

Quality Components make Quality Motherboards



GA-X38-DQ6

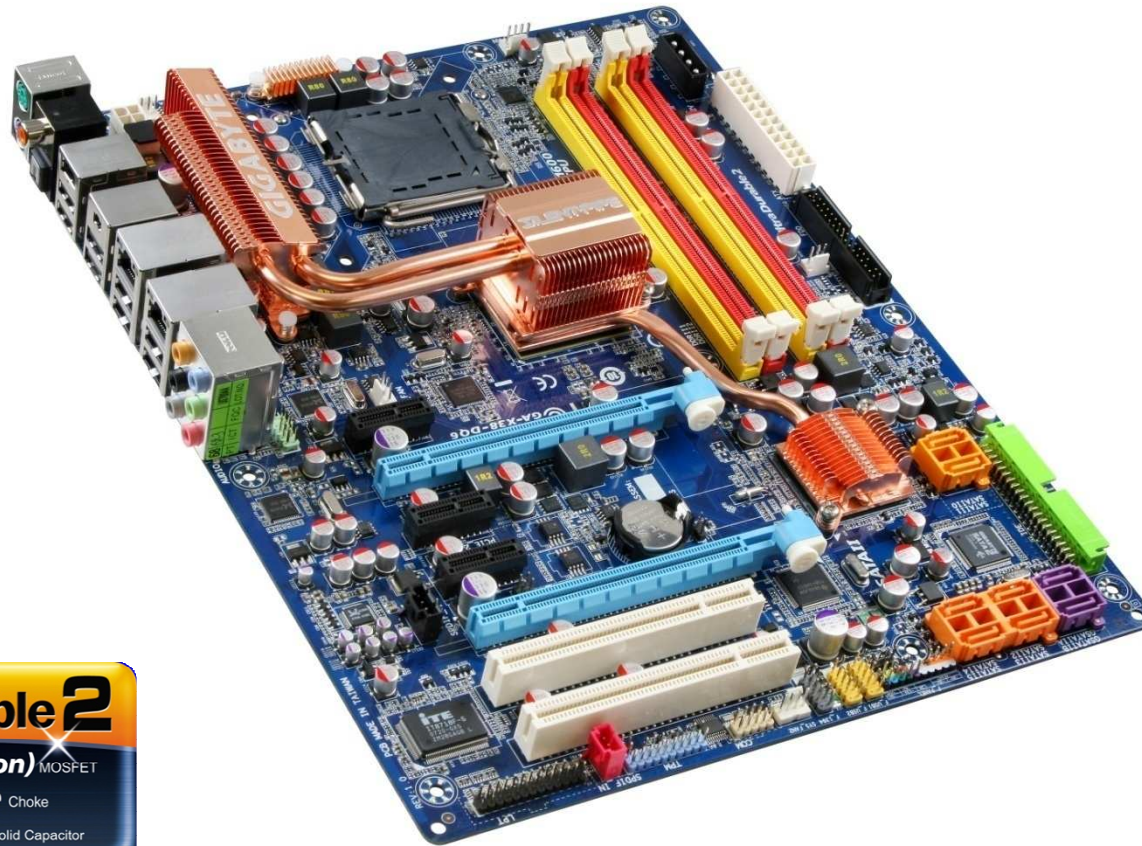
Ultra Durable 2 Motherboard
Supports Intel® Core™2 Multi-Core Processors

What GA-X38-DQ6 Brings

- Support for *Intel® 45nm Core 2™ multi-core processors.*
- *1600 MHz FSB (Front Side Bus) support.*
- *DDR2 1066 memory, featuring faster speeds and higher data bandwidth.*
- *Ultra Durable 2 motherboard features High Quality CPU Power Design with Ferrite Core Chokes, Lower RDS (on) MOSFETs and Lower ESR Solid Capacitors.*
- *Japanese manufactured SMD (Surface Mount Device) Solid Capacitors for enhanced system durability.*
- *Ultimate graphics performance with dual PCI-E 2.0 x16 interface.*
- *Features Dual Gigabit Ethernet LAN with Teaming functionality.*
- *All New Copper SILENT-PIPE that includes heat sinks covering MOSFET modules, the North Bridge and the South Bridge.*
- *ALC 889A audio codec with DTS Connect, featuring 106 dB Signal to Noise ratio and support for both Blu-ray and HD DVD formats.*

