

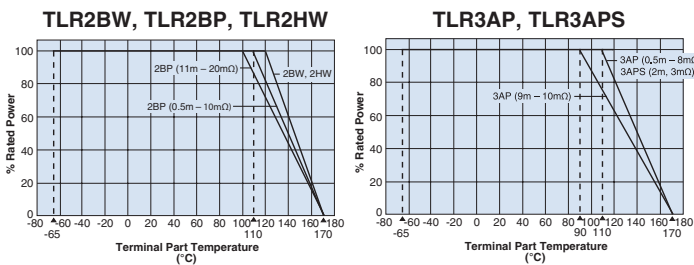
features

- Ultra-low TCR (+50ppm/°C) available
- Metal alloy: superior corrosion and heat resistance
- Applications include current sensing, voltage division and pulse applications
- Ultra low resistance (0.5mΩ - 20mΩ)
- Suitable for reflow soldering (Not suitable for flow soldering)
- Products with lead-free terminations meet EU RoHS and China RoHS requirements
- AEC-Q200 Qualified

dimensions and construction



Derating Curve



For resistors operated at a terminal part temperature of described for each size or above, a power rating shall be derated in accordance with the derating curve. Please refer to "Introduction of the derating curve based in the terminal part temperature" in the beginning of our catalog before use.

| Size Code | Resistance | Dimensions inches (mm) | | | |
|-----------|------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| | | L | W | d | t |
| TLR2BW | New 0.5mΩ | | | .049±.008 (1.25±0.20) | .028±.008 (0.70±0.20) |
| | 1mΩ | .126±.008 (3.20±0.20) | .063±.008 (1.60±0.20) | .043±.008 (1.10±0.20) | .024±.008 (0.60±0.20) |
| | New 1.5mΩ | | | .020±.008 (0.50±0.20) | |
| TLR2BP | New 0.5mΩ | | | .049±.008 (1.25±0.20) | .028±.008 (0.70±0.20) |
| | 1mΩ, 1.5mΩ | .126±.008 (3.20±0.20) | .063±.008 (1.60±0.20) | .043±.008 (1.10±0.20) | .024±.008 (0.60±0.20) |
| | 2mΩ - 20mΩ | | | .020±.008 (0.50±0.20) | |
| TLR2HW | New 0.5mΩ | | | .075±.008 (1.90±0.20) | .028±.008 (0.70±0.20) |
| | 1mΩ | .200±.008 (5.00±0.20) | .100±.008 (2.50±0.20) | .071±.008 (1.80±0.20) | .026±.008 (0.65±0.20) |
| | 2mΩ - 6mΩ | | | .060±.008 (1.50±0.20) | .024±.008 (0.60±0.20) |
| | 7mΩ - 10mΩ | | | .020±.008 (0.50±0.20) | |
| TLR3AP | 0.5mΩ | | | .107±.01 (2.725±0.25) | |
| | 0.68mΩ, 0.75mΩ, 0.82mΩ | | | .105±.01 (2.675±0.25) | |
| | 1mΩ, 1.5mΩ, 3mΩ, 4mΩ | .25±.01 (6.35±0.25) | .125±.01 (3.18±0.25) | .087±.01 (2.20±0.25) | .024±.01 (0.62±0.25) |
| | 2mΩ | | | .098±.01 (2.50±0.25) | |
| | 5mΩ, 6mΩ, 7mΩ, 8mΩ | | | .047±.01 (1.20±0.25) | |
| | 9mΩ, 10mΩ | | | .030±.01 (0.77±0.25) | |
| TLR3APS | 2mΩ, 3mΩ | .25±.01 (6.35±0.25) | .125±.01 (3.18±0.25) | .047±.01 (1.20±0.25) | .024±.01 (0.60±0.25) |

ordering information

| | | | | | | |
|------------|--|----------------------|---|---|-----------|------------------------------|
| TLR | 2BW | D | TD | 10L0 | F | 75 |
| Type | Power Rating | Termination Material | Packaging | Nominal Resistance | Tolerance | T.C.R. |
| | 2BW: 1W 2BP: 1.5W 2HW: 2W 3AP: 3W, 5W (New) 3APS: 3W | D: SnAgCu | TD: 7" 4mm pitch punched paper TE: 7" 4mm embossed plastic | ±1%: 4 digits All values less than 0.1Ω (100m) are expressed in mW with "L" as decimal Ex: 2mΩ = 2L00 | F: ±1% | 50: 50ppm/°C 75: 75ppm/°C |

For further information on packaging, please refer to Appendix A.

Specifications given herein may be changed at any time without prior notice. Please confirm technical specifications before you order and/or use.

