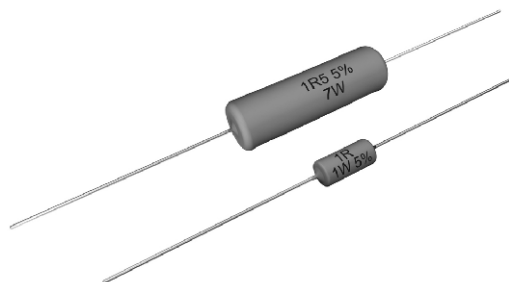


## Cemented Wirewound Resistors



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

12NC ORDERING CODE INDICATING RESISTOR TYPE AND PACKING			
TYPE	ORDERING CODE 23.. ... ..		
	BANDOLIER IN AMMOPACK		
	RADIAL	STRAIGHT LEADS	
	2500 units	500 units	1000 units
AC01	06 328 90...(2) (3)	-	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	-	22 329 10...	-

### Note

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

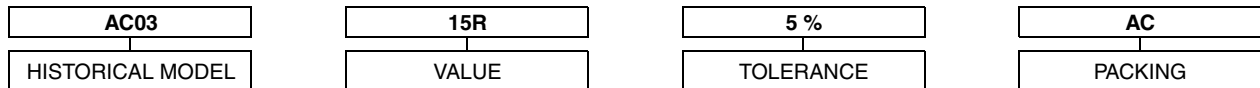
**GLOBAL PART NUMBER INFORMATION**

New Global Part Numbering: AC0300001509JAC00 (preferred part number format)



MODEL	SPECIAL CHARACTER	TCR/MATERIAL	VALUE	TOLERANCE	PACKING	SPECIAL
(see Standard Electrical Specifications table)	<b>0</b> = neutral <b>1</b> = RT <b>2</b> = SWI <b>3</b> = DK SP 20 mm <b>4</b> = DK LP 33 mm <b>5</b> = DK LP 17.8 mm <b>6</b> = NI <b>7</b> = DK LP 25.4 mm <b>9</b> = WSZ 6720 <b>8</b> = DK SP 25.4 mm <b>Z</b> = value overflow (Special) <b>A</b> = E/K 22.5 mm	<b>0</b> = standard	3 digit value 1 digit multiplier Multiplier: <b>7</b> = $\times 10^{-3}$ <b>8</b> = $\times 10^{-2}$ <b>9</b> = $\times 10^{-1}$ <b>0</b> = $\times 10^0$ <b>1</b> = $\times 10^1$ <b>2</b> = $\times 10^2$ <b>5</b> = $10^{-4}$	<b>J</b> = $\pm 5.0\%$	(see Packing table)	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.  <b>00</b> = standard <b>E0</b> = CECC E0 <b>E6</b> = CECC E6

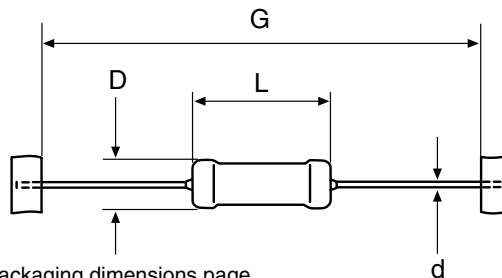
Historical Part Number example: AC03 15R 5% AC (will continue to be accepted)



**PACKING TABLE**

SAP	DESCRIPTION	TYPE
AE	Bandolier in ammo pack radial, 2500 pcs.	AC01
A1	Bandolier in ammpack straight leads, 1000 pcs.	AC01
AC	Bandolier in ammpack straight leads, 500 pcs.	AC03, AC04, AC05, AC07, AC10
LC	Loose 500 pcs.	AC03 DK, AC04 DK, AC05 DK
LB	Loose 250 pcs.	AC07
BM	Blister 1250 pcs.	AC03
LK	Loose 300 pcs.	AC10

**DIMENSIONS**



For packaging dimensions see separate packaging dimensions page.