The Extreme Performance Platform

GA-X38-DQ6



Unique Technology from GIGABYTE

Ultra Durable²

- Lower $R_{ds(on)}$ MOSFET
- Ferrite Core Choke
- Lower ESR Solid Capacitor

Supports

Supports

45nm Processors Optimized

FSB 1600 Support

PCI-E 2.0

CROSS FIRE

Dual LAN

Blu-ray/HD DVD Full Rate Lossless Audio

dts Connect

GA-X38-DQ6 motherboard

Ultra Durable 2

High quality CPU power module with Ferrite Core Chokes, Lower RDS (on) MOSFETs and Lower ESR Solid Capacitors

Scalable Performance with DDR2 1066 Memory

Experience maximum system performance with DDR2 1066 memory, featuring faster speeds and higher data bandwidth

Future CPU Headroom

Supports Intel® Core 2™ Multi-Core and 45nm processors with 1600MHz FSB

PCI-E 2.0 Interface

Equipped with two PCI-E 2.0 x16 interfaces, doubling the bus bandwidth to 5 Gbit/s

All New Copper SILENT-PIPE

All New Copper SILENT-PIPE thermal solution covering chipset and CPU power MOSFETs, dramatically reducing CPU zone temperature

Multi-layer BIOS Protection

Quad BIOS featuring DualBIOS™ + duplicate BIOS on Hard-disk and Driver CD

Best Audio Experience

ALC889A codec with DTS Connect, featuring 106 dB Signal to Noise ratio, enabling a wide range of home entertainment, gaming, and multimedia applications

Four Sets of External SATA Ports

Quad eSATA based on the Serial ATA 3Gb/s storage specification

GA-X38-DQ6 Selling Points

1. Supports Intel® Core 2™ multi-core and upcoming 45nm processors
2. Support for 1600 MHz FSB.
3. Dual Channel DDR2 1066 memory support for outstanding system performance.
4. High quality CPU power module with Ferrite Core Chokes, Lower RDS (on) MOSFETs and Lower ESR Solid Capacitors.
5. Re-engineered Thermal Design featuring All Copper Silent-Pipe and Crazy Cool.
6. Japanese manufactured SMD All Solid Capacitor motherboard design.
7. Supports AMD CrossFire™ with Dual PCI-E 2.0 x16 graphics for extreme gaming performance.
8. Features SATA 3Gb/s with Quad eSATA 2 interface .
8. ALC889A with DTS Connect enables high quality Full Rate Lossless Audio and support for both Blu-ray and HD DVD.
9. Quad BIOS for an extended level of protection.
10. Quad-Triple Phase Power Design for ultimate system stability.
11. Dual Gigabit Ethernet LAN with Teaming functionality.
12. Certified for Microsoft VISTA™ systems.

Designed with Top Quality Highly Efficient Components



***Quality Components
make
Quality Motherboards***

What is Ultra Durable 2 Power Design



1 Ultra Cooling

Lower Rds(on) MOSFET Design

Lower Rds(on) MOSFETs are specially designed to produce lower switching resistance for faster electric current charging and discharging.

- Optimized gate charge to minimize switching losses.
- Lower temperature, smaller size, better thermal characteristics.

Temperature

Component	Temperature Reduction
Lower Rds(on) MOSFET	16% Lower
Standard MOSFET	-

2 Low Power Loss

Ferrite Core Choke Design

Ferrite core chokes are comprised of a compound of iron oxide and other metal elements whose properties hold energy much longer than common iron core chokes at high frequency.

- Reduced core energy loss.
- Lower EMI interference.
- Resists rust better than standard iron core chokes.

