

WIREWOUND - RESISTORS

The following equations and data may be used to calculate the admissible pulse load of wirewound resistors. The equations are the results of many separate experiments and represent the sum of experience. Several other factors, often application related, cannot be considered in our formula which should give safe operation information rather than exact limiting data.

After calculating the provisional results, testing to the specific requirements is recommended.

admissible pulse load $P_{\max} = \frac{K}{\sqrt{t}} [W]$

admissible pulse duration $t_{\max} = \frac{K^2}{P^2} [\text{sec}]$

where P= actual occurring power peak

minimum interval between pulses:

$$t_{\min} = P \cdot \frac{t}{P_{70}} [\text{sec}]$$

where t= actual pulse duration

The equations are applicable for the interval:

$$1 \cdot 10^{-6} \leq t \leq 100 \cdot 10^{-3} [\text{sec}]$$

under the conditions:

$$P_{\text{avg}}(t) \leq P_{70}$$

The following table also gives the maximum current I_{\max} and the minimum resistance R_{\min} which depends on the internal construction of the resistor.

Serie	Type	P ₇₀ [W]	K	U _{max} [V]	I _{max} [A]	from R _{min} [Ω]	
KC	200-0	1	50	2.000	20	10R	
	202-0	2	100	4.000	20	20R	
	204-0	3	150	6.000	20	33R	
	200-040	1	100	2.000	30	30R	
	202-040	2	150	4.000	30	62R	
	204-040	3	200	6.000	30	100R	
KH	206-0/8	4	200	2.000	20	10R	
	208-0/8	5	250	4.000	20	15R	
	210-0/8	7	350	6.000	20	33R	
	212-0/8	7	300	4.000	20	15R	
	214-0/8	9	450	6.000	20	33R	
	216-0/8	11	550	8.000	20	47R	
	218-0/8	17	850	10.000	20	82R	
	206-0/840	4	300	2.000	30	30R	
	208-0/840	5	350	4.000	30	47R	
	210-0/840	7	450	6.000	30	100R	
	212-0/840	7	400	4.000	30	47R	
	214-0/840	9	550	6.000	30	100R	
	216-0/840	11	650	8.000	30	150R	
	218-0/840	17	950	10.000	30	240R	
	KV/KU	206-3/5	4	200	2.000	20	10R
		208-3/5	5	250	4.000	20	15R
		210-3/5	7	350	6.000	20	33R
212-3/5		7	300	4.000	20	15R	
214-3/5		9	450	6.000	20	33R	
216-3/5		11	550	8.000	20	47R	
218-3/5		17	850	10.000	20	82R	
206-3/540		4	300	2.000	30	30R	
208-3/540		5	350	4.000	30	47R	
210-3/540		7	450	6.000	30	100R	
212-3/540		7	400	4.000	30	47R	
214-3/540		9	550	6.000	30	100R	
216-3/540		11	650	8.000	30	150R	
218-3/540		17	950	10.000	30	240R	
KF		206-4	1.2	200	2.000	20	10R
		208-4	1.5	250	4.000	20	15R
		210-4	2.5	350	6.000	20	33R
	212-4	2.0	300	4.000	20	15R	
	214-4	3.0	450	6.000	20	33R	
	216-4	4.0	550	8.000	20	47R	
	218-4	6.0	850	10.000	20	82R	
	206-440	1.2	300	2.000	30	30R	
	208-440	1.5	350	4.000	30	47R	
	210-440	2.5	450	6.000	30	100R	
	212-440	2.0	400	4.000	30	47R	
	214-440	3.0	450	6.000	30	100R	
	216-440	4.0	650	8.000	30	150R	
	218-440	6.0	950	10.000	30	240R	

Serie	Typ	P ₇₀ [W]	K	U _{max} [V]	I _{max} [A]	from R _{min} [Ω]
KT	206-6	1.2	200	2.000	20	10R
	208-6	1.5	250	4.000	20	15R
	210-6	2.5	350	6.000	20	33R
	212-6	2.0	300	4.000	20	15R
	214-6	3.0	450	6.000	20	33R
	216-6	4.0	550	8.000	20	47R
	218-6	6.0	850	10.000	20	82R
	206-640	1.2	300	2.000	30	30R
	208-640	1.5	350	4.000	30	47R
	210-640	2.5	450	6.000	30	100R
	212-640	2.0	400	4.000	30	47R
	214-640	3.0	550	6.000	30	100R
	216-640	4.0	650	8.000	30	150R
	218-640	6.0	950	10.000	30	240R
	KT	212-7	2.0	300	4.000	20
214-7		2.5	450	6.000	20	33R
216-7		3.5	550	8.000	20	47R
218-7		4.5	850	10.000	20	82R
212-740		2.0	400	4.000	30	47R
214-740		2.5	550	6.000	30	100R
216-740		3.5	650	8.000	30	150R
218-740		4.5	950	10.000	30	240R
KN	350-8	1.0				
	351-8	2.0				
	352-8	3.0				
	353-8	4.0				
	354-8	5.0				
KP	290-0/1	2.0	100	2.000	20	18R
	292-0/1	4.0	200	4.000	20	27R
	294-0/1	5.0	250	6.000	20	43R
	296-0/1	6.5	300	8.000	20	62R
	298-0/1	8.0	400	10.000	20	82R
	290-0/140	2.0	200	2.000	30	48R
	292-0/140	4.0	300	4.000	30	82R
	294-0/140	5.0	350	6.000	30	120R
	296-0/140	6.5	400	8.000	30	180R
	298-0/140	8.0	500	10.000	30	240R
KWP	330-3/5	2.0	100	2.000	20	18R
	331-3/5	2.0	100	2.000	20	18R
	332-3/5	2.5	150	4.000	20	27R
	333-3/5	3.0	200	6.000	20	39R
	335-3/5	4.5	250	6.500	20	43R

Please ask VITROHM for details or see:
 "Design Notes for Current Sense Resistors"
 available from VITROHM or at:
www.vitrohm.de

Serie	Typ	P_{70} [W]	K	U_{max} [V]	I_{max} [A]	from R_{min} [Ω]
KVP	331-3/540	2.0	200	2.000	30	18R
	332-3/540	2.5	250	4.000	30	27R
	333-3/540	3.0	300	6.000	30	39R
	335-3/540	4.5	350	6.500	30	43R
	336-3/540	4.5	350	8.000	30	47R
KVA	KVA15	15	700	8.000	20	38R
	KVA20	20	900	10.000	20	68R
	KVA30	30	1.300	15.000	20	100R
	KVA40	30	1.700	17.000	20	130R
KVV	302-3	2	100	600	10	3R3
	304-3	3	150	1.000	10	9R1
	306-3	5	200	2.000	20	10R
	308-3	7	250	3.000	20	15R
CR	251-0	1.0	25	500	10	3R3
	253-0	2.0	50	650	10	9R1
	254-0	2.5	65	550	10	9R1
	255-0	3.0	75	750	10	11R
	256-0	3.5	85	900	10	11R
	257-0	4.3	110	1.000	10	34R
	258-0	5.0	125	1.500	10	30R
	259-0	6.5	165	2.000	10	43R
CRF	251-4	1.0	12	500	10	10R
	253-4	2.0	20	650	10	10R
	254-4	2.5	35	550	10	10R
	256-4	3.5	42	900	10	10R
	257-4	4.3	55	1.000	10	10R
BW	234-0	0.75		600		
	235-0	1.5		1.000		
BVF	236-0	1.5	special datasheet available	600	special datasheet available	
	237-0	0.75		400		