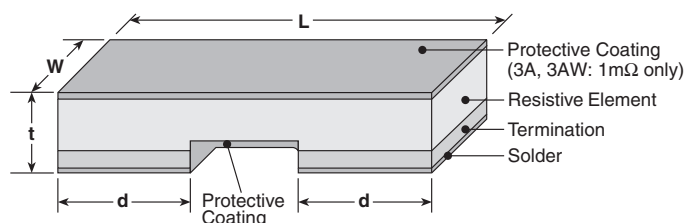


features

- 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 | | | .071±.008 (1.80±0.20) | .026±.008 (0.65±0.20) |
| | 2mΩ - 6mΩ | .200±.008 (5.00±0.20) | .100±.008 (2.50±0.20) | .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.

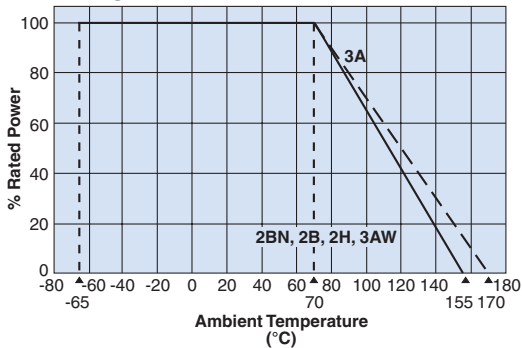
applications and ratings

| 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% | | | |

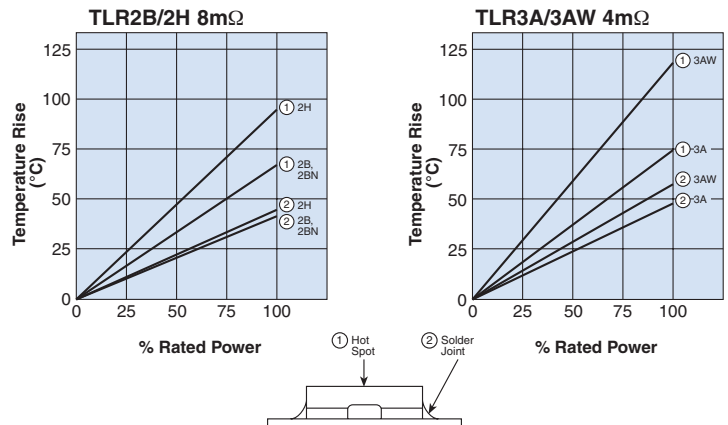
* 1mΩ, 2mΩ, 10mΩ: Please contact factory for availability

environmental applications

Derating Curve



Temperature Rise



Performance Characteristics

| Parameter | Requirement ΔR | | Test Method |
|-----------------------------|----------------------------|---------|---|
| | Limit | Typical | |
| 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) |