Core Energy Loss

Component	Core Energy Loss Reduction
Ferrite Core	25% Lower
Standard Iron Core	-

3 Longer Life

All Lower ESR Solid Capacitor Design

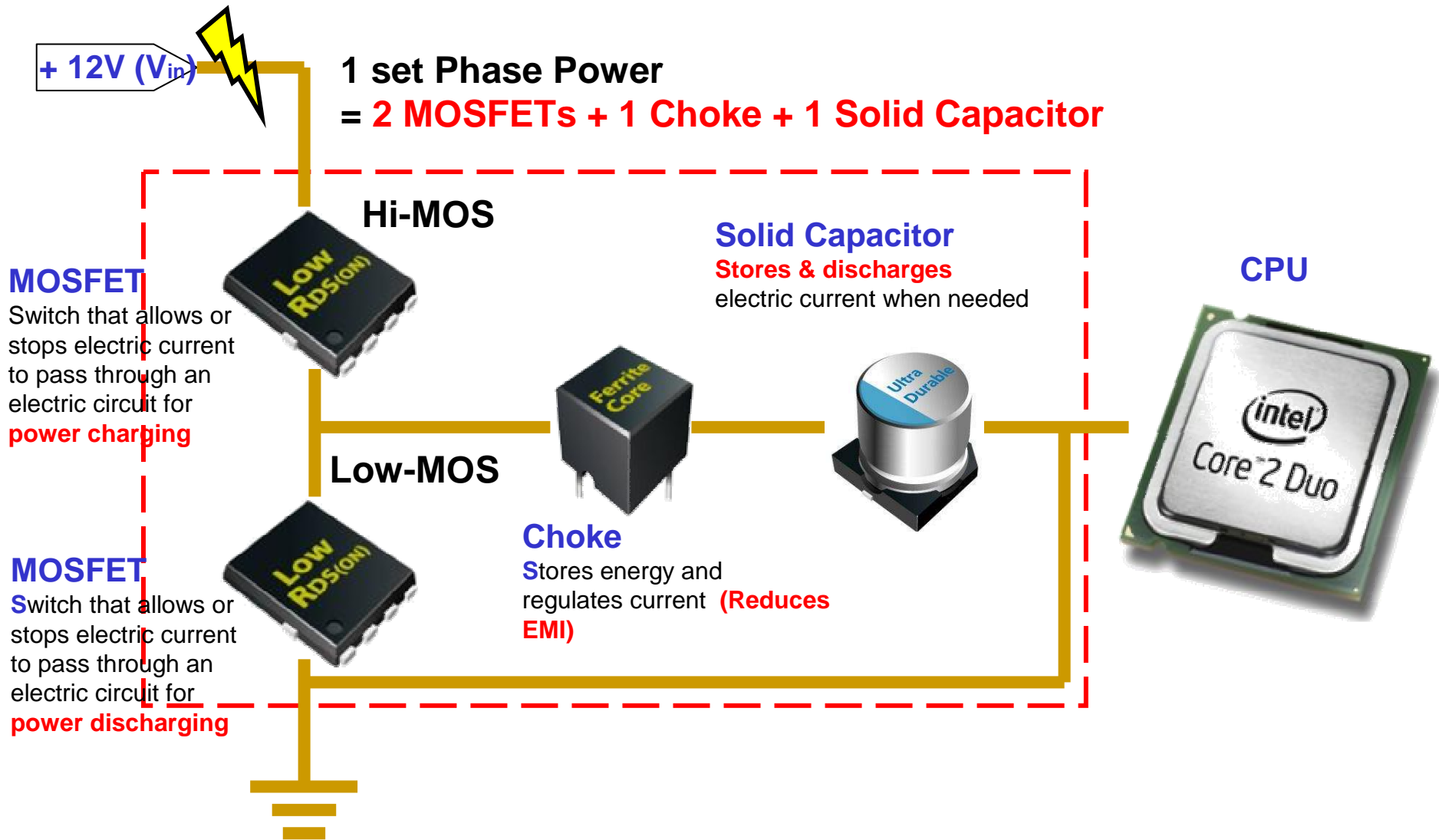
Solid capacitors contain a solid organic polymer, while electrolytic capacitors use a common liquid electrolyte.

- Made by leading Japanese manufacturers.
- Longer lifespan for systems in daily operation while boosting system stability under extreme conditions.
- Better electronic conductivity for excellent system performance.

Operation Lifetime

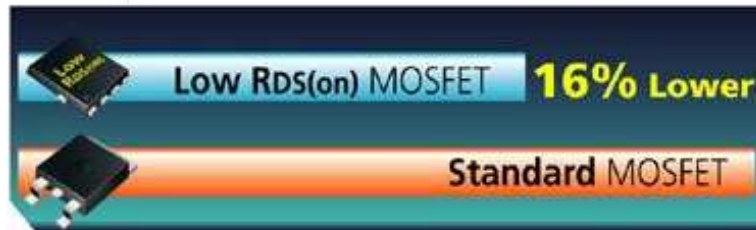
Component	Operation Lifetime Increase
All Lower ESR Solid Capacitor with Ultra Durable 2	up to 18x
Solid Capacitor	6x
Electrolytic Capacitor	-

How does the Ultra Durable 2 Power Design Work?

