

SMD Size Chart: Resistor, Capacitor, Diode and Transistor Packages

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Imperial (EIA) codes give length and width in hundredths of an inch; metric codes in tenths of a millimeter. The same digits can mean different sizes: imperial 0603 is 1.6 × 0.8 mm, metric 0603 is 0.6 × 0.3 mm. Write both codes, or the full manufacturer part number, on your BOM.

1. Chip resistor and capacitor sizes

Imperial (EIA)	Metric	L × W (mm)	L × W (in)	Resistor power*	Typical MLCC thickness (mm)
01005	0402	0.40 × 0.20	0.016 × 0.008	0.031 W	0.20
0201	0603	0.60 × 0.30	0.024 × 0.012	0.05 W	0.30
0402	1005	1.00 × 0.50	0.039 × 0.020	0.1 W	0.50
0603	1608	1.60 × 0.80	0.063 × 0.031	0.1 W	0.80
0805	2012	2.00 × 1.25	0.079 × 0.049	0.125 W	0.60 / 0.85 / 1.25
1206	3216	3.20 × 1.60	0.126 × 0.063	0.25 W	0.60 to 1.60
1210	3225	3.20 × 2.50	0.126 × 0.098	0.5 W	1.25 to 2.50
1812	4532	4.50 × 3.20	0.177 × 0.126	0.75 W	1.60 to 3.20
2010	5025	5.00 × 2.50	0.197 × 0.098	0.75 W	—
2512	6432	6.40 × 3.20	0.252 × 0.126	1 W	—

*Rated power at 70°C for one standard thick-film series (Panasonic ERJ). Other series, including anti-surge and high-power types, are rated differently, and power derates above 70°C. MLCC thickness depends on capacitance and voltage (TDK general-purpose MLCC catalog). Inch values are converted from millimeters. A dash means the catalog does not list that size.

2. Tantalum chip capacitor case sizes

Case	EIA metric code	L × W × H (mm)	Max height (mm)
A	3216-18	3.2 × 1.6 × 1.6	1.8
B	3528-21	3.5 × 2.8 × 1.9	2.1
C	6032-28	6.0 × 3.2 × 2.5	2.8
D	7343-31	7.3 × 4.3 × 2.8	3.1

Dimensions from the KEMET T489 datasheet. The last two digits of the EIA code are a height class; check the maximum height in the datasheet.

3. SMD diode and transistor packages

Package	Typical use	Body L × W (mm)	Height (mm)	Span with leads (mm)
SOD-323	Small-signal diode	1.6–1.8 × 1.15–1.35	0.8–1.1	2.3–2.7
SOD-123	Diode, Zener	2.55–2.80 × 1.5–1.7	1.0–1.3	3.45–3.75
SOT-23	Small transistor, MOSFET	2.8–3.0 × 1.2–1.4	0.9–1.1	2.1–2.5
SMA	Rectifier, TVS	4.00–4.60 × 2.29–2.92	1.96–2.40	4.80–5.59
SMB	Rectifier, TVS	4.06–4.57 × 3.30–3.94	2.00–2.50	5.00–5.59
SOT-223	Regulator, power transistor	6.3–6.7 × 3.3–3.7	1.5–1.8	6.7–7.3
SMC	High-current rectifier, TVS	6.60–7.11 × 5.59–6.22	2.00–2.50	7.75–8.13
DPAK (TO-252)	Power MOSFET, regulator	6.00–6.20 × 6.45–6.70	2.19–2.39	9.40–10.41

Ranges from Nexperia (SOT-23, SOT-223, SOD-123, SOD-323) and Diodes Incorporated (SMA, SMB, SMC, DPAK) package drawings. Each maker labels dimensions differently; compare the drawing for your exact part.

Typical values for reference only. Always design footprints from the datasheet of the exact part you will buy.

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