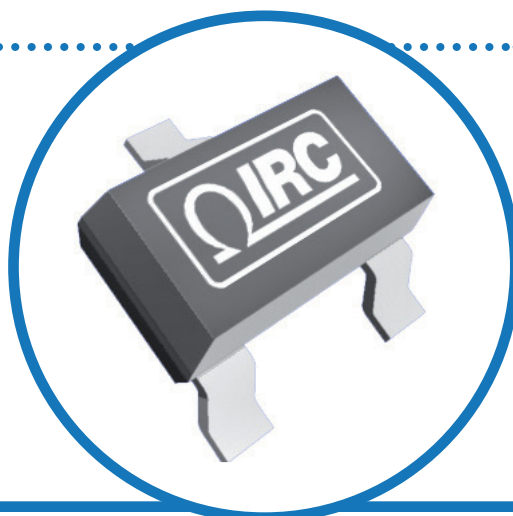


# SOT23 Surface Mount Voltage Divider

DIV23 Series

- Replaces legacy SOT23 Series for new designs
- Precision ratio tolerances to  $\pm 0.05\%$
- Superior alternative to matched sets
- Ultra-stable TaNSil® resistors on silicon substrate
- RoHS Compliant and Sn/Pb terminations available



## Electrical Data

|   |                                      |
|---|--------------------------------------|
| Element Resistance Range  | 10 to 200K $\Omega$                  |
| Total Resistance Range  | 20 to 400K $\Omega$                  |
| Absolute Tolerance  | To $\pm 0.1\%$                       |
| Ratio Tolerance to R1   | To $\pm 0.05\%$                      |
| Absolute TCR  | To $\pm 25\text{ppm}/^\circ\text{C}$ |
| Tracking TCR  | To $\pm 2\text{ppm}/^\circ\text{C}$  |
| Element Power Rating @ 70°C                                     | 125mW                                |
| Package Power Rating @ 70°C                                     | 250mW                                |
| Rated Operating Voltage<br>(not to exceed $\sqrt{P \times R}$ ) | 100 Volts                            |
| Operating Temperature   | -55°C to +125°C                      |
| Noise   | <-30dB                               |

## Environmental Data

| Test Per<br>MIL-PRF-83401 | Typical<br>Delta R | Max Delta<br>R |
|---------------------------|--------------------|----------------|
| Thermal Shock             | $\pm 0.02\%$       | $\pm 0.1\%$    |
| Power Conditioning        | $\pm 0.03\%$       | $\pm 0.1\%$    |
| High Temperature Exposure | $\pm 0.03\%$       | $\pm 0.05\%$   |
| Short-time Overload       | $\pm 0.02\%$       | $\pm 0.05\%$   |
| Low Temperature Storage   | $\pm 0.03\%$       | $\pm 0.05\%$   |
| Life                      | $\pm 0.05\%$       | $\pm 0.1\%$    |