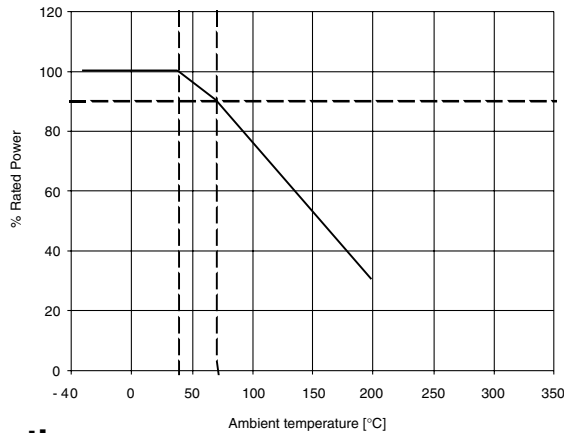
**DIMENSIONS - resistor types, mass and relevant physical dimensions**

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 $\pm$ 0.03 [0.031 $\pm$ 0.001]	63 $\pm$ 1 [2.480 $\pm$ 0.039]	52
AC03	4.8 [0.189]	13 [0.512]		63 $\pm$ 1 [2.480 $\pm$ 0.039]	75
AC04	5.5 [0.217]	15.8 [0.622]		63 $\pm$ 1 [2.480 $\pm$ 0.039]	110
AC05	7.5 [0.295]	17 [0.669]		63 $\pm$ 1 [2.480 $\pm$ 0.039]	190
AC07	7.5 [0.295]	25 [0.984]		73 $\pm$ 1 [2.874 $\pm$ 0.039]	260
AC10	8.0 [0.315]	44 [1.732]		88 $\pm$ 1 [3.465 $\pm$ 0.039]	450

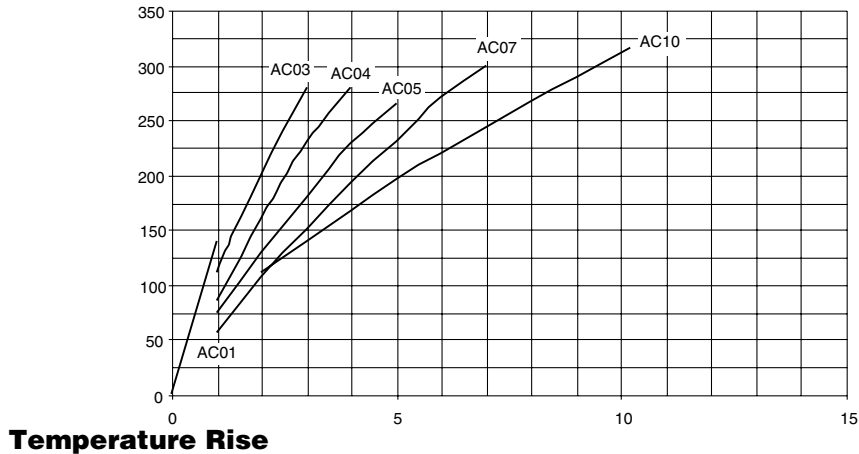


PERFORMANCE	
TEST	TEST RESULTS
Climatic category	40/200/56
Damp heat, steady state 56d	$\frac{\Delta R}{R}_{max} : \pm 5 \% + 0.1 \Omega$
Storage 1000 hours, 200 °C, no load	$\frac{\Delta R}{R}_{max} : \pm 5 \% + 0.1 \Omega$
Climatic sequence	$\frac{\Delta R}{R}_{max} : \pm 1 \% + 0.05 \Omega$
Load life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

