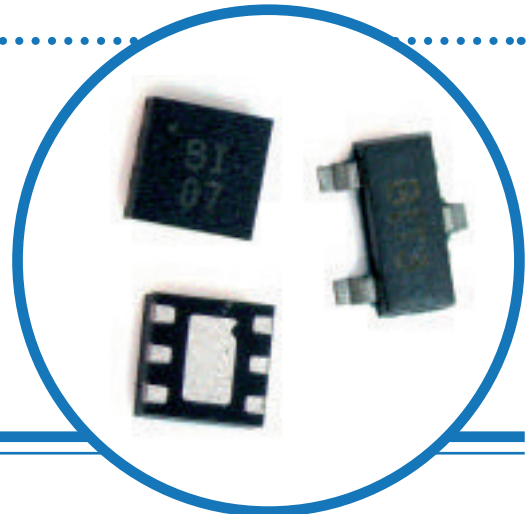


# Nichrome Resistor Networks on Silicon Substrates

SS103VD and SFN06VD series

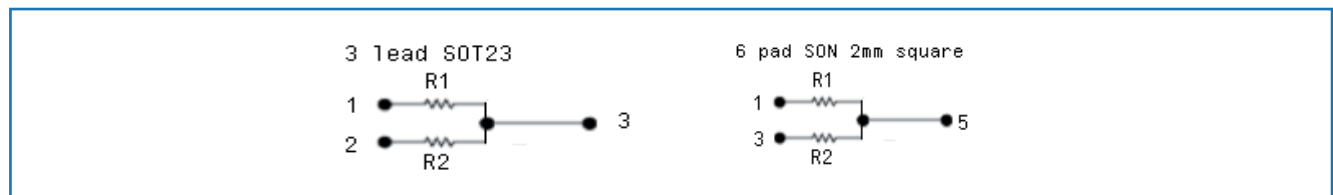
**Voltage divider circuit**  
**Thin film resistor network**  
**RoHS compliant**



## Features

|   |   |
|---|---|
| Precision Nichrome Resistors on Silicon | Passivation coating provides protection in humid environments                                       |
| Industry Standard Packaging             | 6 pad SON <sup>1</sup> 2mm square with 0.65 mm pitch (JEDEC MO-229D)<br>3 lead SOT23 (JEDEC TO-239) |
| Ratio Tolerances                        | < ± 0.05%   |
| TCR Tracking Tolerances                 | < ± 5 ppm/°C  |

## Circuit Schematic



## Electrical<sup>2</sup>

|   |                     |
|---|---------------------|
| Standard Resistance Range                 | 1K ohm to 100K ohms |
| Resistor Tolerances                       | ± 0.25%             |
| Ratio Tolerances                          | ± 0.05%             |
| TCR                                       | Reference TCR table |
| Operating Temperature Range               | -55°C to +125°C     |
| Interlead Capacitance                     | < 2 pF              |
| Insulation Resistance                     | ≥10,000 Megohms     |
| Maximum Operating Voltage                 | 100 Vdc or v PR     |
| Noise, Maximum (MIL-STD-2002, Method 308) | -25 dB              |
| Maximum Package Power @ 70°C              | 0.2 Watts           |

## Resistance Tolerances

| Accuracy Code at 25°C              | CA     | CB     | D     | FA     | F     | G     | J     |
|------------------------------------|--------|--------|-------|--------|-------|-------|-------|
| Absolute Resistance Tolerances (%) | ± 0.25 | ± 0.25 | ± 0.5 | ± 1.0  | ± 1.0 | ± 2.0 | ± 5.0 |
| Ratio Tolerances (R1 Ref) (%)      | ± 0.05 | ± 0.1  | ± 0.1 | ± 0.05 | ± 1.0 | N/A   | N/A   |

1 Small outline no lead (SON) package is also referred to as quad flat no lead (QFN) or dual flat no lead (DFN) packages.

2 Specifications subject to change without notice.

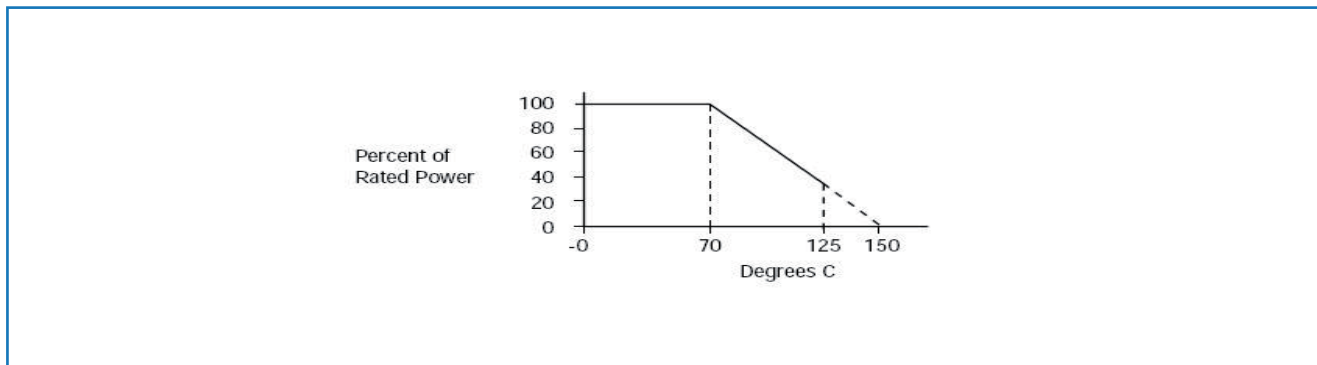
### General Note

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## Temperature Coefficient of Resistance (TCR)

| TCR Code (-55°C to 125°C)  | Q    | P    | S     | L     |
|----------------------------|------|------|-------|-------|
| Absolute (ppm/°C)          | ± 25 | ± 50 | ± 100 | ± 200 |
| Tracking (R1 Ref) (ppm/°C) | ± 5  | ± 5  | N/A   | N/A   |

