

Type RL73 Series

Key Features

- Up to 2 Watts at 70°C
- Values down to R10
- 8 chip sizes
- Ideal for current detection
- Value marked on resistor
- Sizes 0201 to 2512
- 0402, 0603, 0805, 1206, 2512 stocked in distribution
- New Higher Power Version now available

Applications

- Audio
- Communications
- Automotive
- Low voltage power supplies
- Power management applications



TE Connectivity are pleased to offer this thick film chip resistor for current sensing positions. It has a special metal glaze resistive element and a nickel barrier layer beneath the solder to prolong terminal life. Following the developments by semiconductor manufacturers in the production of a range of IC's for battery charge management and low voltage power supplies, the RL73 Series satisfies the demand for a low ohmic shunt resistor to act as a current sensor.

Characteristics - Electrical - Standard Power

| Type | TCR | Power rating @ 70°C | Resistance Range | TDF | TD | TE | Tape |
|---------|---------|---------------------|------------------|------|------|------|-----------------------|
| RL73X1H | 1000PPM | 0.05W | R10 - R13 | 1000 | 5000 | -- | Paper tape |
| RL73V1H | 600PPM | 0.05W | R15 - R47 | 1000 | 5000 | -- | Paper tape |
| RL73N1H | 300PPM | 0.05W | R51 - R91 | 1000 | 5000 | -- | Paper tape |
| RL73N1E | 300PPM | 0.0625W | R10 - R91 | 1000 | 5000 | -- | Paper tape |
| RL73N1J | 300PPM | 0.1W | R10 - R91 | 1000 | 5000 | -- | Paper tape |
| RL73H2A | 100PPM | 0.125W | R10 - R91 | 1000 | 5000 | -- | Paper tape |
| RL73K2A | 200PPM | 0.125W | R10 - R91 | 1000 | 5000 | -- | Paper tape |
| RL73H2B | 100PPM | 0.25W | R10 - R91 | 1000 | 5000 | -- | Paper tape |
| RL73K2B | 200PPM | 0.25W | R10 - R91 | 1000 | 5000 | -- | Paper tape |
| RL73H2E | 100PPM | 0.5W | R10 - R91 | 1000 | 5000 | -- | Paper tape |
| RL73K2E | 200PPM | 0.5W | R10 - R91 | 1000 | 5000 | -- | Paper tape |
| RL73H2H | 100PPM | 0.75W | R10 - R91 | 1000 | -- | 4000 | Embossed plastic tape |
| RL73K2H | 200PPM | 0.75W | R10 - R91 | 1000 | -- | 4000 | Embossed plastic tape |
| RL73H3A | 100PPM | 1W | R10 - R91 | 1000 | -- | 4000 | Embossed plastic tape |
| RL73K3A | 200PPM | 1W | R10 - R91 | 1000 | -- | 4000 | Embossed plastic tape |

