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LGA 2011-0 Server CPU Socket

105142 LGA 2011-0 Server CPU Socket

Approved by Intel and supporting its top-of-the-line Core i7 series processors, the compact LGA 2011-0 CPU socket provides the electrical, thermal and mechanical reliability servers, workstations and high-end PCs need to achieve target processor performance levels

Augmenting Molex's CPU socket solutions and replacing the LGA 1366, the Intel-approved LGA 2011-0 socket (Socket R) offers the electrical, mechanical and thermal reliability enterprise servers, workstations and high-end PCs need to reach target performance levels of Intel's Core* i7 series of 32nm-Sandy Bridge-E microprocessors.

Molex's LGA 2011-0 socket features a fully loaded Interstitial Seating Plane (ISP) design for improved contact reliability by preventing circuit opens and shorts caused by contact deformation during a package overload. The socket uses high strength, copper alloy contacts for robust performance.

The socket terminals are oriented at angles that reduce the risk of cross-contact during processor overloads ('over compression').

The use of high-temperature housing material ensures socket integrity under reflow conditions. Standoffs at the bottom of the socket base help establish minimum socket height after solder reflow.

The LGA 2011-0 socket assembly retains its 3-piece socket, ILM and backplate configuration for improved solder-joint reliability. It uses a larger backplate than the LGA 1366 or LGA 1156 sockets and is not backward compatible for use with any other processors and their ILM assemblies. The LGA 2011-0 socket is used with two IILM designs – a Standard (Square) and a Narrow ILM assembly.

The Standard ILM assembly comprises an ILM-top assembly made up of an ILM frame, a backplate, a hinge lever, load lever with load cam; 4 captive fasteners and a removable (optional) ILM cover. A removable ILM cover prevents damage to socket contacts caused by mishandling of processor during loading and removal (via soldering) of the CPU for either trouble-shooting or repair.

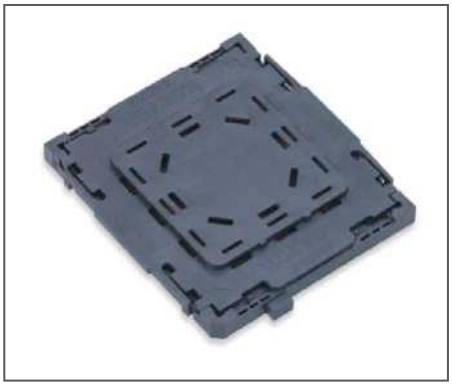
The Standard ILM has a larger (80 by 80mm) keep-out zone than that (56 by 94mm) of the Narrow ILM. Although both assemblies contain the same set of components and are assembled in the same way, the position of their threaded heatsink mounting studs and the design of their ILM levers are noticeably different.

Molex offers 15 or 30 micron gold (Au)-plated contact sockets which come with pick-and-place covers for easy placement in automated board assembly. All sockets are shipped in JEDEC-type hard trays.

For additional information visit our website at: www.molex.com/link/lga2011.html.



LGA 2011-0 CPU Socket with Standard Independent Loading Mechanism (ILM) and (optional) ILM cover



LGA 2011-0 socket with pick-and-place cover

Features and Benefits

Satisfies requirements of "Intel Core i7 Processor Family for the LGA2011-0 Socket Thermal / Mechanical Specification and Design Guide	Supports 130W TDP and target performance requirements of Intel's Core i7-3930K, Core i7-3820 and Core i7-3960K Extreme Edition processors
Fully loaded Interstitial Seating Plane (ISP) socket design	Prevents contact shorting or opens cause by processor overload
Square or Narrow Independent Loading Mechanism (ILM) assembly options	Suit different PCB designs with varying ILM outline dimensions
Dual actuation-levers [U-shaped hinge lever and V-shaped (CPU) load lever with load cam]	Ensure planarity of seated processor for reliable electrical contact
Triangle-pin-1 identification on housing, load plate, alignment walls and orientation posts	For true positioning and snug fit of CPU on socket before loading

* Intel, LGA 2011-0, LGA 1366, Sandy Bridge-E, Socket R, ILM, Core™ i-series (Core i7) and relevant names are either trademarks or registered trademarks of Intel Corporation

† Thermal Design Power (TDP): The target power level the thermal solution is designed to dissipate. TDP is not the maximum power that the processor can dissipate.

