Standards nominal resistance values,etc.

Resistors

Datasheet

● Standards nominal resistance values

E3	10				22						47						
E6	10		15		22		33		47		68						
E12	10	12	15	18	22	27	33	39	47	56	68	82					
E24	10	11	12	13	15	16	18	20	22	24	27	30	33	36	39	43	47
	51	56	62	68	75	82	91										
E96	100	102	105	107	110	113	115	118	121	124	127	130	133	137	140	143	147
	150	154	158	162	165	169	174	178	182	187	191	196	200	205	210	215	221
	226	232	237	243	249	255	261	267	274	280	287	294	301	309	316	324	332
	340	348	357	365	374	383	392	402	412	422	432	442	453	464	475	487	499
	511	523	536	549	562	576	590	604	619	634	649	665	681	698	715	732	750
	768	787	806	825	845	866	887	909	931	953	976						

● Nominal Resistance

Resistors of a series fall into one of nominal resisrance ranges shown in the table above.Nominal resistance is determined by the common ratio shown right.

Series	Commdon ratio	Notes
E6	$\sqrt[6]{10} \fallingdotseq 1.46$	The values are rounded up or down based on the number of effective digits.
E12	$\sqrt[12]{10} \fallingdotseq 1.21$	
E24	$\sqrt[24]{10} \fallingdotseq 1.10$	
E96	$\sqrt[96]{10} \fallingdotseq 1.02$	The values are rounded up or down based on the number of effective digits.

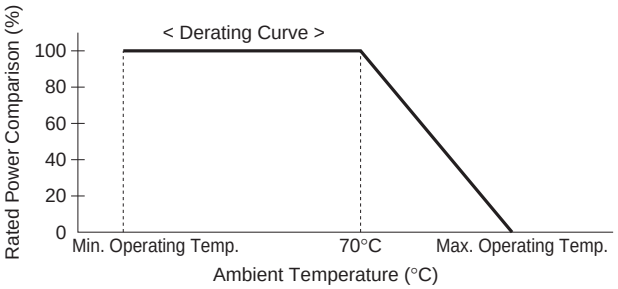
● Resistance coding

Nominal resistance is expressed in 3 digits when the resistance tolerance is ±5% and in 4 digits when ±1%. The leading 2 or 3 digits indicate significant figure while the last digit indicates the number of zeros. The letter R denotes the decimal point if necessary.

EX1 : 22Ω→22 × 10^0Ω→220 (the last digit indicates the number "0" of a multiplier)
EX2 : 47kΩ→47 × 10^3 Ω→473 (the last digit indicates the number "3" of a multiplier)
EX3 : 1.2MΩ→12 × 10^5Ω→125 (the last digit indicates the number "5" of a multiplier)
EX4 : 2.7Ω→2R7 (the decimal point indicate the letter R / the letter R apply to the low Resistance less than 10Ω)
EX5 : 1130Ω→113 × 10^1Ω→1131 (the last digit indicates the number "1" of a multiplier / Resistance Tolerance 1%(F) products)
EX6 : 0.10Ω→R10

● Supplement of rated power

· The load power should be reduced based on the derating curve once the ambient temperature exceeds the rated values.



●For basic guidelines on using resistors,see the technical reports issued by Japan Electronics and Infomation Technology Industries Association.JEITA RCR-2121A.
" Guideline of notabilia for fixed resistors for use in electronic equipment (Safety application Guide for fixed resistoros for use in electronic equipment)"

● Supplementary to notes

*1: When resistor is to be exposed to a transient load (excessive large load,such as pulse), mount the resistor on your product and check the condition and evaluate the result. Constant application of a voltage above the rated voltage will degrade the performance and reliabillity of the resistor. Do not apply a voltage exceeding the rated voltage across any RHOM resistors.

*2: Rated Voltage(V) = $\sqrt{\text{Rated Power(W)} \times \text{Nominal Resistance}(\Omega)}$ or the limiting element voltage, whichever smaller, is the rated voltage.

Notes

No copying or reproduction of this document, in part or in whole, is permitted without the consent of ROHM Co.,Ltd.

The content specified herein is subject to change for improvement without notice.

The content specified herein is for the purpose of introducing ROHM's products (hereinafter "Products"). If you wish to use any such Product, please be sure to refer to the specifications, which can be obtained from ROHM upon request.

Examples of application circuits, circuit constants and any other information contained herein illustrate the standard usage and operations of the Products. The peripheral conditions must be taken into account when designing circuits for mass production.

Great care was taken in ensuring the accuracy of the information specified in this document. However, should you incur any damage arising from any inaccuracy or misprint of such information, ROHM shall bear no responsibility for such damage.

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 and other parties. ROHM shall bear no responsibility whatsoever for any dispute arising from the use of such technical information.

The Products specified in this document are intended to be used with general-use electronic equipment or devices (such as audio visual equipment, office-automation equipment, communication devices, electronic appliances and amusement devices).

The Products specified in this document are not designed to be radiation tolerant.

While ROHM always makes efforts to enhance the quality and reliability of its Products, a Product may fail or malfunction for a variety of reasons.

Please be sure to implement in your equipment using the Products safety measures to guard against the possibility of physical injury, fire or any other damage caused in the event of the failure of any Product, such as derating, redundancy, fire control and fail-safe designs. ROHM shall bear no responsibility whatsoever for your use of any Product outside of the prescribed scope or not in accordance with the instruction manual.

The Products are not designed or manufactured to be used with any equipment, device or system which requires an extremely high level of reliability the failure or malfunction of which may result in a direct threat to human life or create a risk of human injury (such as a medical instrument, transportation equipment, aerospace machinery, nuclear-reactor controller, fuel-controller or other safety device). ROHM shall bear no responsibility in any way for use of any of the Products for the above special purposes. If a Product is intended to be used for any such special purpose, please contact a ROHM sales representative before purchasing.

If you intend to export or ship overseas any Product or technology specified herein that may be controlled under the Foreign Exchange and the Foreign Trade Law, you will be required to obtain a license or permit under the Law.

ROHM SEMICONDUCTOR

Thank you for your accessing to ROHM product informations.
More detail product informations and catalogs are available, please contact us.

ROHM Customer Support System

http://www.rohm.com/contact/