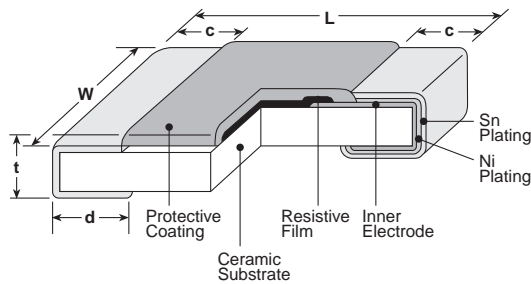


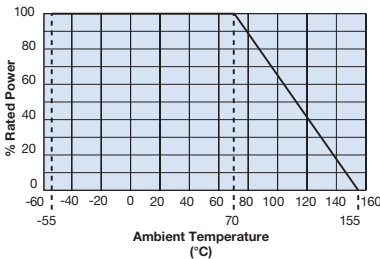
features

- Superior to RK73B/RK73H series in pulse withstanding voltage and high power
- Down to $\pm 0.5\%$ tolerance
- Suitable for both reflow and flow solderings
- Products with lead-free terminations meet EU RoHS requirements. EU RoHS regulation is not intended for Pb-glass contained in electrode, resistor element and glass.
- AEC-Q200 Qualified

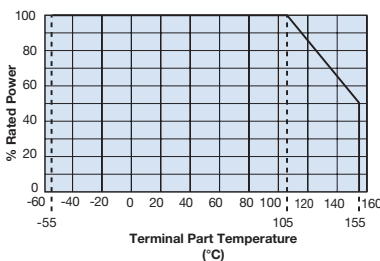
dimensions and construction



Derating Curve



For resistors operated at an ambient temperature of 70°C or above, the power rating shall be derated in accordance with the derating curve.



For resistors operated at a terminal part temperature of 105°C or above, the power rating shall be derated in accordance with the derating curve.

For more details on derating click here, "[Derating Curves – Caution & Terms.](#)"

| Type (Inch Size Code) | Dimensions inches (mm) | | | | |
|--------------------------|--|-------------------------|---|---|--------------------------|
| | L | W | c | d | t |
| SG73P1E (0402) | .039 ^{+0.004} _{-.002} (1.0 ^{+0.1} _{-0.05}) | .02±.002 (0.5±0.05) | .006±.004 (0.15±0.1) | .010 ^{+0.002} _{-.004} (0.25 ^{+0.05} _{-0.1}) | .014±.002 (0.35±0.05) |
| SG73P1EW (0402) | .039 ^{+0.004} _{-.002} (1.0 ^{+0.1} _{-0.05}) | .02±.002 (0.5±0.05) | .006±.004 (0.15±0.1) | .010 ^{+0.002} _{-.004} (0.25 ^{+0.05} _{-0.1}) | .014±.002 (0.35±0.05) |
| SG73P1J (0603) | .063±.008 (1.6±0.2) | .031±.004 (0.8±0.1) | .012±.004 (0.3±0.1) | .012±.004 (0.3±0.1) | .018±.004 (0.45±0.1) |
| SG73P1J AT (0603) | | | .014±.006 (0.35±0.15) | .02±.008 (0.5±0.2) | |
| SG73P2A (0805) | .079±.008 (2.0±0.2) | .049±.004 (1.25±0.1) | .012 ^{+0.008} _{-.004} (0.3 ^{+0.2} _{-0.1}) | .012 ^{+0.008} _{-.004} (0.3 ^{+0.2} _{-0.1}) | .02±.004 (0.5±0.1) |
| SG73P2A AT (0805) | | | .018±.010 (0.45±0.25) | .024±.008 (0.6±0.2) | .022±.004 (0.55±0.1) |
| SG73P2B (1206) | .126±.008 (3.2±0.2) | .063±.008 (1.6±0.2) | .016 ^{+0.008} _{-.004} (0.4 ^{+0.2} _{-0.1}) | .016 ^{+0.008} _{-.004} (0.4 ^{+0.2} _{-0.1}) | .024±.004 (0.6±0.1) |
| SG73P2B AT (1206) | | | .022±.014 (0.55±0.35) | .031±.008 (0.8±0.2) | |
| SG73P2E (1210) | .102±.008 (2.6±0.2) | .102±.008 (2.6±0.2) | .016 ^{+0.008} _{-.004} (0.4 ^{+0.2} _{-0.1}) | .016 ^{+0.008} _{-.004} (0.4 ^{+0.2} _{-0.1}) | |

