LH28F160BV-TL/ BVH-TL

16 M-bit (2 MB x 8/1 MB x 16)
Smart 3 Flash Memories

DESCRIPTION

The LH28F160BV-TL/BVH-TL flash memories with Smart 3 technology are high-density, low-cost, nonvolatile, read/write storage solution for a wide range of applications. The LH28F160BV-TL/BVH-TL can operate at Vcc and V_{PP} = 2.7 V. Their low voltage operation capability realizes longer battery life and suits for cellular phone application. Their boot, parameter and main-blocked architecture, flexible voltage and enhanced cycling capability provide for highly flexible component suitable for portable terminals and personal computers. Their enhanced suspend capabilities provide for an ideal solution for code + data storage applications. For secure code storage applications, such as networking, where code is either directly executed out of flash or downloaded to DRAM, the LH28F160BV-TL/BVH-TL offer two levels of protection : absolute protection with V_{PP} at GND, selective hardware boot block locking. These alternatives give designers ultimate control of their code security needs.

FEATURES

- Smart 3 technology
  - 2.7 to 3.6 V V_{CC}
  - 2.7 to 3.6 V or 12 V V_{PP}
- High performance read access time
  LH28F160BV-TL90/BVH-TL90
  - 90 ns (2.7 to 3.6 V)
  LH28F160BV-TL12/BVH-TL12
  - 120 ns (2.7 to 3.6 V)
- Enhanced automated suspend options
  - Write suspend to read
  - Block erase suspend to word write
  - Block erase suspend to read
- SRAM-compatible write interface
- User-configurable x8 or x16 operation
- Optimized array blocking architecture
  - Two 8 k-byte boot blocks
  - Six 8 k-byte parameter blocks
  - Thirty-one 64 k-byte main blocks
  - Top or bottom boot location
- Enhanced cycling capability
  - 100 000 block erase cycles
- Low power management
  - Deep power-down mode
  - Automatic power saving mode decreases I_{CC} in static mode
- Automated word/byte program and block erase
  - Command user interface
  - Status register
- ETOX™* V nonvolatile flash technology
- Packages
  - 48-pin TSOP Type I (TSOP048-P-1220) Normal bend
  - 60-ball CSP (FBGA060/048-P-0811)

* ETOX is a trademark of Intel Corporation.

COMPARISON TABLE

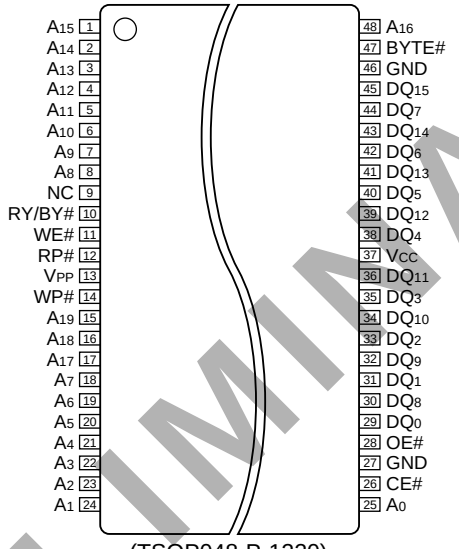
VERSIONS	BIT CONFIGURATION	OPERATING TEMPERATURE
LH28F160BV-TL	2 MB x 8/1 MB x 16	0 to +70°C
LH28F160BVH-TL	2 MB x 8/1 MB x 16	–40 to +85°C
LH28F160BG-TL*	1 MB x 16	0 to +70°C
LH28F160BGH-TL*	1 MB x 16	–25 to +85°C

* Refer to the datasheet of LH28F160BG-TL/BGH-TL.