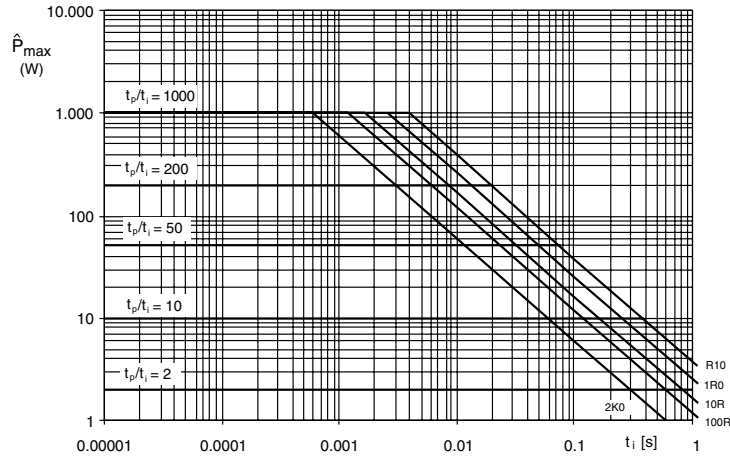
## FUNCTIONAL PERFORMANCE



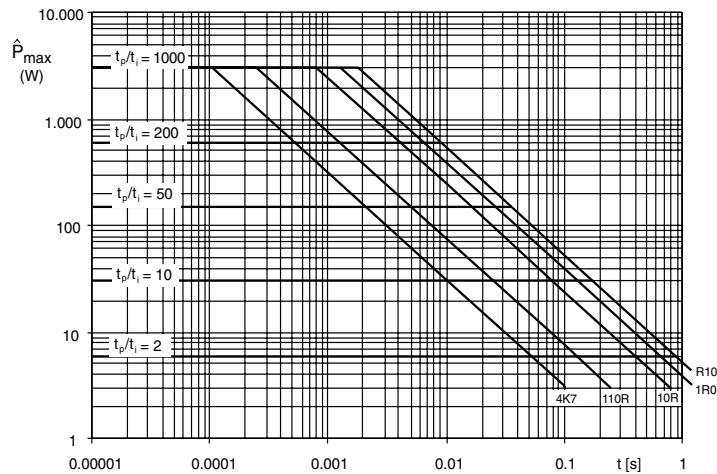
### Derating



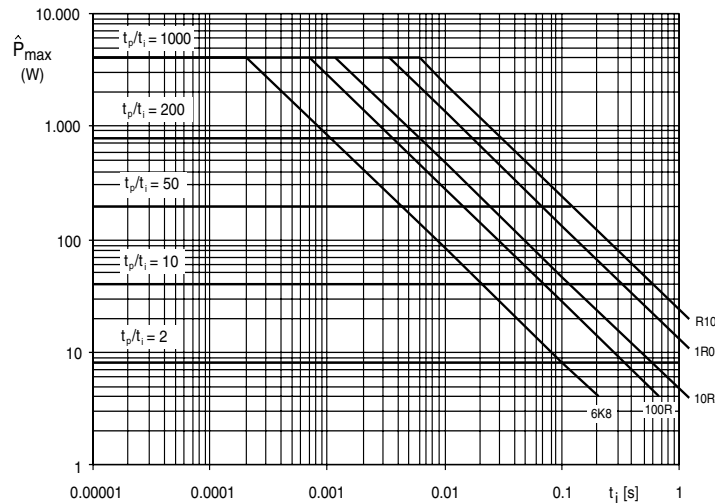
### Temperature Rise



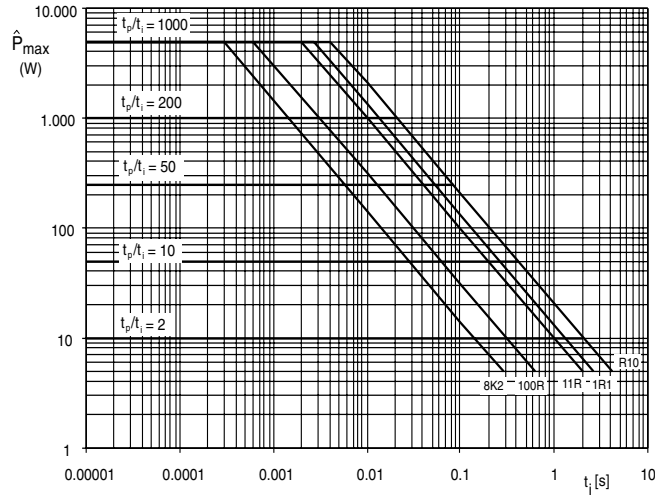
AC01 Pulse on a regular basis; maximum permissible peak pulse power ( $\hat{P}_{max}$ ) as a function of pulse duration ( $t_i$ ).



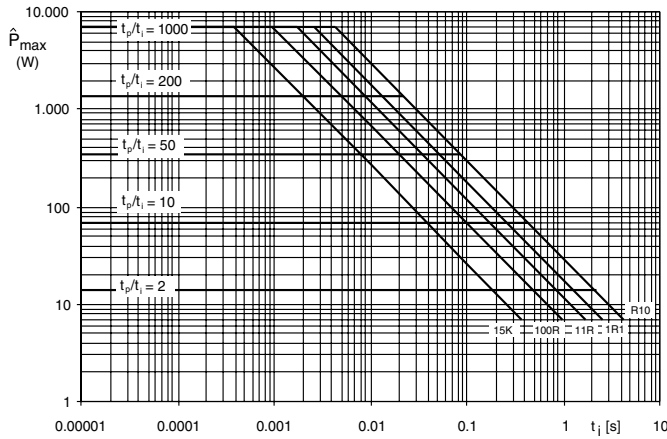
AC03 Pulse on a regular basis; maximum permissible peak pulse power ( $\hat{P}_{max}$ ) as a function of pulse duration ( $t_i$ ).