ordering information

| | | | | | | |
|--------------|-----------------------------------|--|-----------------------------|---|---|--|
| SG73P | 2B | | T | TD | 1001 | F |
| Type | Size | Characteristic | Termination Material | Packaging | Nominal Resistance | Tolerance |
| SG73P | 1E 1EW 1J 2A 2B 2E | Nil: Standard A: Heat shock resistance* *1J, 2A, and 2B are available for heat shock resistance. Contact us when you have control request for environmental hazardous material other than the substance specified by EU RoHS. For further information on packaging, please refer to Appendix A | T: Sn | TP: 0402, 0603, 0805: 2mm pitch punch paper TD: 0603, 0805, 1206, 1210: 4mm pitch punched paper TE: 0805, 1206, 1210: 4mm embossed plastic | ±0.5%, ±1%: 3 significant figures + 1 multiplier "R" indicates decimal on value <100Ω ±2%, ±5%: 2 significant figures + 1 multiplier "R" indicates decimal on value <10Ω | D: ±0.5% F: ±1% G: ±2% J: ±5% |

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

04/16/26

anti-surge endured pulse power thick film chip resistor

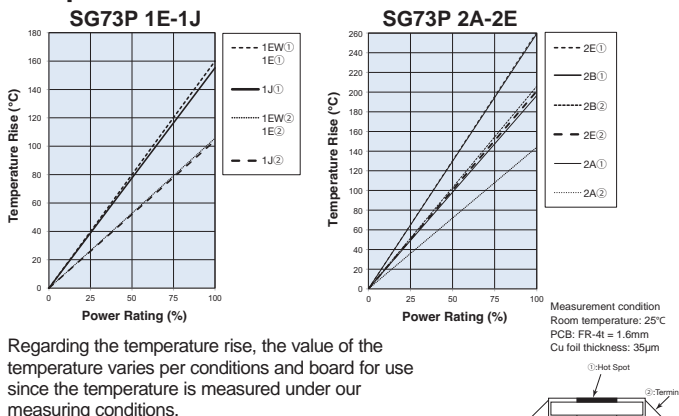
applications and ratings

| Part Designation | Power Rating ^{*1} | Rated Ambient Temp. | Rated Terminal Part Temp. | T.C.R. (ppm/°C) Max. | Resistance Range (Ω) | | | Absolute Maximum Working Voltage | Absolute Maximum Overload Voltage | Operating Temp. Range |
|------------------|----------------------------|---------------------|---------------------------|----------------------|------------------------|-----------------------|-----------------------|----------------------------------|-----------------------------------|-----------------------|
| | | | | | (E-24)/E-96 (D±0.5%) | (E-24)/E-96 (F±1%) | (E-24) (G±2%, J±5%) | | | |
| 1E | 0.33W | 70°C | 105°C | ±200 | 10 - 1M | 1 - 1M | 1 - 10M | 75V | 100V | -55°C to +155°C |
| 1EW | 0.33W | 70°C | 105°C | ±100 | 10 - 1M | 10 - 1M | 10 - 1M | 75V | 100V | |
| | | | | ±200 | — | 1 - 9.76 | 1 - 9.1 1.1M - 10M | | | |
| 1J | 0.5W | 70°C | 105°C | ±100 | 510 - 576k | 510 - 576k | 510 - 560k | 150V | 200V | |
| | | | | ±100 ^{*2} | 10 - 499 590k - 1M | 1 - 499 590k - 1M | 1 - 470 620k - 10M | | | |
| 2A | 0.75W | 70°C | 105°C | ±100 | 100 - 100k | 100 - 100k | 100 - 100k | 400V | 600V (800V) ^{*3} | |
| | | | | ±200 | 10 - 97.6 102k - 1M | 1 - 97.6 102k - 1M | 1 - 91 110k - 10M | | | |
| 2B | 1W | 70°C | 105°C | ±100 | 300-1M | 300-1M | 300-1.1M | 200V | 400V | |
| | | | | ±200 | 10 - 294 | 1 - 294 | 1 - 270 1.2M - 10M | | | |
| 2E | 1.5W | 70°C | 105°C | ±200 | 10 - 1M | 1 - 1M | 1 - 10M | 200V | 400V | |