PIN CONNECTIONS

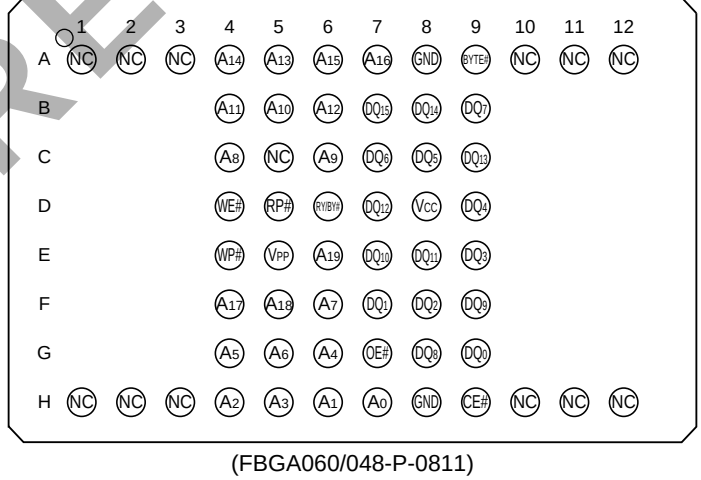
48-PIN TSOP (Type I)

TOP VIEW



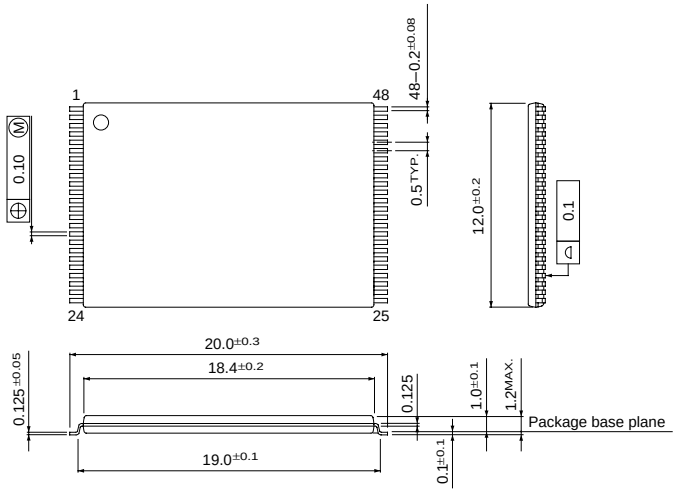
(TSOP048-P-1220)

60-BALL CSP

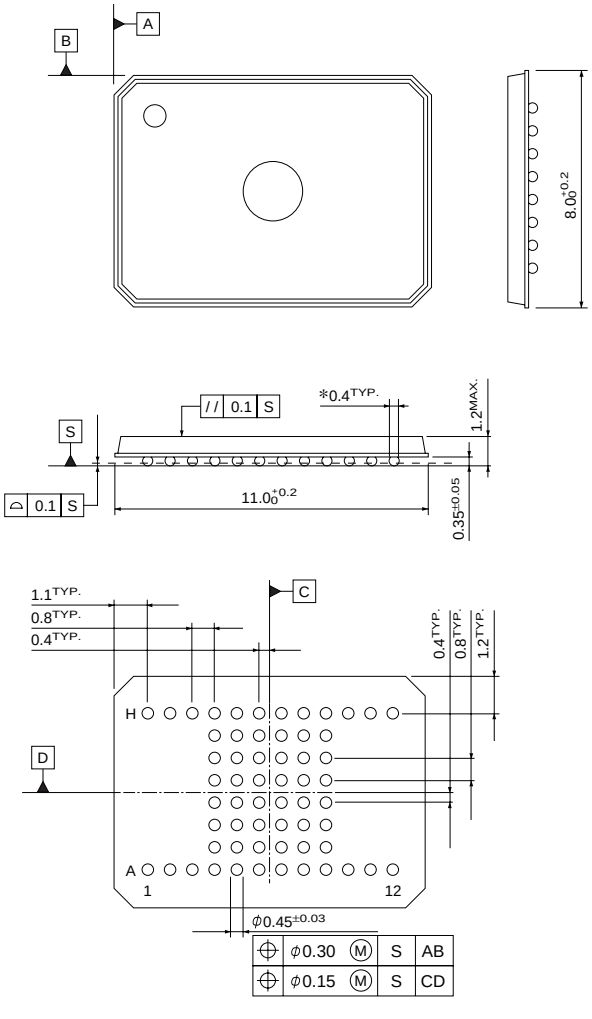


(FBGA060/048-P-0811)

48 TSOP (TSOP048-P-1220)



60 CSP (FBGA060/048-P-0811)



*Land hole diameter for ball mounting