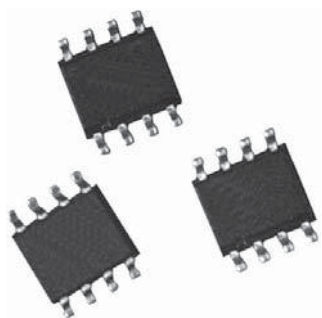


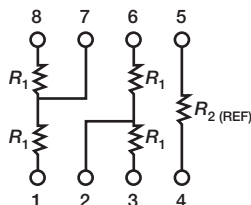
### Molded, 50 mil Pitch, Dual-In-Line Resistor, Surface Mount Network



 Actual Size

Vishay Thin Film ORNV series voltage dividers provide optimum ratio precision, small size and exceptional stability for most applications. They offer a wide ratio range that is listed in the selection guide and are available for immediate delivery. The tight ratio tolerance offered on the standard ratios will provide exceptional performance throughout life.

#### SCHEMATIC



#### FEATURES

- Close ratio tolerance (0.05 %)
- Tight TCR tracking  $\pm 5$  ppm/°C
- 0.068" (1.73 mm) maximum seated height
- Rugged molded case construction with no internal solder (JEDEC MS-012 variation AA package)
- Compliant to RoHS Directive 2002/95/EC
- Halogen-free according to IEC 61249-2-21 definition



**RoHS\***  
COMPLIANT  
HALOGEN  
**FREE**

#### TYPICAL PERFORMANCE

|      | ABSOLUTE | TRACKING |
|------|----------|----------|
| TCR  | 25       | 5        |
|      | ABSOLUTE | RATIO    |
| TOL. | 0.1      | 0.05     |

#### STANDARD RESISTANCE OFFERING

| $R_1$ ( $\Omega$ )<br>(4 Voltage Divider Resistors) | $R_2$ ( $\Omega$ )<br>(Reference) |
|-----------------------------------------------------|-----------------------------------|
| 2K                                                  | 2K                                |
|                                                     | 5K                                |
|                                                     | 10K                               |
| 5K, 10K, 20K, 25K, 50K                              | 5K                                |
|                                                     | 10K                               |
|                                                     | 20K                               |
|                                                     | 25K                               |
|                                                     | 50K                               |

#### Note

- Consult factory for additional values and schematics

#### STANDARD ELECTRICAL SPECIFICATIONS

| TEST                           | SPECIFICATIONS                               | CONDITIONS          |
|--------------------------------|----------------------------------------------|---------------------|
| Material                       | Passivated nichrome                          | -                   |
| Pin/Lead Number                | 8                                            | -                   |
| Resistance Range               | 2 k $\Omega$ to 50 k $\Omega$                | -                   |
| TCR: Absolute                  | $\pm 25$ ppm/°C                              | - 55 °C to + 125 °C |
| TCR: Tracking                  | $\pm 5$ ppm/°C                               | - 55 °C to + 125 °C |
| Tolerance: Absolute            | $\pm 0.1$ %                                  | + 25 °C             |
| Tolerance: Ratio               | $\pm 0.05$ %                                 | + 25 °C             |
| Power Rating: Resistor         | 100 mW                                       | Maximum at + 70 °C  |
| Power Rating: Package          | 400 mW                                       | Maximum at + 70 °C  |
| Stability: Absolute            | $\Delta R \pm 0.05$ %                        | 2000 h at + 70 °C   |
| Stability: Ratio               | $\Delta R \pm 0.015$ %                       | 2000 h at + 70 °C   |
| Voltage Coefficient            | < 0.1 ppm/V                                  | -                   |
| Working Voltage                | 100 V max. not to exceed $\sqrt{P \times R}$ | -                   |
| Operating Temperature Range    | - 55 °C to + 125 °C                          | -                   |
| Storage Temperature Range      | - 55 °C to + 150 °C                          | -                   |
| Noise                          | < - 30 dB                                    | -                   |
| Thermal EMF                    | 0.08 $\mu$ V/°C                              | -                   |
| Shelf Life Stability: Absolute | $\Delta R \pm 0.01$ %                        | 1 year at + 25 °C   |
| Shelf Life Stability: Ratio    | $\Delta R \pm 0.002$ %                       | 1 year at + 25 °C   |

\* Pb containing terminations are not RoHS compliant, exemptions may apply

# ORNV (Divider)

Vishay Thin Film

Molded, 50 mil Pitch,  
Dual-In-Line Resistor, Surface Mount Network



## DIMENSIONS AND IMPRINTING in inches and millimeters

Technical drawing of an ORNV x-x component. The drawing includes three views: a top view, a side view, and a detail view of the mounting tabs.

