

## Your Guide to I/C Packaging



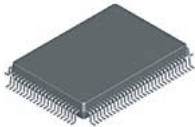
**DIP**

**Dual in-line packaging** has two parallel rows of pins or lead wires. The number of leads may be 8, 14, 16, 20, 24, 40, up to 68. The most common are 14 and 16 pins.



**PLCC**

This **plastic leaded chip carrier** can consist of 18, 20, 28, 32, 44, 52, 68, 84, and up to 100 pin packages. The leads are J shaped and protrude from the package. Pin 1 is located by a dot in the molding and pins are counted counterclockwise. These can be either surface mounted or socketed.



**QFP**

**Quad flat pack** components have gull wing leads on all four sides.



**SOIC**

**Small outline IC** typically comes in 8, 14, 16, 20, 24, and 28 pin packages with gull wing leads. This chip is surface mounted. It is also referred to as **SOP (Small Outline Package)**.



**SOJ**

**Small outline package with J leads** on two sides. The leads are bent back around the chip carrier.



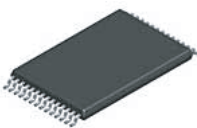
**SOP**

**Small outline package** with two rows of narrowly spaced gull wing leads. (The same as **SOIC**).



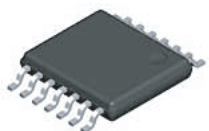
**SSOP**

**Shrink small outline package** with gull wing leads ranging in count from 8 to 64. The SSOP package size is compressed and the lead pitch is tightened to obtain a smaller version of the standard SOIC packages.



**TSOP**

**Thin small outline packages** have a thin, rectangular body with gull wing leads. Lead counts range from 20 to 66. On the Type 1 chip, the leads are on the shorter edges of the part. Type 2 parts have the leads on the longer edges.



**TSSOP**

**Thin shrink small outline package.** This is sometimes called "scaled". These are half the height of SOIC. They are 0.9mm thick. Lead counts range from 8 to 80.