

# Standard Resistance Values and Designators



LEADFREE  
RoHS Compliant

## Symbols of Resistance Temperature Characteristics

Symbol	Resistance Temperature Characteristic
T	±10ppm/°C
E	±25ppm/°C
C	±50ppm/°C
K	±100ppm/°C
D	±200ppm/°C

## Symbols of Resistance Value tolerance

Symbol	A	B	C	D	F	G	J
Tolerance	±0.05%	±0.1%	±0.25%	±0.5%	±1.0%	±2.0%	±5.0%

  

Symbol	K	L	M	T	Y	S
Tolerance	±10%	±15%	±20%	±25%	±50%	+0%, -30%

## Codes for Fixed Resistors

Standard Resistance Values for the 10- to 100 Decade (also usable in decade multiples or sub-multiples)

### Resistance Tolerance (±%)

E192					E96					E24					E12					E6											
0.1%	0.25%	0.5%	1%	2%	5%	10%	20%	0.1%	0.25%	0.5%	1%	2%	5%	10%	20%	0.1%	0.25%	0.5%	1%	2%	5%	10%	20%	0.1%	0.25%	0.5%	1%	2%	5%	10%	20%
10.0	10.0	10.0	10.0	10.0	15.8	15.8	-	-	-	24.9	24.9	-	-	-	39.2	39.2	39.0	39.0	-	62.6	-	-	-	-	62.6	-	-	-	-	-	
10.1	-	-	-	-	16.0	-	16.0	-	-	25.2	-	-	-	-	39.7	-	-	-	-	63.4	63.4	-	-	-	63.4	63.4	-	-	-	-	
10.2	10.2	-	-	-	16.2	16.2	-	-	-	25.5	25.5	-	-	-	40.2	40.2	-	-	-	64.2	-	-	-	-	64.2	-	-	-	-	-	
10.4	-	-	-	-	16.4	-	-	-	-	25.8	-	-	-	-	40.7	-	-	-	-	64.9	64.9	-	-	-	64.9	64.9	-	-	-	-	
10.5	10.5	-	-	-	16.5	15.5	-	-	-	26.1	26.1	-	-	-	41.2	41.2	-	-	-	65.7	-	-	-	-	65.7	-	-	-	-	-	
10.6	-	-	-	-	16.7	-	-	-	-	26.4	-	-	-	-	41.7	-	-	-	-	66.5	66.5	-	-	-	66.5	66.5	-	-	-	-	
10.7	10.7	-	-	-	16.9	16.9	-	-	-	26.7	26.7	-	-	-	42.2	42.2	-	-	-	67.3	-	-	-	-	67.3	-	-	-	-	-	
10.9	-	-	-	-	17.2	-	-	-	-	27.1	-	27.0	27	-	42.7	-	-	-	-	68.1	68.1	68.0	68.0	68.0	68.1	68.1	68.0	68.0	68.0	68.0	
11.0	11.0	11.0	-	-	17.4	17.4	-	-	-	27.4	27.4	-	-	-	43.2	43.2	43.0	-	-	69.0	-	-	-	-	69.0	-	-	-	-	-	
11.1	-	-	-	-	17.6	-	-	-	-	27.7	-	-	-	-	43.7	-	-	-	-	69.8	69.8	-	-	-	69.8	69.8	-	-	-	-	
11.3	11.3	-	-	-	17.8	17.8	-	-	-	28.0	28.0	-	-	-	44.2	44.2	-	-	-	70.6	-	-	-	-	70.6	-	-	-	-	-	
11.4	-	-	-	-	18.0	-	18.0	18.0	-	28.4	-	-	-	-	44.8	-	-	-	-	71.5	71.5	-	-	-	71.5	71.5	-	-	-	-	
11.5	11.5	-	-	-	18.2	18.2	-	-	-	28.7	28.7	-	-	-	45.3	45.3	-	-	-	72.3	-	-	-	-	72.3	-	-	-	-	-	
11.7	-	-	-	-	18.4	-	-	-	-	29.1	-	-	-	-	45.9	-	-	-	-	73.2	73.2	-	-	-	73.2	73.2	-	-	-	-	
11.8	11.8	-	-	-	18.7	18.7	-	-	-	29.4	29.4	-	-	-	46.4	46.4	-	-	-	74.1	-	-	-	-	74.1	-	-	-	-	-	
12.0	-	12.0	12.0	-	18.9	-	-	-	-	29.8	-	-	-	-	47.0	-	47.0	47.0	47.0	75.0	75.0	75.0	-	-	75.0	75.0	75.0	-	-	-	
12.1	12.1	-	-	-	19.1	19.1	-	-	-	30.1	30.1	30.0	-	-	47.5	47.5	-	-	-	75.9	-	-	-	-	75.9	-	-	-	-	-	