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Specifications

Reference Information
Packaging:
JEDEC Hard Tray (Sockets only)
UL File No.: E29179
CSA File No.: NA
Use With:
Intel*'s Core i7-3930K, Core i7-3820 and Core i7-3960K Extreme Edition processors
Designed In: mm
RoHS: Yes
Halogen Free: Yes
Glow Wire Compliant: No

Electrical
Current (max.): 0.5A
Voltage (max): 5.0V
Contact Resistance (EOL):
22 milliohms max. socket average
Dielectric Withstanding Voltage:
360V (RMS)
Insulation Resistance:
800 Megaohms min.

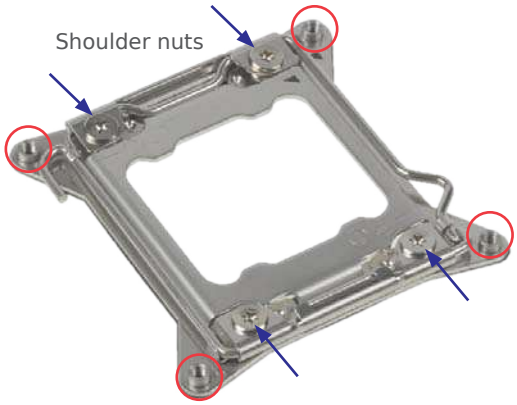
Mechanical
Contact Insertion Force:
Zero Insertion Force (ZIF)
Durability (min.): 30 cycles

Physical
ILM Active and Hinge Lever:
Stainless Steel
ILM Frame:
Stainless Steel with Nickel (Ni) Plating
ILM Base (or Load) Plate:
Stainless Steel
ILM Frame Insulator:
Polypropylene Sheet
ILM Cover (Optional): PC/ABS
Pan and Shoulder Screws:
Nickel-plated Low Carbon Steel
Housing and Cap:
High Temperature Thermoplastic, Black
Contact:
High Strength Copper (Cu) Alloy
Flammability: UL-94V-0
Plating (Socket):
Contact Area — 0.38 or 0.76µm (15 or 30µ") Gold (Au) Plating
Solder Ball Area — Lead-free solder ball SnAg3.0Cu0.5
Contact and Paddle Area — 1.27µm (50µ") min. Nickel
Recommended PCB Thickness:
1.60mm (.062")/2.54mm (.100")
Operating Temperature:
-40 to +100°C

Additional Product Features

4 shoulder nuts (blue arrows) of both the Standard and Narrow ILM are secured into corresponding 4 male threaded studs (black arrows) of the backplate

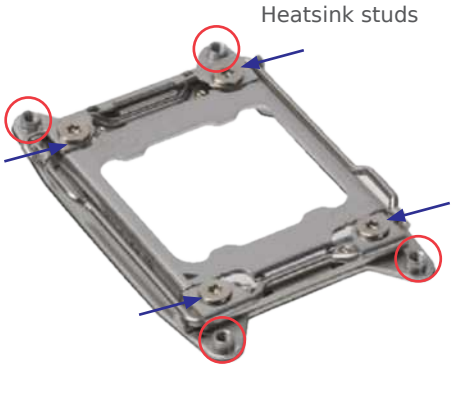
4 heatsink studs (red circles) are used for mounting of heatsink above socket assembly



LGA 2011-0 Standard ILM Assembly in 'closed' position (105142-8000)



LGA 2011-0 Backplate Assembly (105142-7000)



LGA 2011-0 Narrow ILM Assembly in 'closed' position (105142-9000)

Mounting features of the LGA 2011 Socket ILM frame and baseplate

'Closed' lock sign. Users should always close the ILM from this side first





'Open' lock sign. Users should always open the ILM from this side first

'Open' and 'closed' indicators on the LGA 2011-0 Socket ILM frame

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Applications

Data Applications
- Servers
- Workstations

Other Markets
- High-end PCs



Workstation



Servers

Ordering Information

Order No.	Plating	Product Attribute
105142-0132	15µ" Gold (Au)	1.016mm (.040") Pitch LGA Socket, 0.38µm (15µ") Gold (Au) Plating, 2011 Circuits, Lead-free
105142-0133	30µ" Gold (Au)	1.016mm (.040") Pitch LGA Socket, 0.76µm (30µ") Gold (Au) Plating, 2011 Circuits, Lead-free
105142-7000	Stainless Steel and Steel-with-Nickel (Ni)	LGA 2011-0 Back Plate Assembly
105142-8000		LGA 2011-0 Standard ILM Assembly
105142-8100		LGA 2011-0 Standard ILM Assembly with ILM Cover
105142-9000		LGA 2011-0 Narrow ILM Assembly
105142-9100		LGA 2011-0 Narrow ILM Assembly with ILM Cover

www.molex.com/link/lga2011.html

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