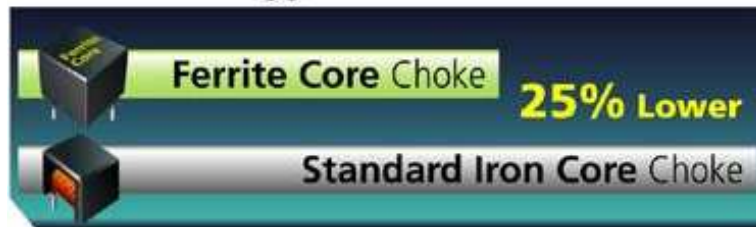


Ultra Durable 2 Benefits

Temperature



Core Energy Loss



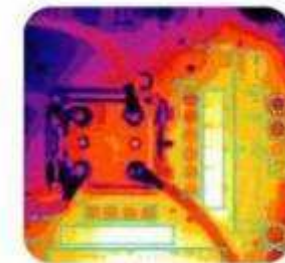
Operation Lifetime



Around the CPU ZONE



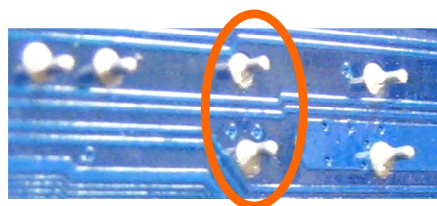
Ultra Durable 2
(without heat pipe)



Standard
(without heat pipe)

Ultra Durable 2 delivers enhanced reliability, cooler working temperature, longer durability and high overclocking capabilities.

Japanese SMD (Surface Mount Device) Solid Capacitors



*Traditional construction with DIP
(Dual in-line package)*



SMD construction with SMT
(Surface Mount Technology)

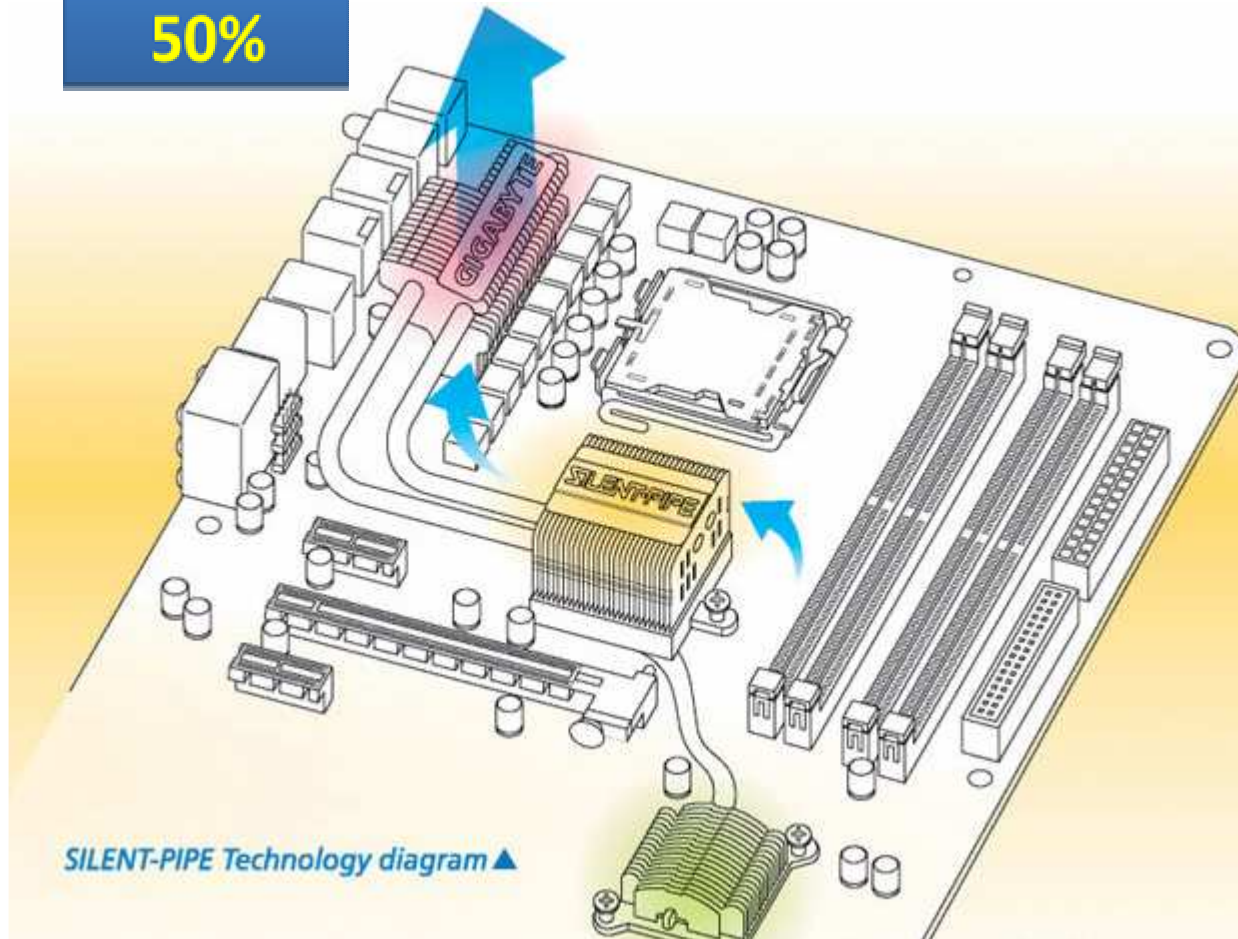
- Higher circuit efficiency
 - Excellent thermal conductivity
 - No pin sticking out of PCB
- ➡ Excellent electrical performance
 - ➡ Low heat
 - ➡ Short prevention

