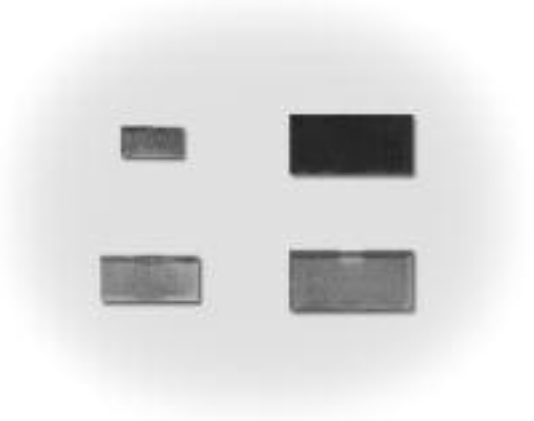
KOA SPEER ELECTRONICS, INC.

TLR-2BW, 2HW, 3AP

metal plate current sense resistor

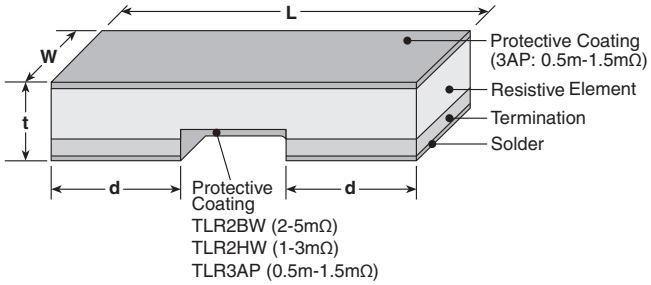
EU RoHS COMPLIANT



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)
- Products with lead-free terminations meet EU RoHS and China RoHS requirements
- AEC-Q200 Qualified

dimensions and construction



Size Code	Resistance	Dimensions inches (mm) L	W	d	t
TLR2BW	2mΩ - 20mΩ	.126±.008 (3.20±0.20)	.063±.008 (1.60±0.20)	.020±.008 (0.50±0.20)	.024±.008 (0.60±0.20)
TLR2HW	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	.25±.01 (6.35±0.25)	.125±.01 (3.18±0.25)	.107±.01 (2.725±0.25)	.024±.01 (0.62±0.25)
	0.68mΩ, 0.75mΩ, 0.82mΩ			.105±.01 (2.675±0.25)	
	1mΩ, 1.5mΩ, 3mΩ, 4mΩ			.087±.01 (2.20±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)	

ordering information

New Part #

TLR	2BW	D	TD	10L0	F	75
Type	Power Rating	Termination Material	Packaging	Nominal Resistance	Tolerance	T.C.R.
	2BW: 1W 2HW: 2W 3AP: 3W	D: SnAgCu	TD: 4mm pitch punched paper TE: Embossed plastic	±1%: 4 digits	F: ±1%	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.

11/30/14

KOA SPEER ELECTRONICS, INC.

TLR-2BW, 2HW, 3AP

metal plate current sense resistor

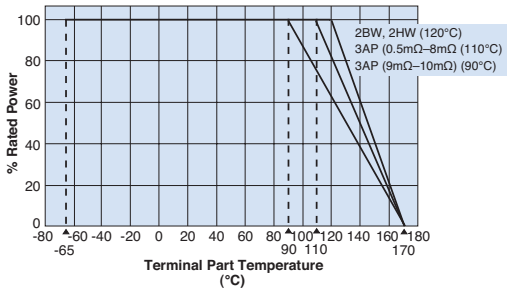
applications and ratings

Part Designation	Power Rating @ 70°C	T.C.R. (ppm/°C) Max.**	Standard Resistance (Ω)	Resistance Tolerance	Rated Ambient Temperature	Rated Terminal Part Temperature	Operating Temperature Range
TLR2BW	1W	±75	1m,2m,3m,4m,5m,6m,7m, 8m,9m,10m,11m,12m, 13m,15m,16m,18m,20m	F: ±1%	—	+120°C	-65°C to +170°C
TLR2HW	2W	±50	1m,2m,3m,4m,5m, 6m,7m,8m,9m,10m	F: ±1%	—	+120°C	-65°C to +170°C
		±75					
TLR3AP	3W	±50	2m,3m,4m,5m 6m,7m,8m,9m,10m	F: ±1%	—	0.5m ~ 8m: +110°C	-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	

* Please contact factory for T.C.R.: ±50ppm/°C

environmental applications

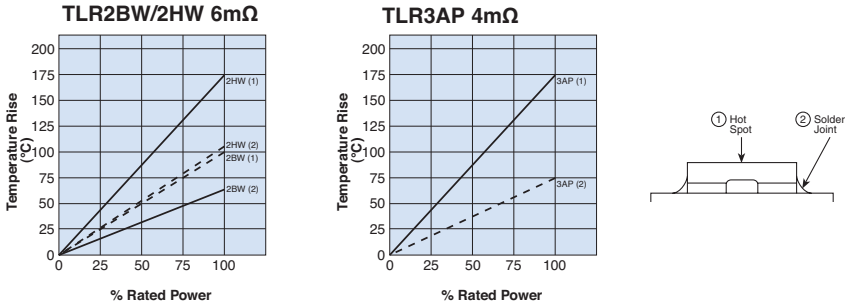
Derating Curve



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.

Performance Characteristics

Parameter	Requirement Δ R ±% Limit	Typical	Test Method
Resistance	Within regulated tolerance	—	25°C
T.C.R.	Within specified T.C.R.	—	+25°C/+100°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 (TLR3AP 9mΩ~10mΩ), 1000 hours, 1.5 hr ON, 0.5 hr OFF cycle
High Temperature Exposure	±1.0%	±0.6%	±155°C, 1000 hours
	±1.0% + 0.0001Ω	—	±170°C, 1000 hours

Specifications given herein may be changed at any time without prior notice. Please confirm technical specifications before you order and/or use. 12/08/14