12.3	-	-	-	-	19.3	-	-	-	-	30.5	-	-	-	-	48.1	-	-	-	-	76.8	76.8	-	-	-	76.8	76.8	-	-	-	-	
12.4	12.4	-	-	-	19.6	19.6	-	-	-	30.9	30.9	-	-	-	48.7	48.7	-	-	-	77.7	-	-	-	-	77.7	-	-	-	-	-	
12.6	-	-	-	-	19.8	-	-	-	-	31.2	-	-	-	-	49.3	-	-	-	-	78.7	78.7	-	-	-	78.7	78.7	-	-	-	-	
12.7	12.7	-	-	-	20.0	20.0	20.0	-	-	31.6	31.6	-	-	-	49.9	49.9	-	-	-	79.6	-	-	-	-	79.6	-	-	-	-	-	
12.9	-	-	-	-	20.3	-	-	-	-	32.0	-	-	-	-	50.5	-	-	-	-	80.6	80.6	-	-	-	80.6	80.6	-	-	-	-	
13.0	13.0	13.0	-	-	20.5	20.5	-	-	-	32.4	32.4	-	-	-	51.1	51.1	51.0	-	-	81.6	-	-	-	-	81.6	-	-	-	-	-	
13.2	-	-	-	-	20.8	-	-	-	-	32.8	-	-	-	-	51.7	-	-	-	-	82.5	82.5	82.0	82.0	-	82.5	82.5	82.0	82.0	-	-	
13.3	13.3	-	-	-	21.0	21.0	-	-	-	33.2	33.2	33.0	33.0	33.0	52.3	52.3	-	-	-	83.5	-	-	-	-	83.5	-	-	-	-	-	
13.5	-	-	-	-	21.3	-	-	-	-	33.6	-	-	-	-	53.0	-	-	-	-	84.5	84.5	-	-	-	84.5	84.5	-	-	-	-	
13.7	13.7	-	-	-	21.5	21.5	-	-	-	34.0	34.0	-	-	-	53.6	53.6	-	-	-	85.6	-	-	-	-	85.6	-	-	-	-	-	
13.8	-	-	-	-	21.8	-	-	-	-	34.4	-	-	-	-	54.2	-	-	-	-	86.6	86.6	-	-	-	86.6	86.6	-	-	-	-	
14.0	14.0	-	-	-	22.1	22.1	22.0	22.0	22.0	34.8	34.8	-	-	-	54.9	54.9	-	-	-	87.6	-	-	-	-	87.6	-	-	-	-	-	
14.2	-	-	-	-	22.3	-	-	-	-	35.2	-	-	-	-	55.6	-	-	-	-	88.7	88.7	-	-	-	88.7	88.7	-	-	-	-	
14.3	14.3	-	-	-	22.6	22.6	-	-	-	35.7	35.7	-	-	-	56.2	56.2	56.0	56.0	-	89.8	-	-	-	-	89.8	-	-	-	-	-	
14.5	-	-	-	-	22.9	-	-	-	-	36.1	-	36.0	-	-	56.95	-57.6	-	-	-	90.9	90.9	91.0	-	-	90.9	90.9	91.0	-	-	-	
14.7	14.7	-	-	-	23.2	23.2	-	-	-	36.5	36.5	-	-	-	7.6	-	-	-	-	92.0	-	-	-	-	92.0	-	-	-	-	-	
14.9	-	-	-	-	23.4	-	-	-	-	37.0	-	-	-	-	58.3	59.0	-	-	-	93.1	93.1	-	-	-	93.1	93.1	-	-	-	-	
15.0	15.0	15.0	15.0	15.0	23.7	23.7	-	-	-	37.4	37.4	-	-	-	59.0	-	-	-	-	94.2	-	-	-	-	94.2	-	-	-	-	-	
15.2	-	-	-	-	24.0	-	24.0	-	-	37.9	-	-	-	-	59.7	60.4	-	-	-	95.3	95.3	-	-	-	95.3	95.3	-	-	-	-	
15.4	15.4	-	-	-	24.3	24.3	-	-	-	38.3	38.3	-	-	-	60.4	-	-	-	-	96.5	-	-	-	-	96.5	-	-	-	-	-	
15.6	-	-	-	-	24.6	-	-	-	-	38.8	-	-	-	-	61.2	61.9	-	-	-	97.6	97.6	-	-	-	97.6	97.6	-	-	-	-	
															61.9	-	62.0	-	-	98.8	-	-	-	-	98.8	-	-	-	-	-	

## Numerical Symbols & Multiplier

Symbol	T (tera)	G (giga)	M (mega)	K (kilo)	m (milli)	μ (micro)	n (nano)	p (pico)	Å (angstrom)	ppm
Multiplier	10 <sup>12</sup>	10 <sup>9</sup>	10 <sup>6</sup>	10 <sup>3</sup>	10 <sup>-3</sup>	10 <sup>-6</sup>	10 <sup>-9</sup>	10 <sup>-12</sup>	10 <sup>-7</sup> mm	10 <sup>-6</sup>