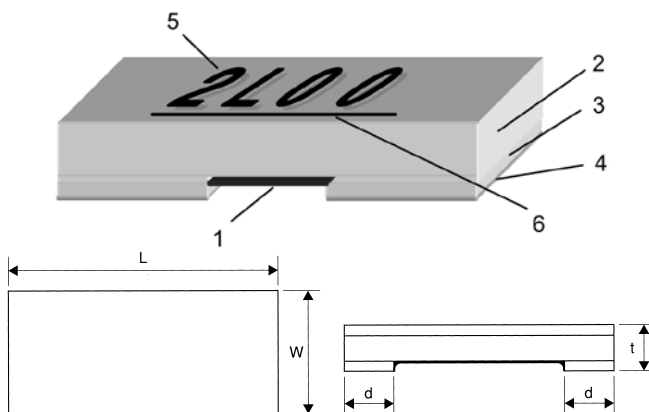


# METAL PLATE CURRENT SENSING MILLIOHM CHIP TLR

**NEW**



## STRUCTURE

- 1 Heat resistant protective coating
- 2 Resistive element: Metal alloy
- 3 Termination: Cu metal
- 4 Solder
- 5 Marking
- 6 Underline

## IDENTIFICATION

| PRODUCT CODE | COATING COLOR | MARKING                       |
|--------------|---------------|-------------------------------|
| TLR (TCR 75) | No coating    | Black, 4 digits and underline |

All these products have  
Pb-free terminations  
and meet RoHS requirements

## TYPE DESIGNATION (HOW TO ORDER)

| TLR          | 3AW                                           | D                              | TE                                                                                                            | 5L00                              | F                                    | 75                                                            |
|--------------|-----------------------------------------------|--------------------------------|---------------------------------------------------------------------------------------------------------------|-----------------------------------|--------------------------------------|---------------------------------------------------------------|
| PRODUCT CODE | POWER RATING<br>2B: 0.5W<br>2H: 1W<br>3AW: 2W | TERMINAL MATERIAL<br>D: SnAgCu | TAPING*<br>TD: punch paper tape (only 2B)<br>TE: embossed plastic tape<br>BK: Bulk<br>*Please see "PACKAGING" | NOMINAL RESISTANCE<br>F: 4 digits | RESISTANCE TOLERANCE<br>F: $\pm 1\%$ | T.C.R. (ppm/K)<br>75: $\pm 75$<br>"Blank": $\pm 150, \pm 200$ |

## FEATURES

- Ultra low resistances (1 mΩ ~)
- High reliability and performance with resistance tolerance  $\pm 1\%$  and T.C.R.  $\pm 75\text{ppm/K}$
- Suitable for large current detecting
- Ultra low height with a thickness of 0.6 mm
- Suitable for use in small equipment
- Non-inductive type
- Excellent high frequency characteristics
- Automatic mounting machine is applicable
- Ideal for use in DC-DC converter, as current detection for CPU's, in motor control units and in inverter power supplies
- Meets or exceeds IEC 60115-1, JIS C 5201-1
- Suitable for reflow soldering
- Rated ambient temperature:  $+70^\circ\text{C}$
- Operating temperature range:  $-65^\circ\text{C} \dots +170^\circ\text{C} (+155^\circ\text{C})$

## DIMENSIONS (mm)

| TYPE    | RESISTANCE (Ω) | L               | W               | d              | t              |
|---------|----------------|-----------------|-----------------|----------------|----------------|
| TLR 2B  | 2 mΩ ... 20 mΩ | $3.2 \pm 0.2$   | $1.6 \pm 0.2$   | $0.5 \pm 0.2$  | $0.6 \pm 0.2$  |
|         | 1 mΩ           |                 |                 | $1.8 \pm 0.2$  | $0.65 \pm 0.2$ |
| TLR 2H  | 2 mΩ ... 6 mΩ  | $5.0 \pm 0.2$   | $2.5 \pm 0.2$   | $1.5 \pm 0.2$  | $0.6 \pm 0.2$  |
|         | 7 mΩ ... 10 mΩ |                 |                 | $0.5 \pm 0.2$  |                |
| TLR 3AW | 2 mΩ           | $6.35 \pm 0.25$ | $3.18 \pm 0.25$ | $2.5 \pm 0.25$ | $0.6 \pm 0.25$ |
|         | 3 mΩ ... 4 mΩ  |                 |                 | $2.2 \pm 0.25$ |                |
|         | 5 mΩ ... 8 mΩ  |                 |                 | $1.2 \pm 0.25$ |                |