Type RL73 Series

Characteristics - Electrical - High power version

| Type | TCR | Power rating @ 70°C | Resistance Range | TDF | TD | TE | Tape |
|----------|--------|---------------------|------------------|------|------|------|---------|
| RLP73M1E | 400PPM | 0.125W | R051 - R10 | 1000 | 5000 | -- | Paper |
| RLP73N1E | 300PPM | 0.125W | R110 - R47 | 1000 | 5000 | -- | Paper |
| RLP73K1E | 200PPM | 0.125W | R51 - 1R0 | 1000 | 5000 | -- | Paper |
| RLP73M1J | 400PPM | 0.125W | R051 - R10 | 1000 | 5000 | -- | Paper |
| RLP73N1J | 300PPM | 0.125W | R110 - R47 | 1000 | 5000 | -- | Paper |
| RLP73K1J | 200PPM | 0.125W | R51 - 1R0 | 1000 | 5000 | -- | Paper |
| RLP73M2A | 400PPM | 0.25W | R051 - R10 | 1000 | 5000 | -- | Paper |
| RLP73N2A | 300PPM | 0.25W | R110 - R47 | 1000 | 5000 | -- | Paper |
| RLP73K2A | 200PPM | 0.25W | R51 - 1R0 | 1000 | 5000 | -- | Paper |
| RLP73V2B | 600PPM | 0.5W | R010 - R020 | 1000 | 5000 | -- | Paper |
| RLP73M2B | 400PPM | 0.5W | R022 - R047 | 1000 | 5000 | -- | Paper |
| RLP73N2B | 300PPM | 0.5W | R051 - R091 | 1000 | 5000 | -- | Paper |
| RLP73K2B | 200PPM | 0.5W | R10 - 1R0 | 1000 | 5000 | -- | Paper |
| RLP73V3A | 600PPM | 2W | R010 - R020 | 1000 | -- | 4000 | Plastic |
| RLP73M3A | 400PPM | 2W | R022 - R047 | 1000 | -- | 4000 | Plastic |
| RLP73N3A | 300PPM | 2W | R051 - R091 | 1000 | -- | 4000 | Plastic |
| RLP73K3A | 200PPM | 2W | R10 - 1R0 | 1000 | -- | 4000 | Plastic |

Operating Voltage= $\sqrt{P \cdot R}$; Overload Voltage= $2.5 \cdot \sqrt{P \cdot R}$; Operating Current= $\sqrt{P/R}$
 Maximum operating temperature -55°C to +155°C

Power Derating Curve



* Recommended Circuit Board Design

For resistors operated in ambient temperatures above 70°C, power rating must be derated in accordance with this curve.

Characteristics - Environmental

| Item | Requirement | Test Method |
|--|---|--|
| Temperature Coefficient of Resistance (TCR): | As Specification | -55°C ~ +125°C, 25°C is the reference temperature |
| Short Time Overload: | $\pm(0.5\%+0.05\Omega)$ for higher Power rating: $\pm(1.0\% + 0.05\Omega)$ | RCWV*2.5 or Max. overload voltage for 5 seconds |
| Insulation Resistance: | $\geq 10G$ | Max. overload voltage for 1 minute |
| Endurance: | $\pm(1.0\%+0.05\Omega)$ | 70 $\pm 2^\circ C$, Max. working voltage for 1000 hrs with 1.5 hrs "ON" and 0.5 hrs "OFF" |
| Damp Heat with Load: | $\pm(0.5\%+0.05\Omega)$ | 40 $\pm 2^\circ C$, 90-95% R.H. max. working voltage for 1000 hrs with 1.5 hrs "ON" and 0.5 hrs "OFF" |
| Dry Heat: | $\pm(0.5\%+0.05\Omega)$ | at +155°C for 1000 hrs |
| Bending Strength: | As Spec. | Bending once for 5 seconds 2010, 2512 sizes: 2mm Other sizes: 3mm |
| Solderability: | 95% min. coverage | 245 $\pm 5^\circ C$ for 3 seconds |
| Resistance to Soldering Heat: | $\pm(0.5\%+0.05\Omega)$ | 260 $\pm 5^\circ C$ for 10 seconds |
| Voltage Proof: | No breakdown or flashover | 1.42 times RCWV (RMS) for 1 minute |
| Leaching: | Individual leaching area $\leq 5\%$ Total leaching area $\leq 10\%$ | 260 $\pm 5^\circ C$ for 30 seconds |
| Thermal Shock: | $\pm(0.5\%+0.05\Omega)$ | -55°C to +155°C, 5 cycles |

