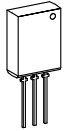


Technical Data

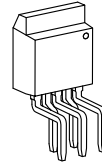
Classification of semiconductor package

SIP Single In-line Package



A package having leads on a single side of the body.

ZIP Zigzag In-line Package



A package having Zig-zag formed leads on a single side of the body.

DIP Dual In-line Package

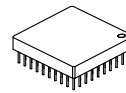


A package having leads in parallel rows on two opposite sides of the body for through-hole insertion.

SDIP Shrink DIP

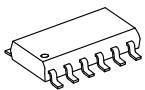
A package which reduced the lead pitch of DIP.

PGA Pin Grid Array



A package having pins on top or bottom face in a matrix layout of at least three rows and three columns.

SOP Small Outline Package



A package having gull-wing-shaped leads on two opposite sides of the body.

TSOP Thin SOP

A package height of SOP exceeds 1.0 mm, and 1.2 mm or less.

SSOP Shrink SOP

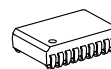
A package which reduced the lead pitch of SOP.

SON Small Outline Non-leaded Package



A package having single-inline terminal pads along two opposite edges of the bottom face. The terminal pads may or may not be exposed on the package sides.

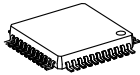
SOJ Small Outline J-leaded Package



A package having J-shaped leads on two opposite sides of the body.

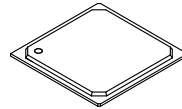
Classification of semiconductor package

QFP Quad Flat Package



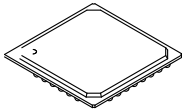
A package having gull-wing-shaped leads on four sides of the body.

LGA Land Grid Array



A package having lands on top or bottom face in a matrix of at least three rows and three columns.

BGA Ball Grid Array



A package having balls or bumps on top or bottom face in a matrix of at three rows and three columns or more.

FBGA (CSP) Fine pitch BGA

A package of BGA having less or equal 0.8mm pitch terminals.

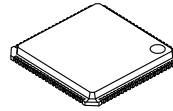
TFBGA Thin FBGA

A package height of FBGA exceeds 1.0 mm, and 1.2 mm or less.

VFPGA Very thin FBGA

A package height of FBGA exceeds 0.8 mm, and 1.0 mm or less.

QFN Quad Flat Non-leaded Package



A package having single-inline terminal pads along four edges of the bottom face. The terminal pads may or may not be exposed on the package sides.

CQFN Ceramic QFN A name in U. S. is LCC/CLCC.

QFN package having ceramic body.

QFJ Quad Flat J-leaded Package

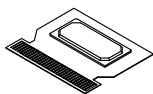


A package having J-shaped leads on four sides of the body.

PQFJ Plastic QFJ A name in U. S. is PLCC.

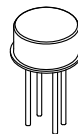
QFJ package having plastic body.

TCP Tape Carrier Package



A semiconductor package that has the TAB connection and is coated by resin.

TO Transistor Outline



CAN type .Metal package

A package that is widely used for transistor, sensors and passive component. And its materials are metal, ceramics and plastics.