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

## RATING

| NEW: TCR75 |         |                                                        |               |                                                                |                      |                                              |
|------------|---------|--------------------------------------------------------|---------------|----------------------------------------------------------------|----------------------|----------------------------------------------|
| SIZE       | TYPE    | T.C.R. (ppm/K)                                         | POWER RATING* | RESISTANCE RANGE (Ω)                                           | RESISTANCE TOLERANCE | OPERATING TEMP. RANGE                        |
| 1206       | TLR 2B  | $\pm 75$<br>( $\pm 50$ and $\pm 150$ )**<br>on request | 0.5W          | 2m, 3m, 4m, 5m, 6m, 8m, 10m, 11m, 12m, 13m, 15m, 16m, 18m, 20m | F ( $\pm 1\%$ )      | $-65^\circ\text{C} \dots +155^\circ\text{C}$ |
| 2010       | TLR 2H  |                                                        | 1.0W          | 1m, 2m, 3m, 4m, 5m, 6m, 7m, 8m, 9m, 10m                        |                      |                                              |
| 2512       | TLR 3AW |                                                        | 2.0W          | 2m, 3m, 4m, 5m, 6m, 7m, 8m                                     |                      | $-65^\circ\text{C} \dots +170^\circ\text{C}$ |

\* For resistors operated at an ambient temperature over  $+70^\circ\text{C}$  or above, the power rating shall be derated in accordance with the above derating curve.

\*\* If T.C.R.  $\pm 50\text{ppm/K}$  or  $\pm 150\text{ppm/K}$  are required, please order detailed specifications from KOA Europe.

Also available on request is TLR3A (2512, 1W, 1mΩ...4mΩ, TCR $\pm 150\text{ppm/K}$ ) with an Operating Temperature Range:  $-65^\circ\text{C} \dots +170^\circ\text{C}$ .

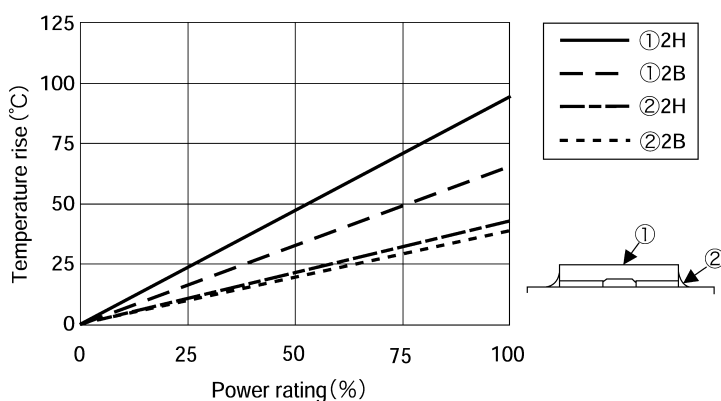
**Precautions:** Please note that the resistance value might change after soldering depending on the shape and the size of the pad pattern or the solder amount. Please order technical specification for this product before you order and use this series.

Rated voltage =  $\sqrt{\text{Power rating} \times \text{resistance value}}$  or max. working voltage, whichever is lower.

