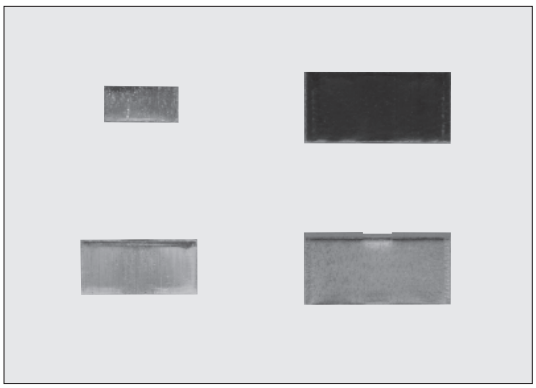
NEW EU RoHS

TLR2BW · TLR2HW · TLR3AP 金属板贴片式低电阻器

Metal Plate Chip Type Low Resistance Resistors



外观颜色：黑色（3AP（0.5m～1.5mΩ））
Coating color: Black (3AP (0.5m～1.5mΩ))

■ 特点 Features

- 是超低电阻（0.5mΩ～）器，适用于对大电流的检测。
- 厚度0.6mm超低背型，适于对小型设备的使用。
- 高频率特性优异。
- 无焊脚产品。(此产品的焊接部分只有电极底面。)
- 可以自动安装。
- 对应回流焊接。（不对应波峰焊。）
- 符合欧盟RoHS。
- AEC-Q200相关数据已取得。
- Ultra low resistances (0.5mΩ～), suitable for large current sensing.
- Ultra low height with a thickness of 0.6mm, suitable for use of small equipment.
- Excellent high-frequency characteristics.
- Filletless products. (The soldering part of this product is only a bottom electrode.)
- Automatic mounting machines are applicable.
- Suitable for reflow soldering. (Not suitable for flow soldering)
- Products meet EU-RoHS requirements.
- AEC-Q200 qualified.

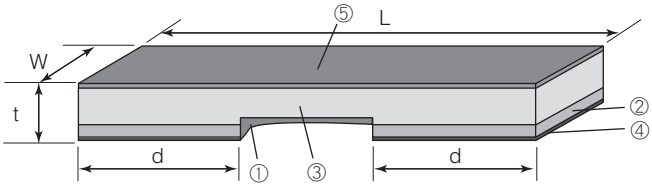
■ 用途 Applications

- CPU的电流检测。
- 换流器电源。
- DC-DC换流器。
- 移动设备。
- Current sensing for CPU
- Inverter power supplies
- DC-DC converters
- Mobile device etc.

■ 参考标准 Reference Standards

IEC 60115-1
JIS C 5201-1

■ 结构图 Construction



①	保护膜	Protective bottom coating TLR2BW（2～5mΩ） TLR2HW（1～3mΩ） TLR3AP（0.5m～1.5mΩ）	②	电极	Electrode
③	电阻体	Resistive element	④	焊锡	Solder
⑤	保护膜	Protective top coating (3AP (0.5m～1.5mΩ))			

■ 外形尺寸 Dimensions

型 号 Type	电阻值（Ω） Resistance	尺寸 Dimensions（mm） L	W	d	t
TLR2BW（1206）	2m, 3m, 4m, 5m, 6m, 7m, 8m, 9m, 10m, 11m, 12m, 13m, 15m, 16m, 18m, 20m	3.2±0.2	1.6±0.2	0.5±0.2	0.6±0.2
TLR2HW（2010）	1m	5.0±0.2	2.5±0.2	1.8±0.2	0.65±0.2
	2m, 3m, 4m, 5m, 6m			1.5±0.2	0.6±0.2
	7m, 8m, 9m, 10m			0.5±0.2	
TLR3AP（2512）	0.5m	6.35±0.25	3.18±0.25	2.725±0.25	0.62±0.25
	0.68m, 0.75m, 0.82m			2.675±0.25	
	1m, 1.5m, 3m, 4m			2.20±0.25	
	2m			2.50±0.25	
	5m, 6m, 7m, 8m			1.20±0.25	
	9m, 10m			0.77±0.25	

■品名构成 Type Designation

实例 Example

TLR	2BW	D	TD	10L0	F	75
品种 Product Code	额定功率 Power Rating	端子表面材质 Termination Surface Material	二次加工 Taping	公称电阻值※1 Nominal Resistance	阻值允许偏差 Resistance Tolerance	电阻温度系数 T.C.R.（×10⁻⁶/K）
	2BW：1.0W 2HW：2.0W 3AP ：3.0W	D:SnAgCu	TD：4mm pitch punch paper TE：Plastic embossed BK：Bulk	F：4 digits	F: ±1%	75:±75

※1

电阻值范围（Ω） Resistance Value	4位显示 4 digits
0.5m～0.82m	L500～L820
1m～9m	1L00～9L00
10m～20m	10L0～20L0

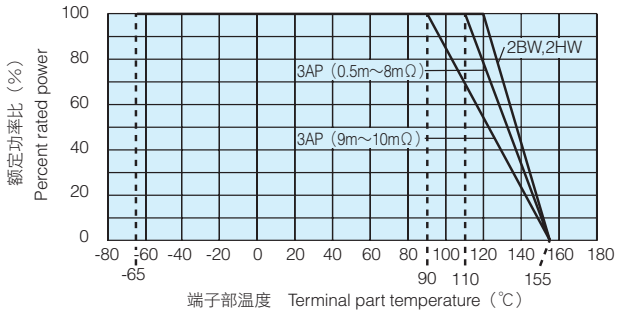
欲知关于此产品含有的环境负荷物质详情（除EU-RoHS以外），请与我们联系。
编带细节参照卷末附录C。
Contact us when you have control request for environmental hazardous material other than the substance specified by EU-RoHS.
For further information on taping, please refer to APPENDIX C on the back pages.