Rated voltage = $\sqrt{\text{Power rating} \times \text{resistance value}}$ or max. working voltage, whichever is lower. ^{*1} If the terminal part temperature exceeds the rated terminal part temperature, even if it is below the rated ambient temperature, apply the derating curve for the terminal part temperature. ^{*2} Cold T.C.R. (-55°C ~ +25°C) is +150 x 10⁻⁶/K. ^{*3} Applies when power rating is 0.4W or lower. Please contact KOA Speer for how to handle a specific surge/pulse. If any questions should arise whether to use the "Rated Ambient Temperature" or the "Rated Terminal Part Temperature," please give priority to the "Rated Terminal Part Temperature." For more details on derating click here, "[Derating Curves – Caution & Terms.](#)"

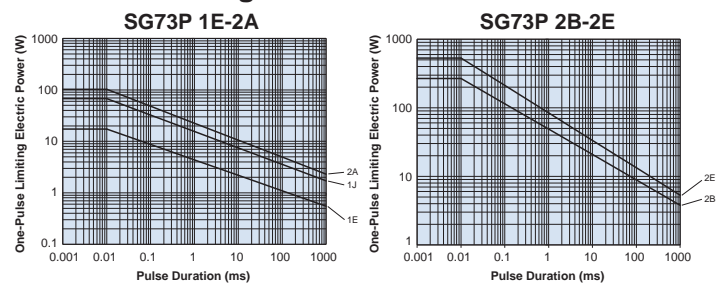
environmental applications

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.

One-Pulse Limiting Electric Power



The maximum applicable voltage is equal to the max. overload voltage. Please ask us about the resistance characteristic of continuous applied pulse. Make sure to test the products in your actual design and environment.

Performance Characteristics

| Parameter | Requirement Δ R ±(%+0.1Ω) | | Test Method | | | | | | | | | | | |
|--|---|---|---|-------------------------|----|-----|----|----|----|----|----------|-------|-------|--------|
| | Limit | Typical | | | | | | | | | | | | |
| Resistance | Within specified tolerance | — | 25°C | | | | | | | | | | | |
| T.C.R. | Within specified T.C.R. | — | +25°C/-55°C and +25°C/+125°C | | | | | | | | | | | |
| Overload (Short time) | ±2% | ±0.5% | Overload for 5 seconds | | | | | | | | | | | |
| | | | <table border="1"> <thead> <tr> <th>Type</th> <th>1E</th> <th>1EW</th> <th>1J</th> <th>2A</th> <th>2B</th> <th>2E</th> </tr> </thead> <tbody> <tr> <td>Overload</td> <td>1.25W</td> <td>1.25W</td> <td>2.063W</td> <td>2W(1.6W^{*3})</td> <td>3W</td> <td>4W</td> </tr> </tbody> </table> | Type | 1E | 1EW | 1J | 2A | 2B | 2E | Overload | 1.25W | 1.25W | 2.063W |
| Type | 1E | 1EW | 1J | 2A | 2B | 2E | | | | | | | | |
| Overload | 1.25W | 1.25W | 2.063W | 2W(1.6W ^{*3}) | 3W | 4W | | | | | | | | |
| Resistance to Solder Heat | ±1% | ±0.75% | 260°C ± 5°C, 10 seconds ± 1 second | | | | | | | | | | | |
| Rapid Change of Temperature | ±0.5%: Characteristic (Nil) Standard ±1%: Characteristic (A) Heat Shock Resistance | ±0.3%: Characteristic (Nil) Standard ±0.5%: Characteristic (A) Heat Shock Resistance | Characteristic (Nil) Standard: -55°C (30 min.)/+125°C (30 min.) 100 cycles Characteristic (A) Heat Shock Resistance: -55°C (30 min.)/+125°C (30 min.) 1000 cycles | | | | | | | | | | | |
| Moisture Resistance | ±3% | ±0.75% | 40°C ± 2°C, 90%~95%RH, 1000 hours; 1.5 hr ON, 0.5 hr OFF cycle | | | | | | | | | | | |
| Endurance at 70°C or Rated Terminal Part Temperature | ±3% | ±0.75% | 70°C ± 2°C or rated terminal part temperature ±2°C 1000 hours, 1.5 hr ON, 0.5 hr OFF cycle | | | | | | | | | | | |
| High Temperature Exposure | ±1% | ±0.3% | +155°C, 1000 hours | | | | | | | | | | | |

Additional environmental applications can also be found at www.koaspeer.com