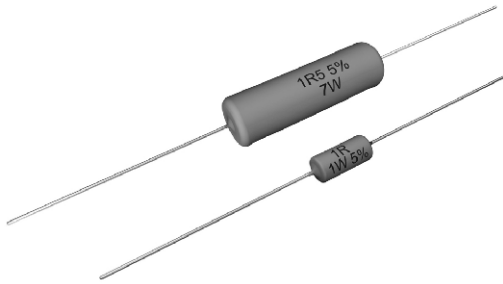


## Cemented Wirewound Resistors



### FEATURES

- All welded construction
- Ceramic core
- Non-flammable cement coating
- Tinned copper-clad iron leads  
(see note 3 in the 12NC Ordering Code table)
- High power dissipation in small volume
- Ideal for pulse application
- Lead (Pb)-free



**RoHS**  
COMPLIANT

STANDARD ELECTRICAL SPECIFICATIONS								
GLOBAL MODEL	HISTORICAL MODEL	P <sub>40 °C</sub> W	P <sub>70 °C</sub> W	TOLERANCE E24 SERIES ± %	LIMITING VOLTAGE V	RESISTANCE RANGE Ω		
						TCR = - 10...- 80 ppm/K	TCR = 100... 180 ppm/K	TCR = ± 100 ppm/K
AC01000	AC01	1	0.9	5	$\sqrt{P \times R}$	R10 - 33R	36R - 2K4	-
AC03000	AC03	3	2.5	5	$\sqrt{P \times R}$	R10 - 390R	430R- 3K3	3K6 - 5K1
AC04000	AC04	4	3.5	5	$\sqrt{P \times R}$	R10 - 620R	680 R- 6K8	-
AC05000	AC05	5	4.7	5	$\sqrt{P \times R}$	R10 - 910R	1K0 - 10K	-
AC07000	AC07	7	5.8	5	$\sqrt{P \times R}$	R10 - 1K5	1K6 - 15K	-
AC10000	AC10	10	8.4	5	$\sqrt{P \times R}$	R68 - 560R	620 R - 27K	-

GLOBAL PART NUMBER INFORMATION																
New Global Part Numbering: AC03000001509JAC00 (preferred part number format)																
A	C	0	3	0	0	0	0	1	5	0	9	J	A	C	0	0
MODEL <small>(see Standard Electrical Specifications table)</small>	SPECIAL CHARACTER 0 = neutral 1 = RT 2 = SWI 3 = DK SP 20 mm 4 = DK LP 33 mm 5 = DK LP 17.8 mm 6 = NI 7 = DK LP 25.4 mm 9 = WSZ 6720 8 = DK SP 25.4 mm Z = value overflow (Special) A = E/K 22.5 mm			TCR/MATERIAL 0 = standard	VALUE 3 digit value 1 digit multiplier Multiplier: 7 = *10 <sup>-3</sup> 8 = *10 <sup>-2</sup> 9 = *10 <sup>-1</sup> 0 = *10 <sup>0</sup> 1 = *10 <sup>1</sup> 2 = *10 <sup>2</sup> 5 = 10 <sup>-4</sup>	TOLERANCE J = ± 5.0 %	PACKAGING <small>(see Packaging table)</small>	SPECIAL The 5 digit BV number will be encoded using a 36 character code. This code contains numbers 0...9 and letters A...Z (36 characters total) and allows to encode at least 46 655 five digit BV numbers.  00 = standard E0 = CECC E0 E6 = CECC E6								
Historical Part Number example: AC03 15R 5% AC (will continue to be accepted)																
AC03	15R	5%						AC								
HISTORICAL MODEL	VALUE	TOLERANCE						PACKAGING								



<b>PACKAGING TABLE</b>		
<b>SAP</b>	<b>DESCRIPTION</b>	<b>TYPE</b>
AE	Bandolier in ammo pack, 2500 pieces	AC01RT
A1	Bandolier in ammopack straight leads, 1000 pieces	AC01
AB	Bandolier in ammopack straight leads, 250 pieces	AC10
AC	Bandolier in ammopack straight leads, 500 pieces	AC03, AC04, AC05, AC07
LC	Loose 500 pieces	AC03 DK, AC04 DK, AC05 DK
LB	Loose 250 pieces	AC07
BM	Blister 1250 pieces	AC03
LK	Loose 300 pieces	AC10