## Power Derating Curve



## Environmental (Mil-R-83401)

|                                       |                             |
|---------------------------------------|-----------------------------|
| Thermal Shock plus Power Conditioning | ΔR 0.25%                    |
| Short Time Overload                   | ΔR 0.1%                     |
| Moisture Resistance                   | ΔR 0.2%                     |
| Mechanical Shock                      | ΔR 0.25%                    |
| Vibration                             | ΔR 0.25%                    |
| Low Temperature Operation             | ΔR 0.1%                     |
| High Temperature Exposure             | ΔR 0.1%                     |
| Resistance to Solder Heat             | ΔR 0.05%                    |
| Marking Permanency                    | Per MIL-STD-202, Method 215 |
| Storage Temperature Range             | -55°C to +125°C             |

## Mechanical

|                               |                                    |
|-------------------------------|------------------------------------|
| Lead Plating                  | 100 matte Tin (RoHS)               |
| Lead Material                 | Copper Alloy                       |
| Lead Configurations (SLP/SS1) | No lead, Gull Wing                 |
| Lead Coplanarity (SS1 only)   | 0.003" (0.102 mm)                  |
| Substrate Material            | Silicon                            |
| Resistor Material             | Passivated Nichrome                |
| Body Material                 | Molded Epoxy                       |
| Package Types                 | 6 pad SON 2mm square, 3 lead SOT23 |

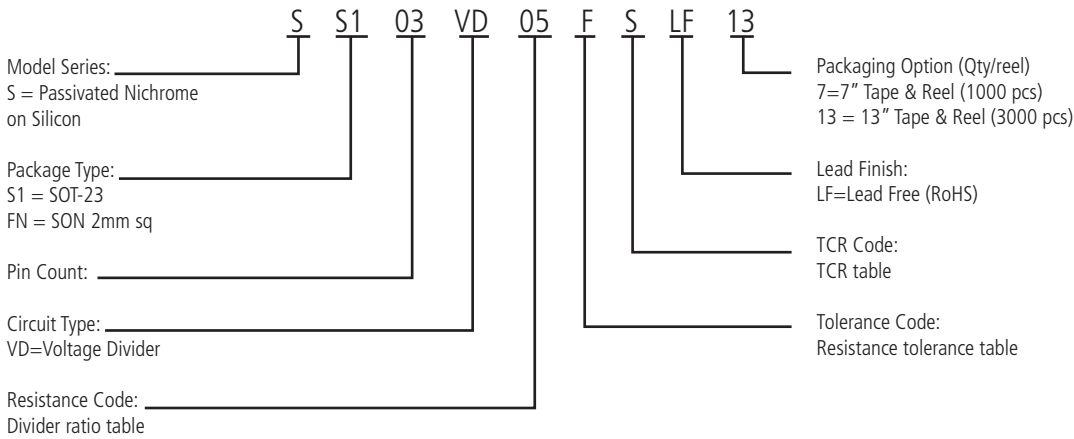
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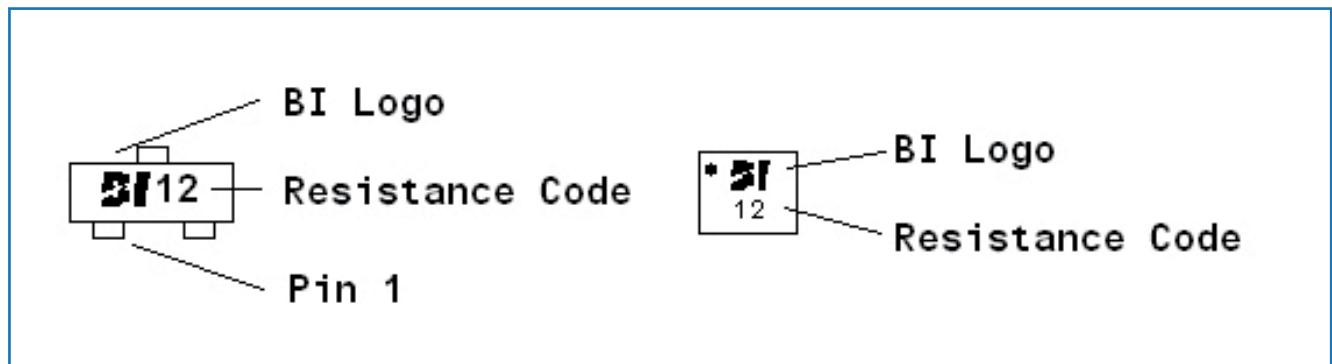
## Divider Ratio

| Resistance Code | Ratio (R2/R1) | R1 (ohms) | R2 (ohms) |
|-----------------|---------------|-----------|-----------|
| 01              | 1.613         | 12.4K     | 20K       |
| 02              | 10            | 10K       | 100K      |
| 03              | 4             | 5K        | 20K       |
| 05              | 1             | 20K       | 20K       |
| 06              | 9             | 11.3K     | 101.7K    |
| 07              | 2             | 10K       | 20K       |
| 08              | 3             | 3.333K    | 10K       |
| 09              | 2             | 5K        | 10K       |
| 10              | 1             | 10K       | 10K       |
| 11              | 2             | 1K        | 2K        |
| 12              | 2             | 50K       | 100K      |

## Ordering Information<sup>3</sup>



## Typical Marking



<sup>3</sup> Contact our customer service for custom designs and features.

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