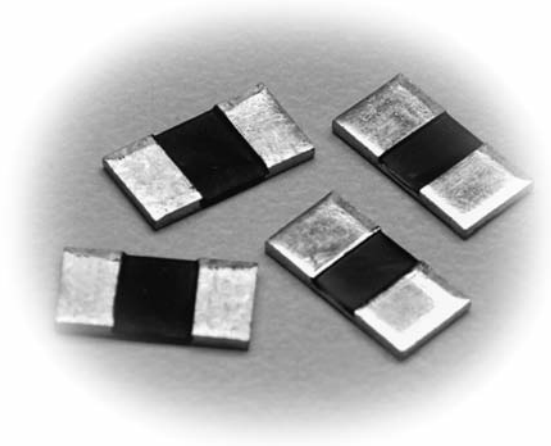
KOA SPEER ELECTRONICS, INC.

TLR

metal plate current sense resistor

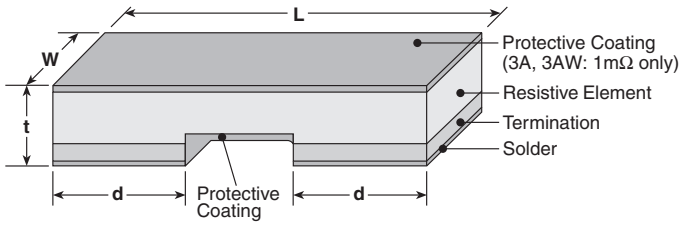
EU RoHS COMPLIANT



features

- Ultra-low TCR (+75ppm/°C) available
- Metal alloy: superior corrosion and heat resistance
- Applications include current sensing, voltage division and pulse applications
- Ultra low resistance (1mΩ - 20mΩ)
- Products with lead-free terminations meet EU RoHS and China RoHS requirements

dimensions and construction



Size Code	Resistance	Dimensions inches (mm) L	W	d	t
TLR2BN	2m,3m,4m,5m,6m, 7m,8m,10m,11m, 12m,13m,15m, 16m,18m,20m	.126±.008 (3.20±0.20)	.063±.008 (1.60±0.20)	.020±.008 (0.50±0.20)	.024±.008 (0.60±0.20)
TLR2B					
TLR2H	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)	
TLR3A	1mΩ	.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			.047±.01 (1.20±0.25)	
	3mΩ			.073±.01 (1.85±0.25)	
	4mΩ			.047±.01 (1.20±0.25)	
TLR3AW	1mΩ - 4mΩ	.25±.01 (6.35±0.25)	.125±.01 (3.18±0.25)	.087±.01 (2.20±0.25)	.024±.01 (0.60±0.25)
	5mΩ - 8mΩ			.047±.01 (1.20±0.25)	
	9mΩ, 10mΩ			.030±.01 (0.77±0.25)	

ordering information

New Part #

TLR	3A	D	TE	2L00	F	75
Type	Power Rating	Termination Material	Packaging	Nominal Resistance	Tolerance	T.C.R.
	2BN: 0.5W 2B: 0.5W 2H: 1W 3A: 1W 3AW: 2W	D: SnAgCu	TE: 7" 8mm pitch embossed plastic (3A, 3AW) TE: 7" 4mm pitch embossed plastic (2H only) TD: 4mm pitch punched paper (2B, 2BN)	F: 4 digits J: 3 digits Ex: 2L00: 2mΩ	F: ±1%	75ppm/°C Nil: 150ppm/°C Nil: 200ppm/°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.

12/16/08

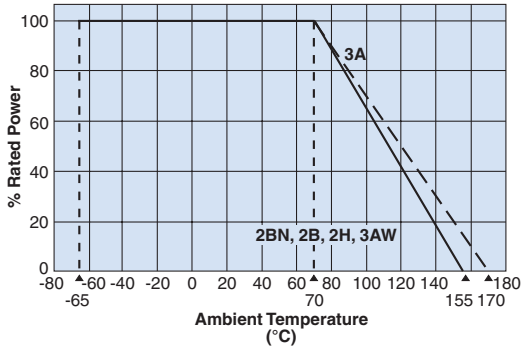
applications and ratings

Part Designation	Power Rating @ 70°C	T.C.R. (ppm/°C) Max.	Standard Resistance (Ω)	Resistance Tolerance	Absolute Maximum Working Voltage	Rated Ambient Temperature	Operating Temperature Range
TLR2BN	1/2W (.5W)	±150	2m,3m,4m,5m,6m,7m 8m,10m,11m,12m,13m, 15m,16m,18m,20m	F: ±1%	$\sqrt{PxR}$	+70°C	-65°C to +155°C
TLR2B	1/2W (.5W)	±75	2m,3m,4m,5m,6m,7m, 8m,10m,11m,12m,13m, 15m,16m,18m,20m	F: ±1%	$\sqrt{PxR}$	+70°C	-65°C to +155°C
TLR2H	1W	±75	1m,2m,3m,4m,5m, 6m,7m,8m,9m,10m	F: ±1%	$\sqrt{PxR}$	+70°C	-65°C to +155°C
TLR3A	1W	±150	1m, 2m	F: ±1%	$\sqrt{PxR}$	+70°C	-65°C to +170°C
		±200	3m, 4m				
TLR3AW	2W	±75	2m*,3m 4m,5m,6m,7m,8m	F: ±1%	$\sqrt{PxR}$	+70°C	-65°C to +155°C
		±150	1m* 9m,10m*	F: ±1%			

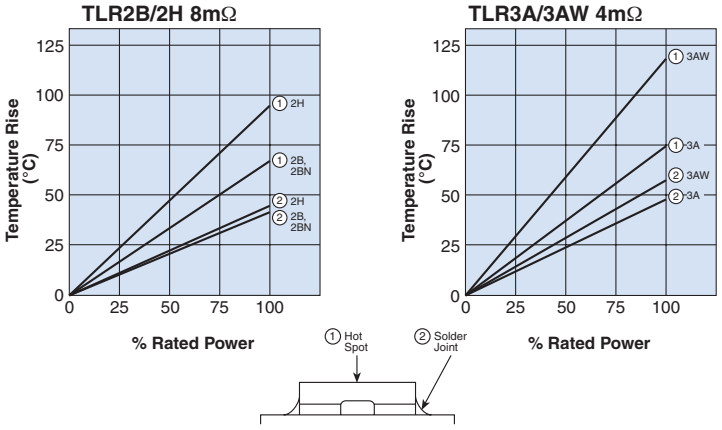
* 1mΩ, 2mΩ, 10mΩ: Please contact factory for availability

environmental applications

Derating Curve



Temperature Rise



Performance Characteristics

Parameter	Requirement Δ R Limit	Requirement Δ R 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 ~ 12 seconds
Rapid Change of Temperature	±0.5%	±0.4%	-55°C (15 minutes), +150°C (15 minutes), 1000 cycles
Moisture Resistance	±0.5%	±0.1%	MIL-STD-202, Method 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 at 70°C	±1.0%	±0.3%	70°C ± 2°C, 1000 hours, 1.5 hr ON, 0.5 hr OFF cycle
Low Temperature Operation	±0.5%	±0.1%	-65°C, 24 hours
High Temperature Exposure	±1.0%	±0.6%	+170°C, 1000 hours for 3A & 3AW (4-10 mΩ only) (±155°C, 1000 hours for 3AW (1-3 mΩ), 2B & 2H only)

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

12/16/08