<b>12NC (HISTORICAL CODING REFERENCE) INDICATING RESISTOR TYPE AND PACKAGING</b>				
<b>TYPE</b>	<b>ORDERING CODE 23.. ... ..</b>			
	<b>BANDOLIER IN AMMOPACK</b>			
	<b>RADIAL</b>	<b>STRAIGHT LEADS</b>		
	<b>2500 units</b>	<b>250 units</b>	<b>500 units</b>	<b>1000 units</b>
AC01	06 328 90... <sup>(2) (3)</sup>	-	-	06 328 33...
AC03 <sup>(1)</sup>	-	-	22 329 03...	-
AC04 <sup>(1)</sup>	-	-	22 329 04...	-
AC05 <sup>(1)</sup>	-	-	22 329 05...	-
AC07 <sup>(1)</sup>	-	-	22 329 07...	-
AC10	-	Global part numbering	-	-

**Notes**

- (1) Products with bent leads and bulk packaging (100 pieces) are available on request.  
 (2) Last 3 digits available on request.  
 (3) Radial parts with tin plated copper leads.

**12NC INFORMATION**

- The resistors have a 12-digit ordering code starting with 23.
- The subsequent 7 digits indicate the resistor type, specification and packaging; see the 12NC Ordering Code table.
- The remaining 3 digits indicate the resistance value:
  - The first 2 digits indicate the resistance value.
  - The last digit indicates the resistance decade in accordance with the 12NC Indicating Resistance Decade table.

**Last Digit of 12NC Indicating Resistance Decade**

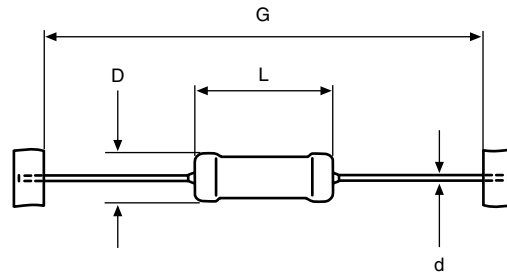
<b>RESISTANCE DECADE</b>	<b>LAST DIGIT</b>
0.1 $\Omega$ to 0.91 $\Omega$	7
1 $\Omega$ to 9.1 $\Omega$	8
10 $\Omega$ to 91 $\Omega$	9
100 $\Omega$ to 910 $\Omega$	1
1 k $\Omega$ to 9.1 k $\Omega$	2
10 k $\Omega$ to 56 k $\Omega$	3

**Ordering Example**

The ordering code of an AC01 resistor, value 47 k $\Omega$  supplied in ammopack of 1000 units is: 2306 328 33473.

Product specifications deviating from the standard values are available on request.

## DIMENSIONS



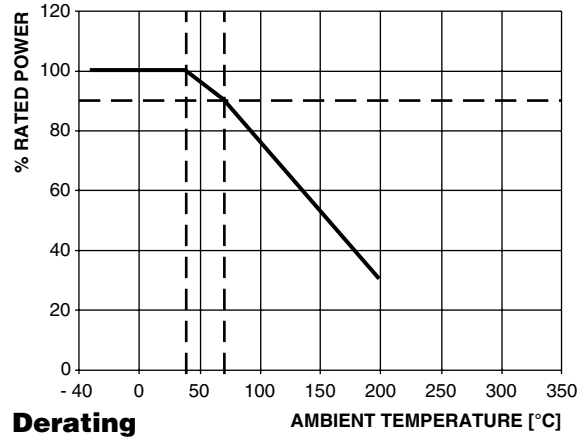
For packaging dimensions see separate packaging dimensions page.