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applications and ratings

current sense

| Part Designation | Power Rating | T.C.R. (ppm/°C) Max.** | Standard Resistance (Ω) | Resistance Tolerance | Rated Terminal Part Temperature | Operating Temperature Range |
|------------------|--------------|------------------------|--|----------------------|---------------------------------|-----------------------------|
| TLR2BW | 1W | ±50 | 2m,3m,4m,5m,6m,7m,8m,9m,10m,11m,12m,13m,15m,16m,18m,20m | F: ±1% | +120°C and less | -65°C to +170°C |
| | | ±75 | 0.5m,1m,1.5m,2m,3m,4m,5m,6m,7m,8m,9m,10m,11m,12m,13m,15m,16m,18m,20m | | | |
| TLR2BP | 1.5W | ±50 | 2m,3m,4m,5m,6m,7m,8m,9m,10m,11m,12m,13m,15m,16m,18m,20m | F: ±1% | +110°C and less | -65°C to +170°C |
| | | ±75 | 0.5m,1m,1.5m,2m,3m,4m,5m,6m,7m,8m,9m,10m | | +100°C and less | |
| | | ±50 | 2m,3m,4m,5m,6m,7m,8m,9m,10m | | +110°C and less | |
| | | ±75 | 11m,12m,13m,15m,16m,18m,20m | | +100°C and less | |
| TLR2HW | 2W | ±50 | 0.5m,1m,2m,2.5m,3m,4m,5m,6m,7m,8m,9m,10m | F: ±1% | +120°C and less | -65°C to +170°C |
| TLR3AP | 3W | ±50 | 2m,3m,4m,5m,6m,7m,8m,9m,10m | F: ±1% | 0.5m ~ 8m: +110°C and less | -65°C to +170°C |
| | | ±75 | 0.5m,0.68m,0.75m,0.82m,1m,1.5m,2m,3m,4m,5m,6m,7m,8m,9m,10m | | 9m, 10m: +90°C and less | |
| | 5W (New) | ±50 | 2m,3m,4m | F: ±1% | +110°C and less | -65°C to +170°C |
| | | ±75 | 1m,2m,3m,4m | | | |
| TLR3APS | 3W | ±50, ±75 | 2m,3m | F: ±1% | +110°C and less | -65°C to +170°C |

environmental applications

One-Pulse Limiting Electric Power



The maximum applicable voltage is equal to the max. overload voltage. Please ask us about the resistance characteristic of continuous applied pulse. The pulse endurance values are not assured values, so be sure to check the products on actual equipment when you use them.

Thermal Resistance

| Type | Size | Resistance (Ω) | Rth (°C/W) |
|------|------|----------------|------------|
| TLR | 2BW | 0.5m | 7.2 |
| | | 20m | 116 |
| | 2HW | 0.5m | 9 |
| | | 10m | 61.1 |
| | 3AP | 0.5m | 6 |
| | | 10m | 62 |

$$R_{th} = (H_s - t_s) / \text{Power}$$

Regarding the temperature rise, the value of the temperature varies per conditions and board for use since the temperature is measured under our measuring conditions. Please refer to us before use.



The temperature of the resistor will increase the same ΔT from the standard terminal part temperature regardless of the ambient temperature when the same power is applied. This is because there is hardly any heat dissipation from the resistor surface to the ambient air.

Performance Characteristics

| Parameter | Requirement $\Delta R \pm\%$ | | Test Method |
|--|------------------------------|---------|---|
| | Limit | Typical | |
| Resistance | Within regulated tolerance | — | 25°C |
| T.C.R. | Within specified T.C.R. | — | +25°C/+125°C |
| Resistance to Solder Heat | ±0.5% | ±0.3% | 260°C ± 5°C, 10 ± 2 seconds |
| Rapid Change of Temperature | ±0.5% | ±0.3% | -55°C (15 minutes), +150°C (15 minutes), 1000 cycles |
| Moisture Resistance | ±0.5% | ±0.1% | MIL-STD-202-106, 0% power, 7a and 7b not required |
| Biased Humidity | ±0.5% | ±0.1% | 85°C ± 2°C, 85% RH, 1000 hours, 10% bias |
| Endurance of Rated Terminal Part Temperature | ±1.0% | ±0.3% | 120°C ± 2°C (2BW, 2HW), 110°C ± 2°C (3AP 0.5mΩ-8mΩ) 90°C ± 2°C (3AP 9mΩ-10mΩ), 110°C ± 2°C (2BP 1mΩ-10mΩ) 100°C ± 2°C (2BP 11mΩ-20mΩ), 110°C ± 2°C (3APS 2mΩ, 3mΩ) 1000 hours, 1.5 hr ON, 0.5 hr OFF cycle |
| High Temperature Exposure | ±1.0% | ±0.6% | ±155°C, 1000 hours |
| | ±2.0% | ±0.8% | ±170°C, 1000 hours |

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Компания «ЭлектроПласт» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Оперативные поставки широкого спектра электронных компонентов отечественного и импортного производства напрямую от производителей и с крупнейших мировых складов;
- Поставка более 17-ти миллионов наименований электронных компонентов;
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

Помимо этого, одним из направлений компании «ЭлектроПласт» является направление «Источники питания». Мы предлагаем Вам помощь Конструкторского отдела:

- Подбор оптимального решения, техническое обоснование при выборе компонента;
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



Как с нами связаться

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