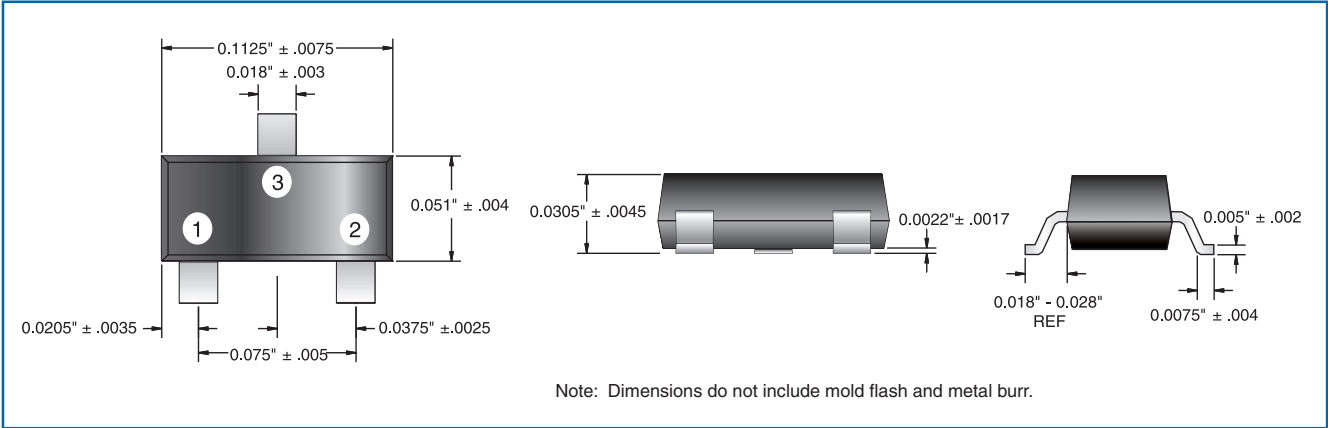
## Manufacturing Capability

| Element Resistance            | Available<br>Absolute Tolerances | Available<br>Ratio Tolerances | Best<br>Absolute TCR               | Tracking TCR                      |
|-------------------------------|----------------------------------|-------------------------------|------------------------------------|-----------------------------------|
| 10 $\Omega$ - 25 $\Omega$     | F G J K                          | D F G                         | $\pm 100\text{ppm}/^\circ\text{C}$ | $\pm 25\text{ppm}/^\circ\text{C}$ |
| 25.1 $\Omega$ - 50 $\Omega$   | D F G J K                        | C D F G                       | $\pm 50\text{ppm}/^\circ\text{C}$  | $\pm 10\text{ppm}/^\circ\text{C}$ |
| 51 $\Omega$ - 500 $\Omega$    | C D F G J K                      | B C D F G                     | $\pm 25\text{ppm}/^\circ\text{C}$  | $\pm 2\text{ppm}/^\circ\text{C}$  |
| 501 $\Omega$ - 100K $\Omega$  | B C D F G J K                    | A B C D F G                   | $\pm 25\text{ppm}/^\circ\text{C}$  | $\pm 2\text{ppm}/^\circ\text{C}$  |
| 101K $\Omega$ - 200K $\Omega$ | B C D F G J K                    | B C D F G                     | $\pm 25\text{ppm}/^\circ\text{C}$  | $\pm 2\text{ppm}/^\circ\text{C}$  |

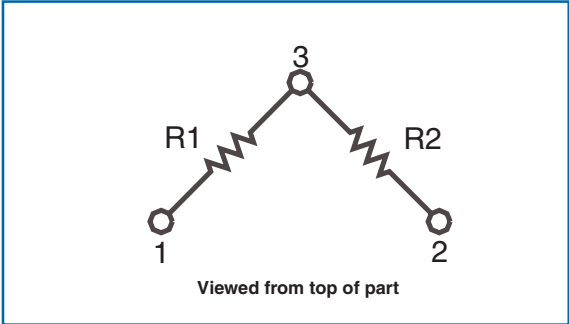
### General Note

TT electronics reserves the right to make changes in product specification without notice or liability.  
All information is subject to TT electronics' own data and is considered accurate at time of going to print.

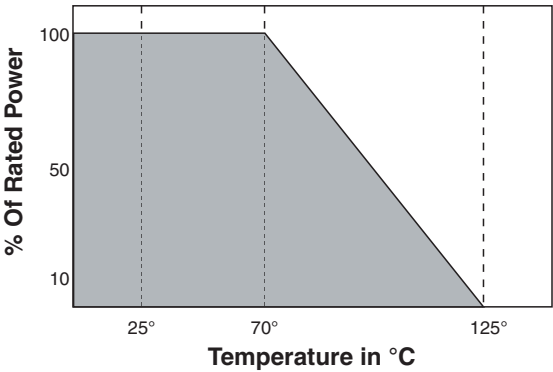
Physical Data



Schematic Data



Power Derating Data



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## Ordering Procedure

This product has two valid part numbers:

**European (Welwyn) Part Number: D23-1K0-3K3FB** (25ppm/°C, R1=1 kilohm, R2=3.3 kilohms, absolute tolerance ±1%, ratio tolerance ±0.1%, Pb-free)

|   |   |   |  |   |   |   |   |   |   |   |   |   |   |  |  |
|---|---|---|--|---|---|---|---|---|---|---|---|---|---|--|--|
| D | 2 | 3 |  | - | 1 | K | 0 | - | 3 | K | 3 | F | B |  |  |
| 1 | 2 |   |  |   | 3 |   |   |   | 4 | 5 | 6 |   | 7 |  |  |

| 1              | 2                  | 3   | 4        | 5                  | 6               | 7                                  |
|----------------|--------------------|---|----------|--------------------|-----------------|------------------------------------|
| Type           | Absolute TCR       | Value R1  | Value R2 | Absolute Tolerance | Ratio Tolerance | Termination & Packing              |
| D23 =<br>DIV23 | Omit for ±25ppm/°C | E24 = 3/4 characters<br>E96 = 3/4 characters<br>R = ohms<br>K = kilohms |          | B = ±0.1%          | A = ±0.05%      | Omit for Pb-free,<br>Standard pack |
|                | 02 = ±50ppm/°C     |   |          | C = ±0.25%         | B = ±0.1%       |                                    |
|                | 01 = ±100ppm/°C    |   |          | D = ±0.5%          | C = ±0.25%      | PB = SnPb finish,<br>Standard pack |
|                | 00 = ±250ppm/°C    |   |          | F = ±1%            | D = ±0.5%       | 1000/reel                          |
|                |                    |   |          | G = ±2%            | F = ±1%         |                                    |
|                |                    |   |          | J = ±5%            | G = ±2%         |                                    |
|                |                    |   |          | K = ±10%           |                 |                                    |

Note that this is equivalent to the legacy part number **SOT23-3K3-1K0FB** in which positions of R1 and R2 were transposed.

**USA (IRC) Part Number: SOT-DIV23LF-03-1001-3301-FB** (25ppm/°C, R1=1 kilohm, R2=3.3 kilohms, absolute tolerance ±1%, ratio tolerance ±0.1%, Pb-free)

|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S | O | T | - | D | I | V | 2 | 3 | L | F | - | 0 | 3 | - | 1 | 0 | 0 | 1 | - | 3 | 3 | 0 | 1 | - | F | B |
| 1 |   | 2 |   |   |   | 3 |   | 4 |   | 5 |   |   |   | 6 |   |   |   | 7 |   | 8 |   |   |   |   |   |   |

| 1      | 2     | 3                        | 4               | 5   | 6        | 7                  | 8               |           |
|--------|-------|--------------------------|-----------------|---|----------|--------------------|-----------------|-----------|
| Family | Model | Termination              | Absolute TCR    | Value R1  | Value R2 | Absolute Tolerance | Ratio Tolerance | Packing   |
| SOT    | DIV23 | Omit for SnPb<br>(60/40) | 03 = ±25ppm/°C  | 3 digits + multiplier<br>R = ohms for<br>values <100 ohms |          | B = ±0.1%          | A = ±0.05%      | 1000/reel |
|        |       |                          | 02 = ±50ppm/°C  |   |          | C = ±0.25%         | B = ±0.1%       |           |
|        |       | LF = Pb-free<br>(100%Sn) | 01 = ±100ppm/°C |   |          | D = ±0.5%          | C = ±0.25%      |           |
|        |       |                          | 00 = ±250ppm/°C |   |          | F = ±1%            | D = ±0.5%       |           |
|        |       |                          |                 |   |          | G = ±2%            | F = ±1%         |           |
|        |       |                          |                 |   |          | J = ±5%            | G = ±2%         |           |
|        |       |                          |                 |   |          | K = ±10%           |                 |           |

Note that this is equivalent to the legacy part number **SOT-SOT23LF-03-3301-1001-FB** in which positions of R1 and R2 were transposed.

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