<b>DIMENSIONS</b> - resistor types, mass and relevant physical dimensions					
MODEL	DIMENSIONS in millimeters [inches]				
	D max	L max	d	G	WEIGHT g PER 100 UNITS
AC01	4.3 [0.169]	11 [0.433]	0.8 ± 0.03 [0.031 ± 0.001]	63 ± 1 [2.480 ± 0.039]	52
AC03	4.8 [0.189]	13 [0.512]		63 ± 1 [2.480 ± 0.039]	75
AC04	5.5 [0.217]	15.8 [0.622]		63 ± 1 [2.480 ± 0.039]	110
AC05	7.5 [0.295]	17 [0.669]		63 ± 1 [2.480 ± 0.039]	190
AC07	7.5 [0.295]	25 [0.984]		73 ± 1 [2.874 ± 0.039]	260
AC10	8.0 [0.315]	44 [1.732]		88 ± 1 [3.465 ± 0.039]	450

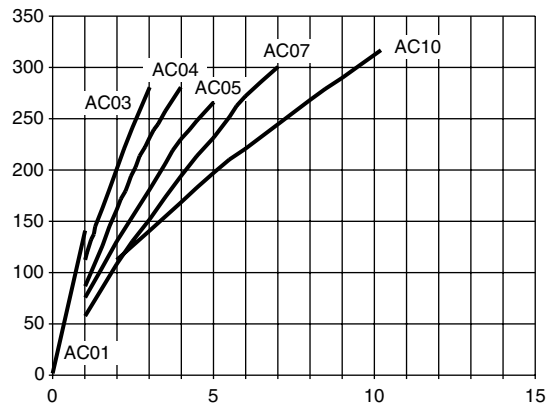
<b>PERFORMANCE</b>	
TEST	TEST RESULTS
Climatic category	40/200/56
Damp heat, steady state 56d	$\Delta R: \pm (5 \% R + 0.1 \Omega)$
Storage 1000 h, 200 °C, no load	$\Delta R: \pm (5 \% R + 0.1 \Omega)$
Climatic sequence	$\Delta R: \pm (1 \% R + 0.05 \Omega)$
Load life 1000 h	$\Delta R: \pm (5 \% R + 0.1 \Omega)$
Resistance to soldering heat	$\Delta R: \pm (0.5 \% R + 0.05 \Omega)$
Robustness of termination, 10N	$\Delta R: \pm (0.5 \% R + 0.05 \Omega)$
Short time overload, 10 x rated power for 5 s	$\Delta R: \pm (2 \% R + 0.1 \Omega)$