Reference Standards: IEC 60115-1, 60068-2-58; JIS-C 5201-1

Storage Temperature: 25 \pm 3°C; Humidity < 80%RH

Type RL73 Series

Dimensions



- | | | |
|--------------------------|----------------------------|--------------------------|
| 1. Alumina Substrate | 4. Edge Electrode (NiCr) | 7. Resistor Layer (NiCr) |
| 2. Bottom Electrode (Ag) | 5. Barrier Layer (Ni) | 8. Overcoat (Epoxy) |
| 3. Top Electrode (Ag-Pd) | 6. External Electrode (Sn) | 9. Marking |

| Part Number | L | W | C | D | t |
|----------------------|------------|------------|------------|------------|------------|
| RL73 1H (0201) | 0.58 ±0.05 | 0.29 ±0.05 | 0.15 ±0.05 | 0.12 ±0.05 | 0.23 ±0.05 |
| RL(P)73 1E (0402) | 1.00 ±0.05 | 0.50 ±0.05 | 0.20 ±0.10 | 0.25 ±0.10 | 0.32 ±0.10 |
| RL(P)73 1J (0603) | 1.60 ±0.10 | 0.80 ±0.10 | 0.30 ±0.20 | 0.30 ±0.20 | 0.45 ±0.10 |
| RL(P)73 2A (0805) | 2.00 ±0.15 | 1.25 ±0.15 | 0.40 ±0.25 | 0.30 ±0.20 | 0.55 ±0.10 |
| RL(P)73 2B (1206) | 3.10 ±0.10 | 1.55 ±0.15 | 0.40 ±0.25 | 0.50 ±0.30 | 0.55 ±0.10 |
| RL(P)73 2E (1210) | 3.10 ±0.10 | 2.50 ±0.15 | 0.50 ±0.25 | 0.50 ±0.30 | 0.55 ±0.10 |
| RL(P)73 2H (2010) | 5.00 ±0.20 | 2.50 ±0.15 | 0.50 ±0.25 | 0.60 ±0.30 | 0.60 ±0.15 |
| RL73 3A (2512) | 6.35 ±0.20 | 3.10 ±0.15 | 0.55 ±0.25 | 0.60 ±0.30 | 0.60 ±0.10 |
| RLP73 3A (2512) <R10 | 6.35 ±0.20 | 3.15 ±0.15 | 0.55 ±0.25 | 0.60 ±0.30 | 0.74 ±0.10 |
| RLP73 3A (2512) ≥R10 | 6.35 ±0.20 | 3.15 ±0.15 | 2.10 ±0.10 | 0.60 ±0.30 | 0.74 ±0.10 |

Recommend Land Pattern



| Type | A | B | C |
|----------------------|------|------|-----------|
| RL73 1H (0201) | 0.25 | 0.3 | 0.40 ±0.2 |
| RL(P)73 1E (0402) | 0.5 | 0.5 | 0.60 ±0.2 |
| RL(P)73 1J (0603) | 0.8 | 1.0 | 0.90 ±0.2 |
| RL(P)73 2A (0805) | 1.0 | 1.0 | 1.35 ±0.2 |
| RL(P)73 2B (1206) | 2.0 | 1.15 | 1.70 ±0.2 |
| RL(P)73 2E (1210) | 2.0 | 1.15 | 2.50 ±0.2 |
| RL(P)73 2H (2010) | 3.6 | 1.4 | 2.50 ±0.2 |
| RL73 3A (2512) | 4.9 | 1.6 | 3.10 ±0.2 |
| RLP73 3A (2512) <R10 | 4.9 | 1.6 | 3.10 ±0.2 |
| RLP73 3A (2512) ≥R10 | 1.0 | 3.55 | 3.10 ±0.2 |