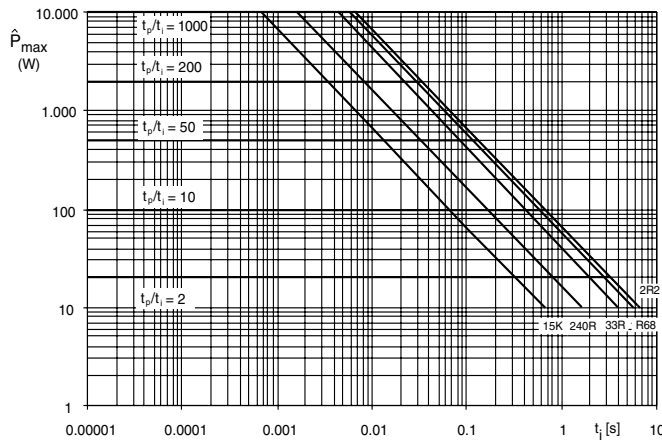
AC04 Pulse on a regular basis; maximum permissible peak pulse power ( $\hat{P}_{max}$ ) as a function of pulse duration ( $t_i$ ).



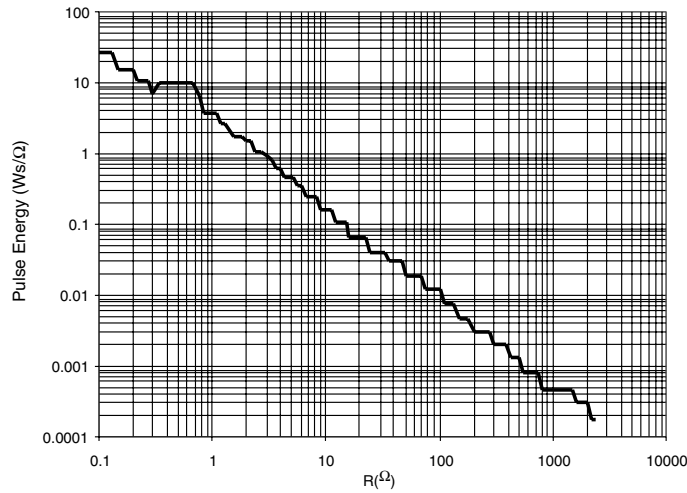
AC05 Pulse on a regular basis; maximum permissible peak pulse power ( $\hat{P}_{max}$ ) as a function of pulse duration ( $t_i$ ).



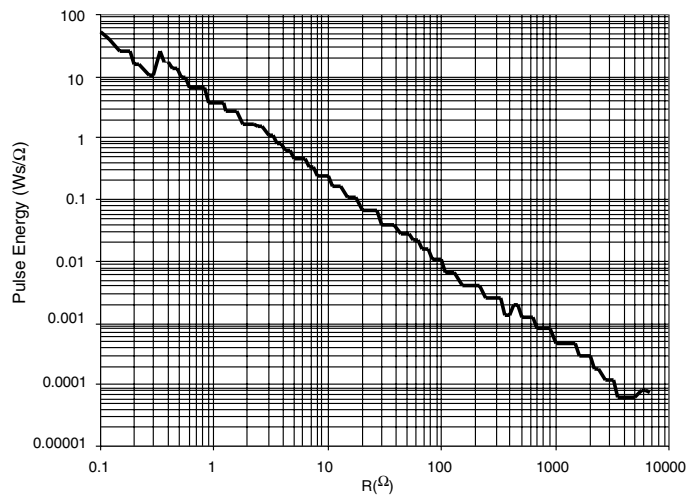
AC07 Pulse on a regular basis; maximum permissible peak pulse power ( $\hat{P}_{max}$ ) as a function of pulse duration ( $t_i$ ).



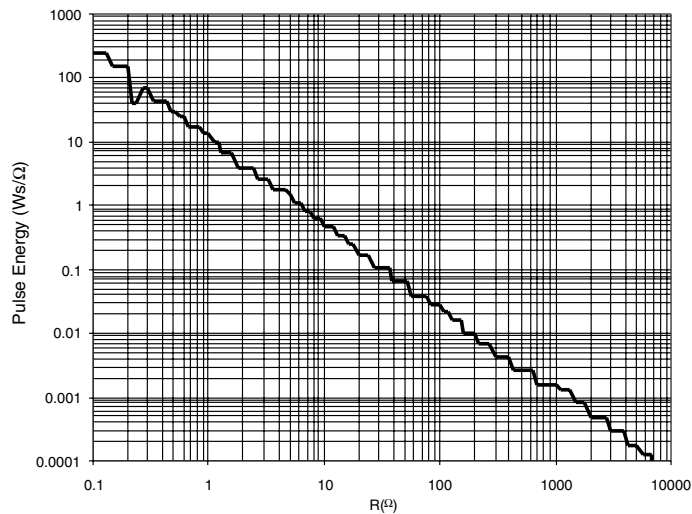
AC10 Pulse on a regular basis; maximum permissible peak pulse power ( $\hat{P}_{max}$ ) as a function of pulse duration ( $t_i$ ).