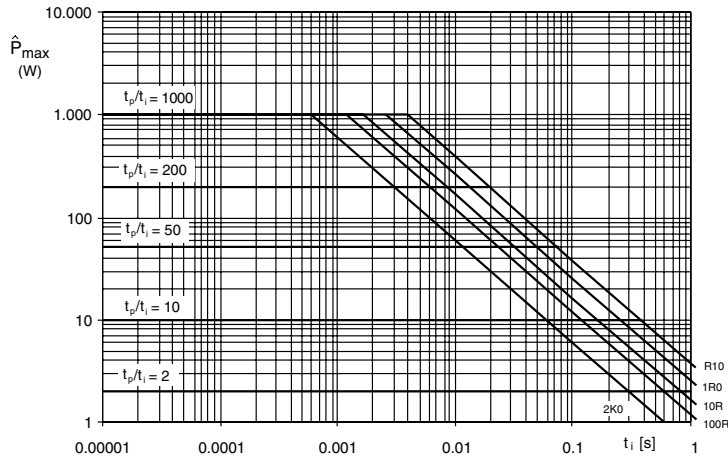
**FUNCTIONAL PERFORMANCE**



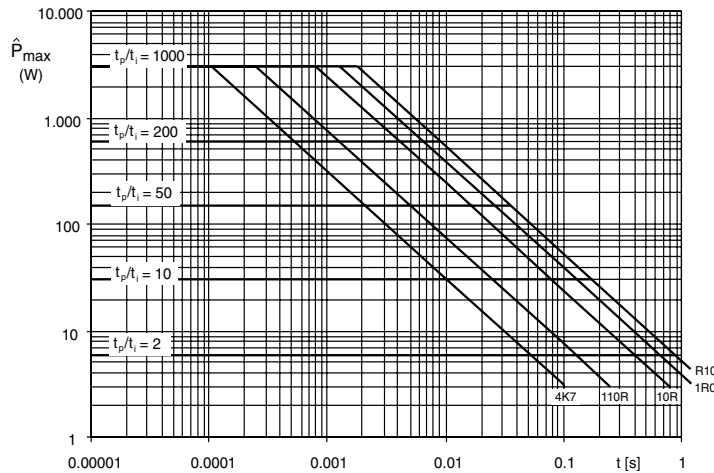
**Derating**



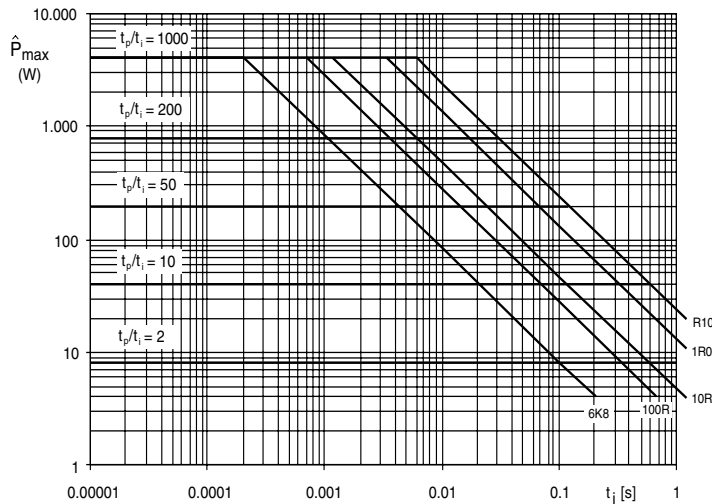
**Temperature Rise**



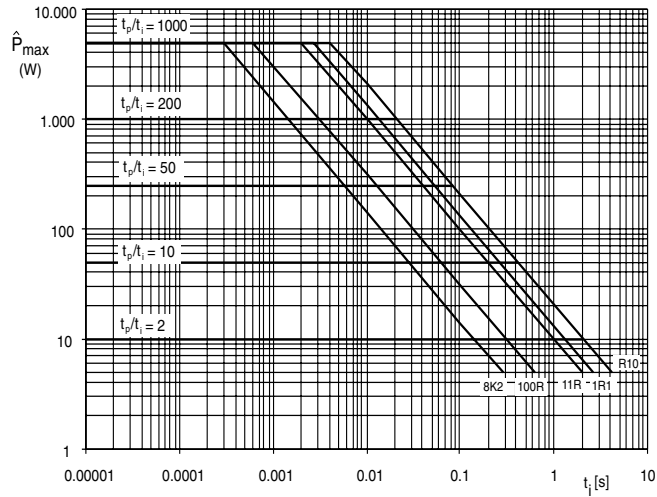
AC01 Pulse on a regular basis; maximum permissible peak pulse power ( $\hat{P}_{max}$ ) as a function of pulse duration ( $t_i$ ).



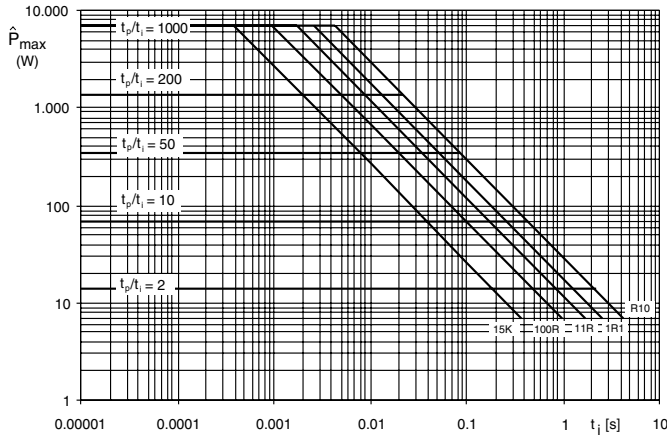
AC03 Pulse on a regular basis; maximum permissible peak pulse power ( $\hat{P}_{max}$ ) as a function of pulse duration ( $t_i$ ).



