Standard Electronic Decade Value Tables

STANDARD DECADE RESISTANCE VALUES

The following table lists four established number series which are used as preferred values in electronic design. Each series is shown under an associated value of tolerance %. The number series under the ± 10% column is known as the E12 Series because there are 12 standard values within a decade range. ± 2% and ± 5% utilize the E24 Series, ± 1% uses E96 and ± .1%, ± .25% and ± .5% use E192. Successive values within a decade series are related (approximately) by a factor of $\sqrt[12]{10}$ for the E12 Series, $\sqrt[24]{10}$ for the E24 Series, $\sqrt[96]{10}$ for the E96 Series and $\sqrt[192]{10}$ for the E192 Series.

Use of standard values is encouraged because stocking programs are designed around them. However, intermediate values can be special ordered where permitted. Consult factory.

±.1%, ±.25% ±.5%	±1%	±.1%, ±.25% ±.5%	±1%	±.1%, ±.25% ±.5%	±1%	±.1%, ±.25% ±.5%	±1%	±.1%, ±.25% ±.5%	±1%	±.1%, ±.25% ±.5%	±1%	±2% ±5%	±10%
10.0	10.0	14.7	14.7	21.5	21.5	31.6	31.6	46.4	46.4	68.1	68.1	10	10
10.1		14.9		21.8		32.0		47.0		69.0		11	—
10.2	10.2	15.0	15.0	22.1	22.1	32.4	32.4	47.5	47.5	69.8	69.8	12	12
10.4		15.2		22.3		32.8		48.1		70.6		13	—
10.5	10.5	15.4	15.4	22.6	22.6	33.2	33.2	48.7	48.7	71.5	71.5	15	15
10.6		15.6		22.9		33.6		49.3		72.3		16	—
10.7	10.7	15.8	15.8	23.2	23.2	34.0	34.0	49.9	49.9	73.2	73.2	18	18
10.9		16.0		23.4		34.4		50.5		74.1		20	—
11.0	11.0	16.2	16.2	23.7	23.7	34.8	34.8	51.1	51.1	75.0	75.0	22	22
11.1		16.4		24.0		35.2		51.7		75.9		24	—
11.3	11.3	16.5	16.5	24.3	24.3	35.7	35.7	52.3	52.3	76.8	76.8	27	27
11.4		16.7		24.6		36.1		53.0		77.7		30	—
11.5	11.5	16.9	16.9	24.9	24.9	36.5	36.5	53.6	53.6	78.7	78.7	33	33
11.7		17.2		25.2		37.0		54.2		79.6		36	—
11.8	11.8	17.4	17.4	25.5	25.5	37.4	37.4	54.9	54.9	80.6	80.6	39	39
12.0		17.6		25.8		37.9		55.6		81.6		43	—
12.1	12.1	17.8	17.8	26.1	26.1	38.3	38.3	56.2	56.2	82.5	82.5	47	47
12.3		18.0		26.4		38.8		56.9		83.5		51	—
12.4	12.4	18.2	18.2	26.7	26.7	39.2	39.2	57.6	57.6	84.5	84.5	56	56
12.6		18.4		27.1		39.7		58.3		85.6		62	—
12.7	12.7	18.7	18.7	27.4	27.4	40.2	40.2	59.0	59.0	86.6	86.6	68	68
12.9		18.9		27.7		40.7		59.7		87.6		75	—
13.0	13.0	19.1	19.1	28.0	28.0	41.2	41.2	60.4	60.4	88.7	88.7	82	82
13.2		19.3		28.4		41.7		61.2		89.8		91	—
13.3	13.3	19.6	19.6	28.7	28.7	42.2	42.2	61.9	61.9	90.9	90.9		
13.5		19.8		29.1		42.7		62.6		92.0			
13.7	13.7	20.0	20.0	29.4	29.4	43.2	43.2	63.4	63.4	93.1	93.1		
13.8		20.3		29.8		43.7		64.2		94.2			
14.0	14.0	20.5	20.5	30.1	30.1	44.2	44.2	64.9	64.9	95.3	95.3		
14.2		20.8		30.5		44.8		65.7		96.5			
14.3	14.3	21.0	21.0	30.9	30.9	45.3	45.3	66.5	66.5	97.6	97.6		
14.5		21.3		31.2		45.9		67.3		98.8			

Standard resistance values are obtained from the decade table by multiplying by powers of 10. As an example, 13.3 can represent ohms, 133 ohms, 1.33k, 13.3k, 133k, 1.33 Megohm.