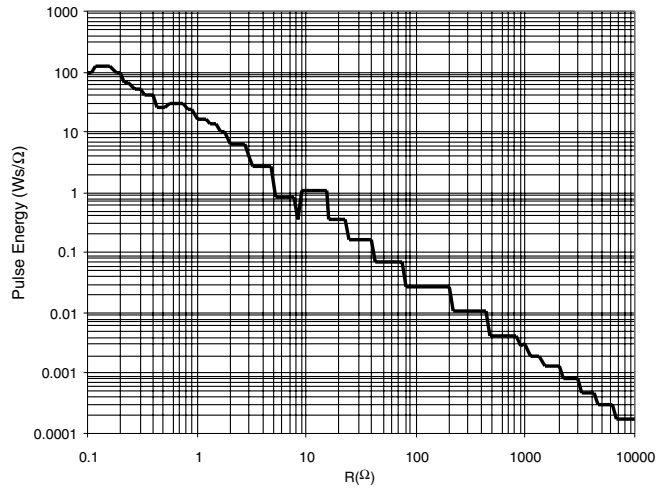
**AC01** Pulse capability; E(Ws) as a function of R( $\Omega$ ).



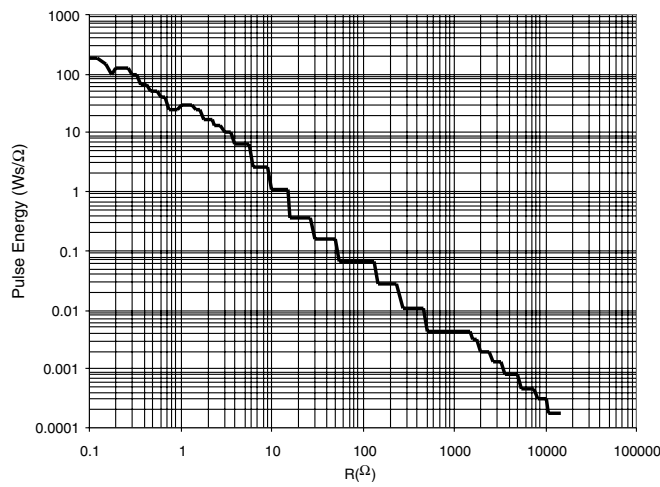
**AC03** Pulse capability; E(Ws) as a function of R( $\Omega$ ).



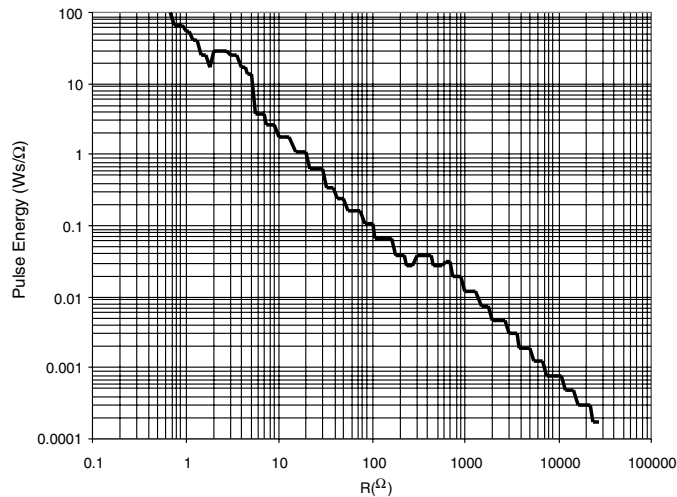
**AC04** Pulse capability; E(Ws) as a function of R( $\Omega$ ).



**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).

**ORDERING INFORMATION**

Components may be ordered by using either a simple clear text ordering code, see "Type description and ordering code" or Vishay BCcomponents' unique 12NC.

**Numeric ordering code (12NC)**

- 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**

RESISTANCE DECADE	LAST DIGIT
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 ammpack of 1000 units is: 2306 328 33473.

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





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