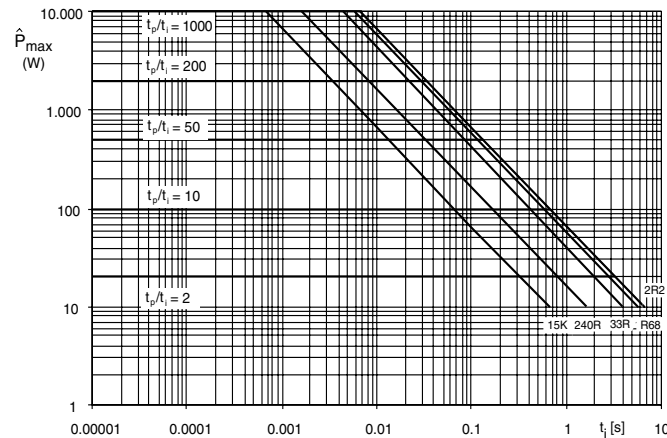
AC04 Pulse on a regular basis; maximum permissible peak pulse power ( $\hat{P}_{max}$ ) as a function of pulse duration ( $t_i$ ).



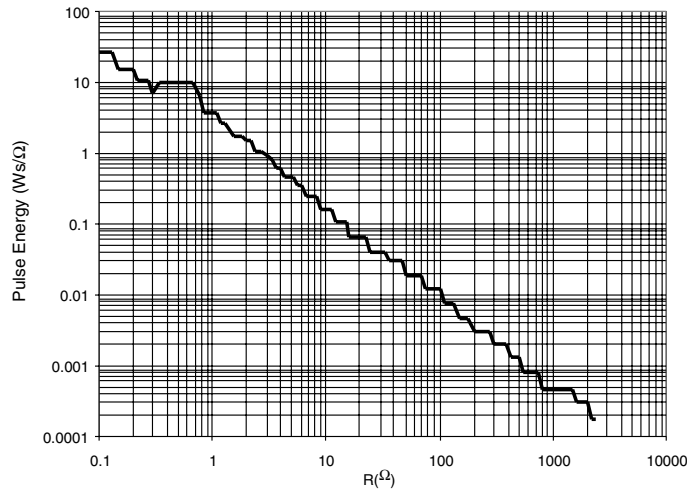
**AC05** Pulse on a regular basis; maximum permissible peak pulse power ( $\hat{P}_{max}$ ) as a function of pulse duration ( $t_i$ ).



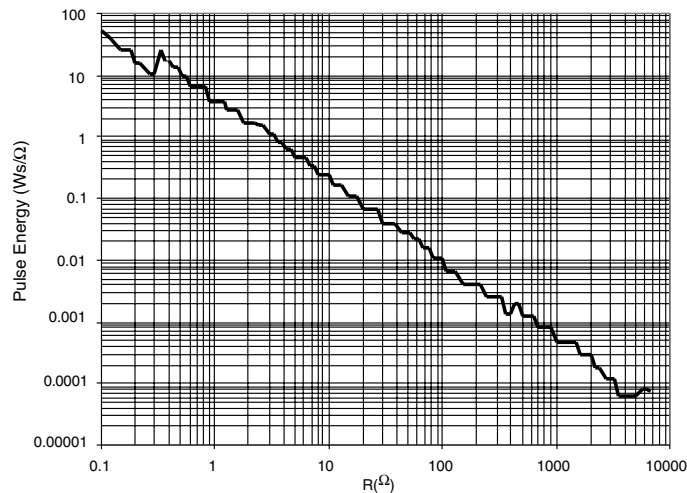
**AC07** Pulse on a regular basis; maximum permissible peak pulse power ( $\hat{P}_{max}$ ) as a function of pulse duration ( $t_i$ ).



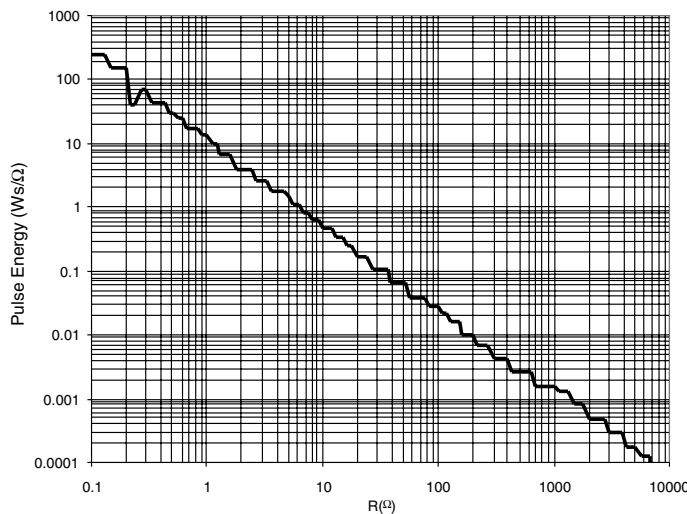
**AC10** Pulse on a regular basis; maximum permissible peak pulse power ( $\hat{P}_{max}$ ) as a function of pulse duration ( $t_i$ ).