Type RL73 Series

Packaging Quantity & Reel Specifications



| Type | øA | øB | øC | W | T | Paper Tape | Embossed Plastic Tape |
|-------------------|------------|-----------|-----------|-----------|-----------|-------------|-----------------------|
| RL73 1H (0402) | 178.0 ±1.0 | 60.0 +1.0 | 13.5 ±0.7 | 9.5 ±0.1 | 11.5 ±1.0 | 1000 / 5000 | - |
| RL(P)73 1E (0402) | 178.0 ±1.0 | 60.0 +1.0 | 13.5 ±0.7 | 9.5 ±0.1 | 11.5 ±1.0 | 1000 / 5000 | - |
| RL(P)73 1J (0603) | 178.0 ±1.0 | 60.0 +1.0 | 13.5 ±0.7 | 9.5 ±0.1 | 11.5 ±1.0 | 1000 / 5000 | - |
| RL(P)73 2A (0805) | 178.0 ±1.0 | 60.0 +1.0 | 13.5 ±0.7 | 9.5 ±0.1 | 11.5 ±1.0 | 1000 / 5000 | - |
| RL(P)73 2B (1206) | 178.0 ±1.0 | 60.0 +1.0 | 13.5 ±0.7 | 9.5 ±0.1 | 11.5 ±1.0 | 1000 / 5000 | - |
| RL(P)73 2E (1210) | 178.0 ±1.0 | 60.0 +1.0 | 13.5 ±0.7 | 9.5 ±0.1 | 11.5 ±1.0 | 1000 / 5000 | - |
| RL(P)73 2H (2010) | 178.0 ±1.0 | 60.0 +1.0 | 13.5 ±0.7 | 13.5 ±1.0 | 15.5 ±1.0 | - | 1000 / 4000 |
| RL(P)73 3A (2512) | 178.0 ±1.0 | 60.0 +1.0 | 13.5 ±0.7 | 13.5 ±1.0 | 15.5 ±1.0 | - | 1000 / 4000 |

Paper Tape Specification



| Type | A | B | W | E | F | P ₀ | P ₁ | P ₂ | øD ₀ | T |
|------------|------------|------------|-----------|------------|------------|----------------|----------------|----------------|-----------------|------------|
| RL73 1H | 0.38 ±0.05 | 0.68 ±0.05 | 8.0 ±0.20 | 1.75 ±0.10 | 3.50 ±0.05 | 4.00 ±0.10 | 2.00 ±0.05 | 2.00 ±0.05 | 1.50+0.1,-0 | 0.42 ±0.20 |
| RL(P)73 1E | 0.65 ±0.10 | 1.15 ±0.10 | 8.0 ±0.20 | 1.75 ±0.10 | 3.50 ±0.05 | 4.00 ±0.10 | 2.00 ±0.05 | 2.00 ±0.05 | 1.50+0.1,-0 | 0.45 ±0.10 |
| RL(P)73 1J | 1.10 ±0.10 | 1.90 ±0.10 | 8.0 ±0.20 | 1.75 ±0.10 | 3.50 ±0.05 | 4.00 ±0.10 | 4.00 ±0.05 | 2.00 ±0.05 | 1.50+0.1,-0 | 0.70 ±0.10 |
| RL(P)73 2A | 1.60 ±0.10 | 2.40 ±0.20 | 8.0 ±0.20 | 1.75 ±0.10 | 3.50 ±0.05 | 4.00 ±0.10 | 4.00 ±0.05 | 2.00 ±0.05 | 1.50+0.1,-0 | 0.85 ±0.10 |
| RL(P)73 2B | 1.90 ±0.10 | 3.50 ±0.20 | 8.0 ±0.20 | 1.75 ±0.10 | 3.50 ±0.05 | 4.00 ±0.10 | 4.00 ±0.05 | 2.00 ±0.05 | 1.50+0.1,-0 | 0.85 ±0.10 |
| RL(P)73 2E | 2.90 ±0.10 | 3.50 ±0.20 | 8.0 ±0.20 | 1.75 ±0.10 | 3.50 ±0.05 | 4.00 ±0.10 | 4.00 ±0.05 | 2.00 ±0.05 | 1.50+0.1,-0 | 0.85 ±0.10 |

