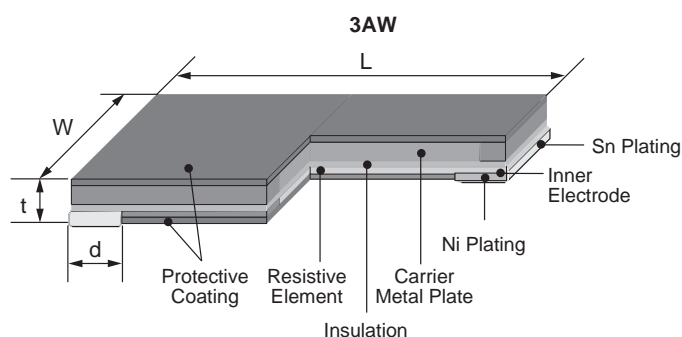


## features

- SMD Type of small size, low resistance resistor for current detection
- Carrier metal plate inside, resistor of high radiation of heat structure (3AW, 3AP)
- High reliability and performance with low T.C.R.
- Automatic mounting machines are applicable (Not applicable for flow soldering)
- Body color: Black protective top coating, 2A: no marking; 3AW 4 digit marking
- Products with lead-free terminations meet EU RoHS requirements
- AEC-Q200 Qualified



## dimensions and construction



| Size Code (Inch)    | Dimensions inches (mm)   |                          |                          |                          |
|---------------------|--------------------------|--------------------------|--------------------------|--------------------------|
|                     | L                        | W                        | d                        | t                        |
| TLRH 2A (0805)      | .079±.008<br>(2.00±0.20) | .049±.008<br>(1.25±0.20) | .014±.008<br>(0.35±0.20) | .010±.006<br>(0.25±0.15) |
| TLRH 3AW (2512)     | .248±.008<br>(6.30±0.20) | .126±.008<br>(3.20±0.20) | .030±.008<br>(0.75±0.20) | .020±.008<br>(0.50±0.20) |
| NEW TLRH 3AP (2512) | .248±.008<br>(6.30±0.20) | .126±.008<br>(3.20±0.20) | .071±.008<br>(1.8±0.20)  | .020±.008<br>(0.50±0.20) |
|                     |                          |                          | .051±.008<br>(1.3±0.20)  |                          |

## ordering information

| New Part #                | TLRH | 3AW   | T     | TE   | 33L0  | F      |
|---------------------------|------|---|-------|--|---|--------|
| Type                      |      |   |       |  |   |        |
| Power Rating              |      | 2A (10~27mΩ): 0.5W<br>(33~50mΩ): 0.33W<br>(56~100mΩ): 0.25W<br>3AW: 2.0W<br>New 3AP: (6~39mΩ): 5.0W<br>(40~120mΩ): 4.0W |       |  |   |        |
| Terminal Surface Material |      |   | T: Sn |  |   |        |
| Packaging                 |      |   |       | 2A: TD: 7" 4mm pitch punched paper<br>3AW, 3AP: TE: 7" punched plastic |   |        |
| Nominal Resistance        |      |   |       |  | ±1%: 4 digits<br>Example<br>33L0: 33mΩ<br>R100: 100mΩ<br>2A: no marking |        |
| Tolerance                 |      |   |       |  |   | F: ±1% |

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.