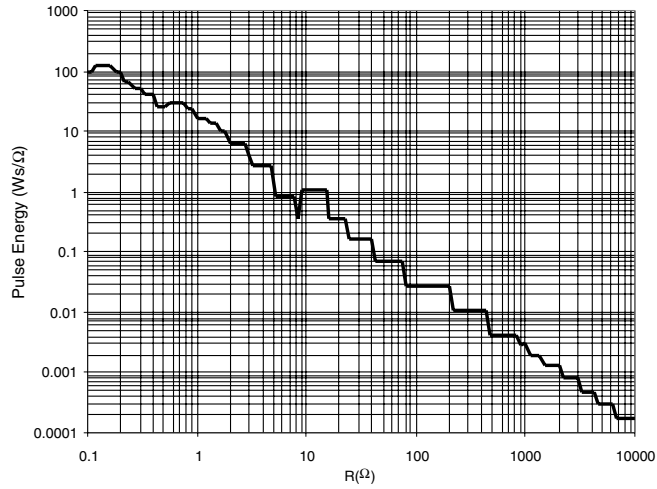
**AC01** Pulse capability; E(Ws) as a function of R(Ω).



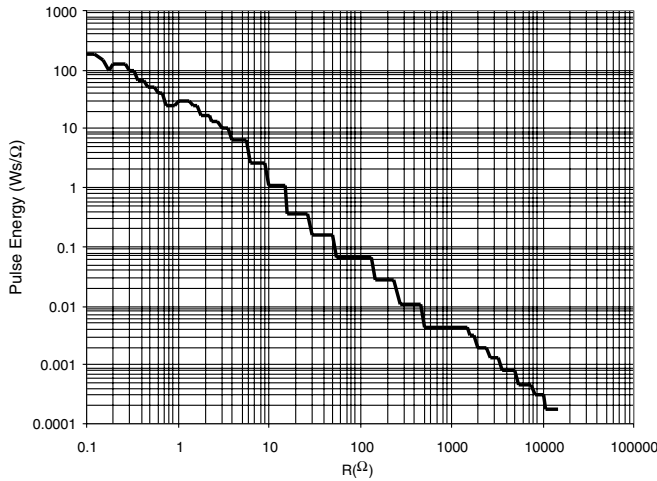
**AC03** Pulse capability; E(Ws) as a function of R(Ω).



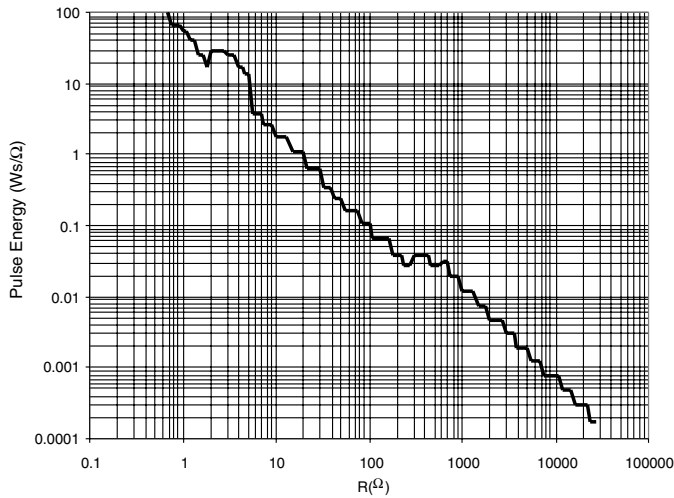
**AC04** Pulse capability; E(Ws) as a function of R(Ω).



AC05 Pulse capability; E(Ws) as a function of R(Ω).



AC07 Pulse capability; E(Ws) as a function of R(Ω).



AC10 Pulse capability; E(Ws) as a function of R(Ω).





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