Type RL73 Series

Embossed Plastic Tape Specifications



| Type | A | B | W | E | F | P ₀ | P ₁ | P ₂ | øD ₀ | T |
|------------|-----------|-----------|-----------|-----------|----------|----------------|----------------|----------------|-----------------|-----------|
| RL(P)73 2H | 2.80±0.10 | 5.50±0.10 | 12.0±0.10 | 1.75±0.10 | 5.5±0.05 | 4.00±0.05 | 4.00±0.10 | 2.00±0.05 | 1.50+0.10 | 1.00±0.20 |
| RL73 3A | 3.50±0.10 | 6.70±0.10 | 12.0±0.10 | 1.75±0.10 | 5.5±0.05 | 4.00±0.05 | 4.00±0.10 | 2.00±0.05 | 1.50+0.10 | 1.00±0.20 |
| RLP73 3A | 3.38±0.10 | 6.68±0.10 | 12.0±0.30 | 1.75±0.10 | 5.5±0.01 | 4.00±0.10 | 4.00±0.10 | 2.00±0.05 | 1.50+0.05 | 1.45±0.20 |

How to Order

| RL73 | H | 2A | R10 | F | TD |
|---------------|--|--|--|------------------------|---|
| Common Part | TCR | Size | Resistor Value | Tolerance | Packaging |
| RL73 RLP73 | X - 1000PPM V - 600PPM N - 300PPM H - 100PPM K - 200PPM M - 400PPM See above for applicability | 1H -0201 1E -0402 1J -0603 2A -0805 2B -1206 2E -1210 2H -2010 3A -2512 | 0.1 Ohm (100milliOhm) R10 0.91 Ohm (910 milliOhm) R91 | F - ±1% J - ±5% | TDF -1000 REEL TD -5000 REEL TE -4000 REEL See above for applicability |

TE Connectivity, TE connectivity (logo) and TE (logo) are trademarks.
Other logos, product and Company names mentioned herein may be trademarks of their respective owners.

While TE has made every reasonable effort to ensure the accuracy of the information in this datasheet, TE does not guarantee that it is error-free, nor does TE make any other representation, warranty or guarantee that the information is accurate, correct, reliable or current. TE reserves the right to make any adjustments to the information contained herein at any time without notice. TE expressly disclaims all implied warranties regarding the information contained herein, including, but not limited to, any implied warranties of merchantability or fitness for a particular purpose. The dimensions in this datasheet are for reference purposes only and are subject to change without notice. Specifications are subject to change without notice. Consult TE for the latest dimensions and design specifications.

Данный компонент на территории Российской Федерации

Вы можете приобрести в компании MosChip.

Для оперативного оформления запроса Вам необходимо перейти по данной ссылке:

<http://moschip.ru/get-element>

Вы можете разместить у нас заказ для любого Вашего проекта, будь то серийное производство или разработка единичного прибора.

В нашем ассортименте представлены ведущие мировые производители активных и пассивных электронных компонентов.

Нашей специализацией является поставка электронной компонентной базы двойного назначения, продукции таких производителей как XILINX, Intel (ex.ALTERA), Vicor, Microchip, Texas Instruments, Analog Devices, Mini-Circuits, Amphenol, Glenair.

Сотрудничество с глобальными дистрибьюторами электронных компонентов, предоставляет возможность заказывать и получать с международных складов практически любой перечень компонентов в оптимальные для Вас сроки.

На всех этапах разработки и производства наши партнеры могут получить квалифицированную поддержку опытных инженеров.

Система менеджмента качества компании отвечает требованиям в соответствии с ГОСТ Р ИСО 9001, ГОСТ РВ 0015-002 и ЭС РД 009

Офис по работе с юридическими лицами:

105318, г.Москва, ул.Щербаковская д.3, офис 1107, 1118, ДЦ «Щербаковский»

Телефон: +7 495 668-12-70 (многоканальный)

Факс: +7 495 668-12-70 (доб.304)

E-mail: info@moschip.ru

Skype отдела продаж:

moschip.ru

moschip.ru_4

moschip.ru_6

moschip.ru_9