- Top View:** Shows a rectangular component with four mounting tabs on each long side. Dimensions include:
  - A:** Overall height.
  - B:** Distance from the left edge to the center of the first tab.
  - C:** Distance between the centers of adjacent tabs.
  - D:** Overall width.
- Side View:** Shows the component's profile with dimensions:
  - E:** Height of the top flange.
  - F:** Height of the main body.
  - G:** Total height.
  - Ø:** Diameter of the mounting hole.
- Detail View:** Shows a close-up of the mounting tabs with dimensions:
  - H:** Height of the tab.
  - I:** Width of the tab.

Labels on the top view include "Part Number" and "Date Code". The component is labeled "ORNV x-x" with a dot and four squares below it.

| DIMENSION | INCHES         | MILLIMETERS |
|-----------|----------------|-------------|
| A         | 0.157          | 3.99        |
| B         | 0.0165 ± 0.005 | 0.4 ± 0.06  |
| C         | 0.050          | 1.27        |
| D         | 0.195 max.     | 4.93        |
| E         | 0.008 ± 0.001  | 0.20 ± 0.03 |
| F         | 0.028 ± 0.001  | 0.71 ± 0.02 |
| G         | 0.239 ± 0.005  | 6.07 ± 0.13 |
| H         | 0.068 max.     | 1.73        |
| I         | 0.008 ± 0.002  | 0.22 ± 0.06 |
| Ø         | 2° to 6°       | 2° to 6°    |

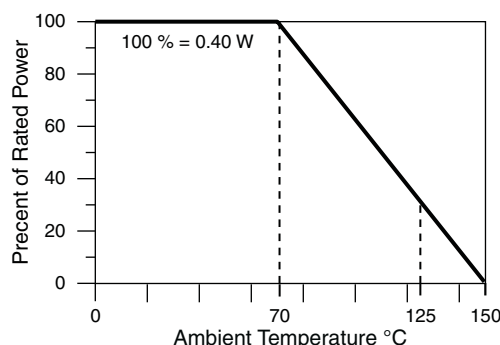
### Note

- Marking - Vishay symbol, part number from ordering information

## MECHANICAL SPECIFICATIONS

|                                    |                     |
|------------------------------------|---------------------|
| Resistive Element                  | Passivated nichrome |
| Substrate Material                 | Silicon             |
| Body                               | Molded epoxy        |
| Terminals                          | Copper alloy        |
| Lead (Pb)-free Option              | 100 % matte tin     |
| Tin Lead Option                    | Sn90                |
| Tin Lead and Lead (Pb)-free Finish | Plated              |

## DERATING CURVE



## GLOBAL PART NUMBER INFORMATION

New Global Part Numbering: ORNV50015001UF

|                                  |   |   |   |                                                                                                                                  |   |   |   |                                                                                                                                  |   |   |   |                                                                                                                                                                                           |   |   |
|----------------------------------|---|---|---|----------------------------------------------------------------------------------------------------------------------------------|---|---|---|----------------------------------------------------------------------------------------------------------------------------------|---|---|---|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|---|
| O                                | R | N | V | 5                                                                                                                                | 0 | 0 | 1 | 5                                                                                                                                | 0 | 0 | 1 | U                                                                                                                                                                                         | F |   |
| O                                | R | N | T | V                                                                                                                                | 5 | 0 | 0 | 1                                                                                                                                | 5 | 0 | 0 | 1                                                                                                                                                                                         | U | F |
| GLOBAL MODEL<br>(4 or 5 digits)  |   |   |   | RESISTANCE                                                                                                                       |   |   |   | (REF.) RESISTANCE                                                                                                                |   |   |   | PACKAGING                                                                                                                                                                                 |   |   |
| ORN<br>(Tin/lead)                |   |   |   | $R_1$<br>The first 3 digits are significant figures and the last digit specifies the number of zeros.<br>Example:<br>5001 = 5 kΩ |   |   |   | $R_2$<br>The first 3 digits are significant figures and the last digit specifies the number of zeros.<br>Example:<br>5001 = 5 kΩ |   |   |   | TAPE AND REEL<br>T0 = 100 min., 100 mult<br>T1 = 1000 min., 1000 mult<br>T3 = 300 min., 300 mult<br>T5 = 500 min., 500 mult<br>TF = Full reel 3000<br>TS = 100 min., 1 mult<br>UF = TUBED |   |   |
| ORNT<br>(Lead (Pb)-free)<br>(e3) |   |   |   |                                                                                                                                  |   |   |   |                                                                                                                                  |   |   |   |                                                                                                                                                                                           |   |   |