All Copper Silent-Pipe and Crazy Cool

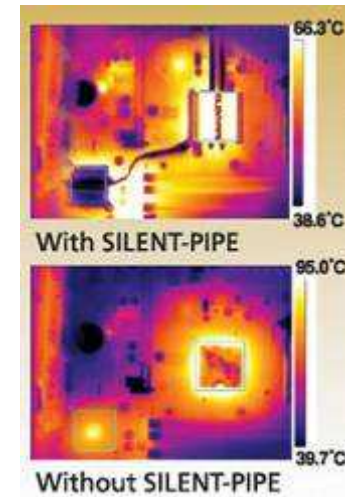
Cooling Performance

Enhances

50%



Cooling Test from L/A



CRAZY COOL



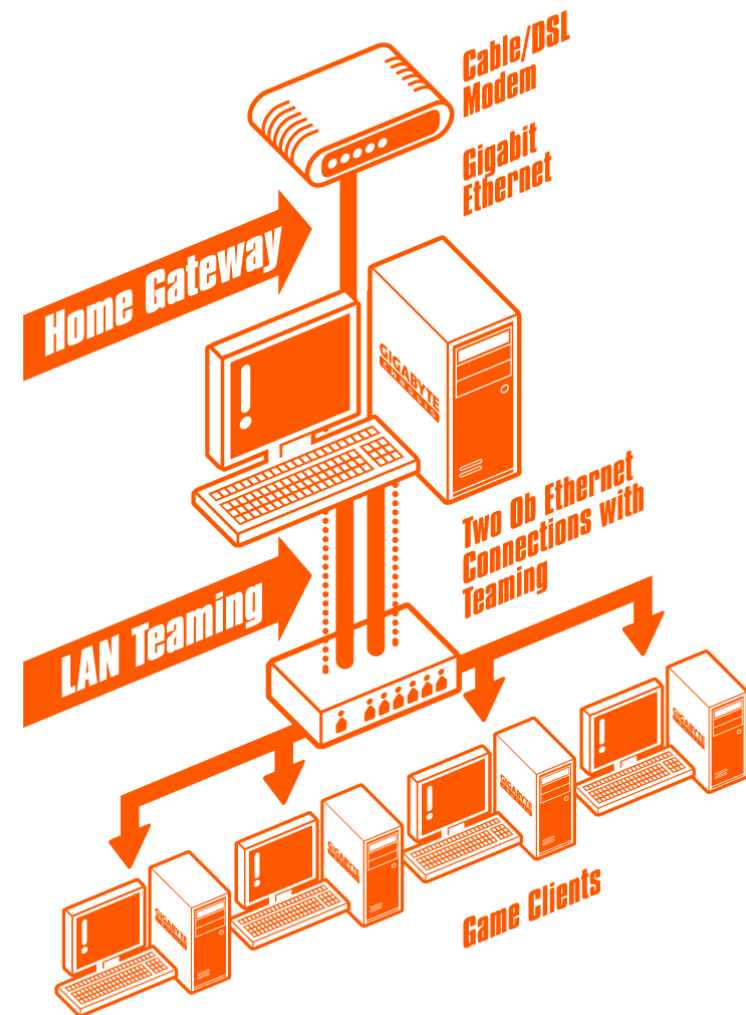
Dual Gigabit LAN with Teaming

Doubles the bandwidth

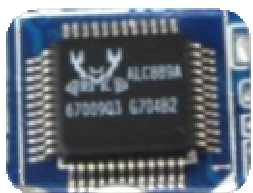
The GA-X38-DQ6 with Teaming functionality enabled allows the 2 single connections to act as a single connection for twice the bandwidth, improving overall throughput with lower CPU utilization.

Network fault tolerance

Prevents network downtime by transferring the workload from a failed port to a working port.



ALC889A Codec + DTS Connect Excellent Audio Performance



High-performance DAC (Digital-Analog Converter) with 106 dB Signal-to-Noise ratio playback quality, designed especially for Windows Vista Premium PCs



DTS Connect functional for the ultimate PC entertainment experience, delivering the finest cinematic **surround sound effects**



Provides support for **7.1 sound playback**, plus 2 channels of Independent stereo sound output (multiple streaming) through the Front panel stereo outputs.

Blu-ray/HD DVD Full Rate Audio Support



Enables high quality Full Rate Lossless Audio for Content Protected media



**Exhilarating
Home Theater
Entertainment Experience**

Easy Tune™ 5 Pro

- New Easy-to-Use Design
- Turbo Boost - Performance Enhancement for P35 series



- Graphics Overclocking - Supports all VGA Branded Graphics Cards (Nvidia or ATI GPU)

GA-X38-DQ6 Specifications

Processor

