Integrated Circuits Division recommends the use of no-clean flux formulations. However, board washing to remove flux residue is acceptable, and the use of a short drying bake may be necessary. Chlorine-based or Fluorine-based solvents or fluxes should not be used. Cleaning methods that employ ultrasonic energy should not be used.



3.5 8-Pin SOIC Package Dimensions



3.6 Tape & Reel Dimensions



For additional information please visit www.ixysic.com

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