

Product	Anti-surge chip resistors, high voltage resistance chip resistors	Series	ESR / KTR series
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The description of markings on the chip resistor are as shown below.

Example of marking

	J class tolerance ($\pm 5\%$)	F class tolerance ($\pm 1\%$)	D class tolerance ($\pm 0.5\%$)
ESR01	<p>Yellowish white(Mark)</p> <p>Black(over coat)</p> <p>Silver(External electrode)</p>		
ESR03 KTR03	<p>Yellowish white(Mark)</p> <p>Black(over coat)</p> <p>Silver(External electrode)</p>		
ESR10 ESR18 ESR25 KTR10 KTR18 KTR25	<p>Yellowish white(Marking)</p> <p>Black(over coat)</p> <p>Silver(External electrode)</p>		

- ① Marking method : There are three or four digits used for the calculation number according to IEC code and "R" is used for the decimal point.
 Example: 3digits.....10k Ω =103, 10 Ω =100
 4digits.....10k Ω =1002, 10 Ω =10R0
- ② Marking direction : Standard, Resistor surface marking.
- ③ Marking colors : Yellowish white marking or other appropriate marking
- ④ Forming method of marking : Screen printing
- ⑤ Marking material : Resin

Notes

- 1) The information contained herein is subject to change without notice.
- 2) Before you use our Products, please contact our sales representative and verify the latest specifications :
- 3) Although ROHM is continuously working to improve product reliability and quality, semiconductors can break down and malfunction due to various factors.
Therefore, in order to prevent personal injury or fire arising from failure, please take safety measures such as complying with the derating characteristics, implementing redundant and fire prevention designs, and utilizing backups and fail-safe procedures. ROHM shall have no responsibility for any damages arising out of the use of our Products beyond the rating specified by ROHM.
- 4) Examples of application circuits, circuit constants and any other information contained herein are provided only to illustrate the standard usage and operations of the Products. The peripheral conditions must be taken into account when designing circuits for mass production.
- 5) The technical information specified herein is intended only to show the typical functions of and examples of application circuits for the Products. ROHM does not grant you, explicitly or implicitly, any license to use or exercise intellectual property or other rights held by ROHM or any other parties. ROHM shall have no responsibility whatsoever for any dispute arising out of the use of such technical information.
- 6) The Products are intended for use in general electronic equipment (i.e. AV/OA devices, communication, consumer systems, gaming/entertainment sets) as well as the applications indicated in this document.
- 7) The Products specified in this document are not designed to be radiation tolerant.
- 8) For use of our Products in applications requiring a high degree of reliability (as exemplified below), please contact and consult with a ROHM representative : transportation equipment (i.e. cars, ships, trains), primary communication equipment, traffic lights, fire/crime prevention, safety equipment, medical systems, servers, solar cells, and power transmission systems.
- 9) Do not use our Products in applications requiring extremely high reliability, such as aerospace equipment, nuclear power control systems, and submarine repeaters.
- 10) ROHM shall have no responsibility for any damages or injury arising from non-compliance with the recommended usage conditions and specifications contained herein.
- 11) ROHM has used reasonable care to ensure the accuracy of the information contained in this document. However, ROHM does not warrant that such information is error-free, and ROHM shall have no responsibility for any damages arising from any inaccuracy or misprint of such information.
- 12) Please use the Products in accordance with any applicable environmental laws and regulations, such as the RoHS Directive. For more details, including RoHS compatibility, please contact a ROHM sales office. ROHM shall have no responsibility for any damages or losses resulting from non-compliance with any applicable laws or regulations.
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