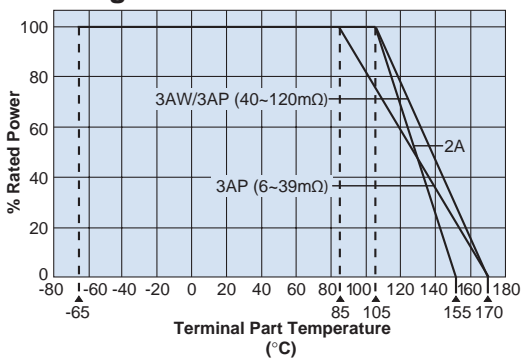
11/05/15

## applications and ratings

| Part Designation | Power Rating     | T.C.R. (x10 <sup>-6</sup> /K) | Resistance Range (Ω)<br>F: ±1% (E12) | Tolerance | Rated Terminal Part Temperature | Operating Temperature Range |
|------------------|------------------|-------------------------------|--------------------------------------|-----------|---------------------------------|-----------------------------|
| TLRH 2A          | 0.25W            | ±75                           | 56m~100m                             | F: ±1%    | +105°C                          | -65°C~+155°C                |
|                  | <b>New</b> 0.33W |                               | 33m ~ 50m                            |           |                                 |                             |
|                  | <b>New</b> 0.50W |                               | 10m ~ 27m                            |           |                                 |                             |
| TLRH 3AW         | 2.0W             | 10m~22m                       |                                      |           |                                 |                             |
|                  |                  | ±75                           | 24m~270m                             |           |                                 |                             |
| TLRH 3AP         | 4.0W             | ±50                           | 40m, 47m, 50m, 56m~120m              |           | 85°C                            | -65°C~+170°C                |
|                  | 5.0W             | ±50                           | 18m, 20m, 22m, 25m~39m               |           |                                 |                             |
|                  |                  | ±75                           | 6m, 7m, 8m, 9m, 10m, 12m             |           |                                 |                             |

## environmental applications

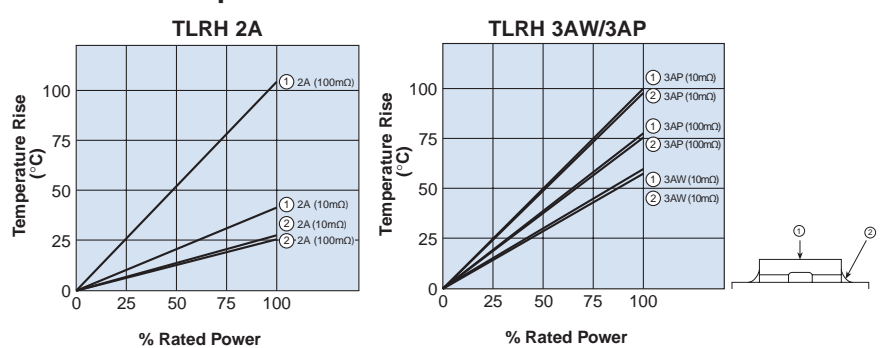
### Derating Curve



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 on the terminal part temperature" on the beginning of our catalog before use.

### Temperature Rise



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 contact factory prior to use.

## Performance Characteristics

| Parameter  | Requirement Δ R%           |                               | Test Method  |
|--|----------------------------|-------------------------------|--|
|  | Limit                      | Typical                       |  |
| Resistance   | Within specified tolerance | —                             | 25°C   |
| T.C.R.   | Within specified T.C.R.    | —                             | +25°C/+100°C   |
| Overload (Short time)                                    | ±0.5%                      | 2A: ±0.05%<br>3AW,3AP: ±0.2%  | 2A, 3AW: Rated power x 2.5 for 5 seconds<br>3AP: Rated power x 8W for 5 seconds                              |
| Resistance to Soldering Heat                             | ±0.5%                      | ±0.1%                         | 260°C ±5°C, 10 seconds ~ 12 seconds  |
| Rapid Change of Temperature                              | ±0.5%                      | 2A: ±0.2%<br>3AW,3AP: ±0.1%   | -55°C (15min.)/+150°C (15min.) 1000 cycles   |
| Moisture Resistance                                      | ±0.5%                      | ±0.1%                         | 85°C ±2°C, 85% RH, 1000 hours, 10% Bias  |
| Endurance at 105°C and Less of Terminal Part Temperature | ±1%                        | 2A: ±0.45%<br>3AW,3AP: ±0.3%  | 2A, 3AW, 3AP (40~120mΩ): 105°C, ±2°C; 3AP (6~39mΩ): 85°C ±2°C<br>1000 hours, 1.5 hours ON/0.5 hour OFF cycle |
| Low Temperature Exposure                                 | ±0.5%                      | 2A: ±0.05%<br>3AW,3AP: ±0.02% | -65°C, 96 hours  |
| High Temperature Exposure                                | ±1%                        | 2A: ±0.5%<br>3AW,3AP: ±0.2%   | 2A: +155°C, 1000 hours (6~12mΩ)<br>3AW, 3AP: +170°C±3°C, 1000 hours (18~120mΩ)                               |
|  | ±2%                        |                               | 3AP: +170°C±3°C, 1000 hours (6~12mΩ)   |

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3/07/16



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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