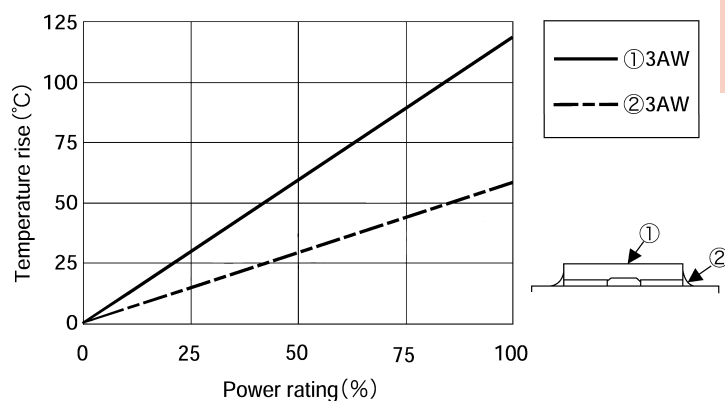
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### TEMPERATURE RISE

#### TLR2B/2H 8mΩ

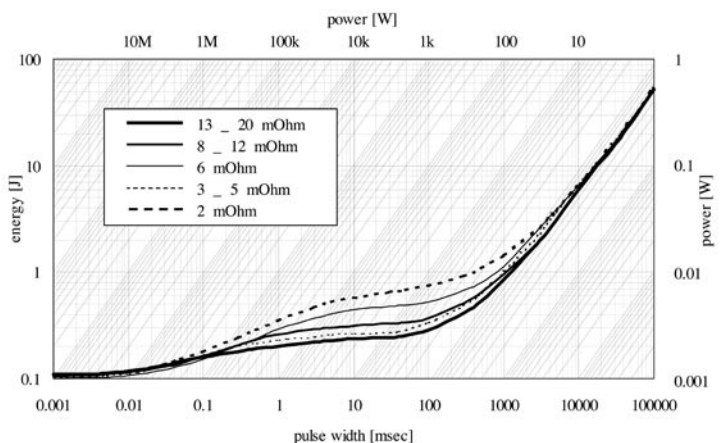


#### TLR3AW 4mΩ

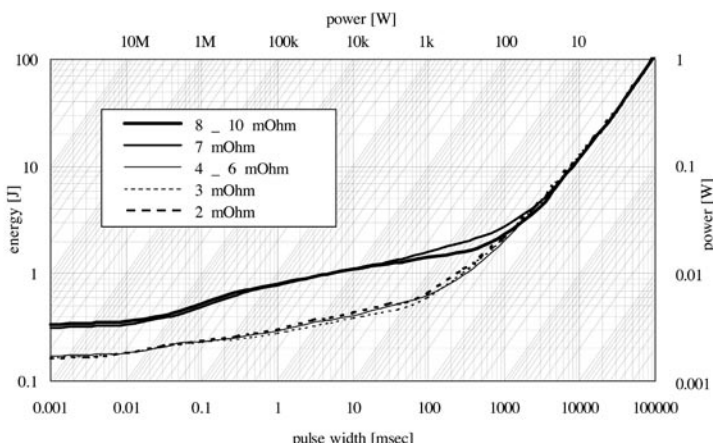


Regarding the temperature rise, the value of the temperature varies per conditions and board for use since the temperature is measured under our measuring conditions.

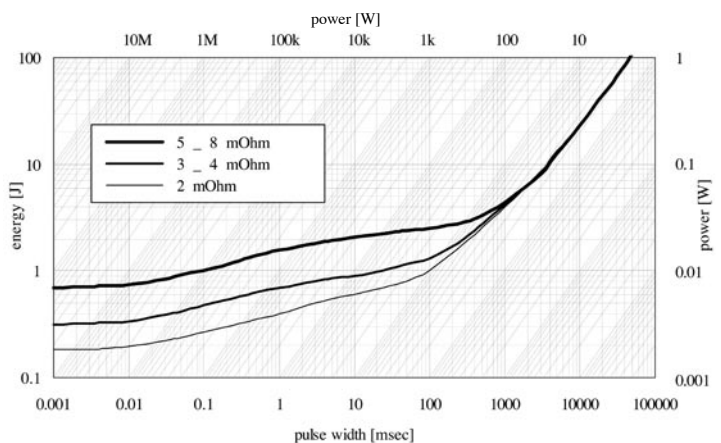
### ONE PULSE LIMIT TLR2B 75ppm



### ONE PULSE LIMIT TLR2H 75ppm



### ONE PULSE LIMIT TLR3AW 75ppm



### DERATING CURVE