LGA775 Intel® Core™ 2 Extreme/ Core™ 2 Quad/ Core™ 2

Duo processors*

Supports 1600/1333/1066/800 MHz FSB

Chipset

Northbridge: Intel® X38 Express Chipset

Southbridge: Intel® ICH9R

T.I IEEE 1394 Controller

2 Realtek Lan Controller

8 Channels ALC889A Audio controller

Memory

Supports DDR2 1066/800/667 MHz memory

Dual Channel architecture supports up to 8GB by 4 DIMM slots

Expansion Slots

2 x PCI Express x16 slots (Support PCI Express 2.0)

3 x PCI Express x1 slots

2 x PCI slots

Form Factor

ATX form factor, 305 x 244mm

Internal I/O Connectors

8 x Serial ATA 3Gb/s connectors

1 x UDMA ATA 100/66/33 connector

1 x IDE connector

1 x FDD connector

1 x IEEE 1394a connector

2 x USB 2.0/1.1 connectors (supports 4 ports)

1 x audio pin header (supports 8-Channel)

1 x TPM pin header

1 x S/PDIF In header

1 x S/PDIF Out header

1 x LPT port

Rear I/O Connectors

8 x USB 2.0/1.1 ports

1 x coaxial S/PDIF Out connector

1 x optical S/PDIF Out connector

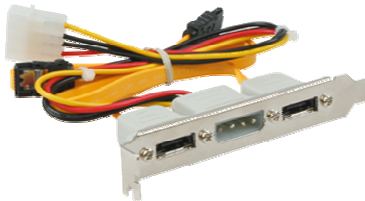
2 x IEEE 1394a ports

2 x RJ45 port

6 x audio jacks

PS/2 Keyboard/Mouse

Accessories of GA-X38-DQ6



eSATA2 Cable x 2



SATA 3Gb/s Cable (90 degree) x 2



SATA 3Gb/s Cable (180 degree) x 2



IDE Cable x 1 / FDD X1

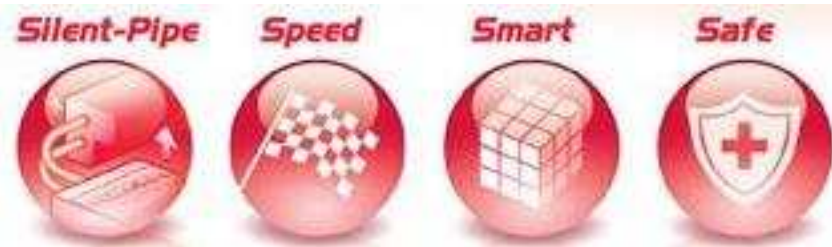
GA-X38-DQ6

Featuring both 6 Quad & 4 S

6-QUAD



S-series



6-Quad Features

Quad BIOS



- ◆ Failure-proof BIOS protection for ultimate system stability
- ◆ Featuring 2 physical BIOS + 2 Virtual-BIOS (Duplicates on Hard-Disk and Driver CD)