■ 额定值 Ratings

型 号 Type	额定功率 Power Rating	电阻温度系数※2 T.C.R.（×10⁻⁶/K）	电阻值范围 Resistance Range（Ω）	阻值允许偏差 Resistance Tolerance	额定端子部温度 Rated Terminal Part Temp.	使用温度范围 Operating Temp. Range	编带和包装数/卷 Taping & Q'ty/Reel（pcs） TD	TE
TLR2BW	1.0W	±75	2m,3m,4m,5m,6m,7m,8m,9m,10m, 11m,12m,13m,15m,16m,18m,20m	F: ±1%	120℃	−65℃～+155℃	5,000	−
TLR2HW	2.0W	±75	1m,2m,3m,4m,5m,6m,7m,8m,9m,10m,				−	4,000
TLR3AP	3.0W	±75	0.5m,0.68m,0.75m,0.82m,1m,1.5m,2m 3m,4m,5m,6m,7m,8m,9m,10m		0.5m～8m: 110℃ 9m～10m: 90℃		−	2,000

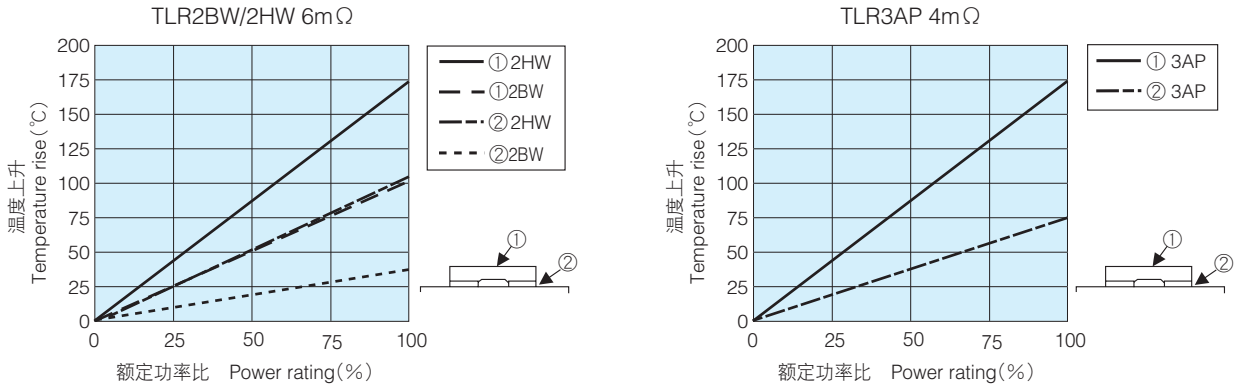
※2 关于电阻温度系数为±50×10⁻⁶/K的产品，请您另行询问。
※2 Please ask separately us about T.C.R (±50×10⁻⁶/K).

■负荷减轻特性曲线　Derating Curve



超过端子部温度使用时，请根据上图负荷减轻特性曲线减小额定功率后使用。
※ 有关使用方法，请参照卷首的“端子部温度负荷减轻特性曲线的说明”。
For resistors operated terminal part temperature of described for each size or above, a power rating shall be derated in accordance with derating curve.
※Please refer to “Introduction of the derating curves based on the terminal part temperature” on the beginning of our catalog before use.

■ 温度上升　Temperature Rise



表面温度上升，由于是用本公司测定条件测定的，根据使用状况、使用基板不同，数值也有不同，因此在使用时应另行询问。
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.

■ 性能　Performance

试验项目 Test Items	标准值　Performance Requirements ΔR%		试验方法 Test Methods
	保证值　Limit	代表值　Typical	
电阻值 Resistance	在规定的阻值允许偏差内 Within specified tolerance	—	+25℃
电阻温度系数 T.C.R.	在规定值以内 Within specified T.C.R.	—	+25℃/+100℃
耐焊接热 Resistance to soldering heat	0.5	0.3	260℃±5℃, 10s$^{+2}_{-0}$s
温度突变 Rapid change of temperature	0.5	0.3	−55℃（15min.）/+150℃（15min.）1000 cycles
耐湿性（温湿度循环） Moisture resistance	0.5	0.1	MIL-STD-202-106 0% power, 7a and 7b not required
耐湿负荷 Biased humidity	0.5	0.1	85℃±2℃, 85%RH, 1000h, 10% Bias
额定端子部温度的耐久性 Endurance of Rated Terminal Part Temperature	1	0.3	120℃±2℃（2BW, 2HW），110℃±2℃（3AP 0.5～8mΩ） 90℃±2℃（TLR3AP 9～10mΩ） 1000h, 1.5h ON/0.5h OFF cycle
高温放置 High temperature exposure	1	0.6	+155℃, 1000h

■ 使用注意事项　Precautions for Use

- 作为分流电阻使用时，应考虑和周围线圈的电磁感应后，配置模型。
  对于50mΩ或以下的电阻值，焊接后的电阻值可能会根据焊盘图案的大小或焊锡量而变化。对设备进行设计时，请先确认电阻值下降、上升所造成的影响。
- In case of using the low ohm resistors as shunt resistors, please lay out a pattern considering the electromagnetic induction with surrounding inductors.
- In the resistance values of 50mΩ or under, the resistance value after soldering may change depending on the size of pad pattern or solder amount. Make sure the effect of decline/increase of resistance value before designing.