Quad Triple Phase



- ◆ Revolutionary 12 phase power circuit design
- ◆ Provides higher operation efficiency with lower heat generation

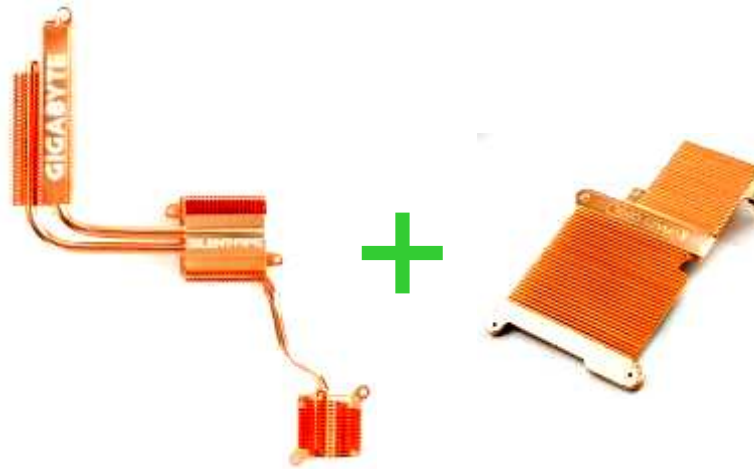


6-Quad Features

Quad Cooling



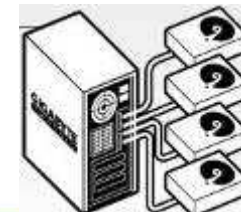
- ◆ Ultimate solution with 0dB soundless environment
- ◆ Enhanced heat dissipation of critical components



Quad eSATA 2



- ◆ Enhanced data storage scalability and data-transfer performance
- ◆ Easily backup and retrieve data On-the Go with up to 4 external drives

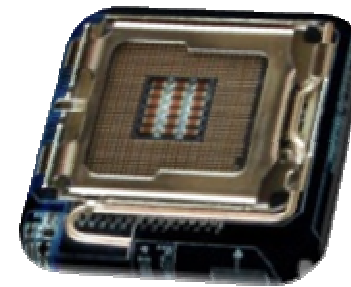


6-Quad Features

Quad Core
Optimized



- ◆ Ready for upcoming generation of Intel 45nm processors
- ◆ delivers the highest levels of performance for multi-tasking applications



Quad DDR2
Slots



- ◆ Provides flexible memory combination support
- ◆ Boost system performance with up to 8 GB of total system memory



S Features- SAFE



Excellent hardware design and unique software strengthen the stability and reliability of your PC!



- **BIOS Settings Recovery**

Recoverable safe and frequently used CMOS setting



- **HDD S.M.A.R.T.**

Hard drive “Self Monitoring Analysis and Reporting Technology” support



- **C.O.M. (Corporate Online Manager)**

System administration utility for local area network



- **Xpress Recovery 2**

Quick system image backup and restore



- **PC Health Monitor**

System health monitor via bios and EasyTune utility

S Features- SMART



Innovative proprietary software features makes BIOS and driver management a breeze!



- **Download Center**
Smart driver selection and download from Gigabyte's website



- **Xpress Install**
Complete drivers installation on one simple click



- **Smart LAN**
BIOS built-in program to check LAN cable connection status



- **@BIOS / Q-Flash**
Automatic BIOS update via internet / BIOS built-in flash utility



- **Boot Menu**
Select boot device without entering bios setup



- **Smart Fan**
Make your system cooler and quieter



S Features- SPEED



Outstanding overclocking features to maximize system performance !



Overclocking

Wide range of frequency tuning for CPU/ MEMORY/
PCI Express/PCI bus speed

Overvoltage

Flexible voltage setting for CPU/ memory/
PCI-E/Chipset to enhance overclocking ability