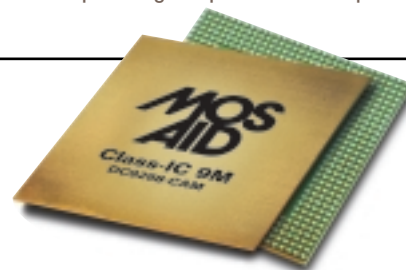


# Class-IC DC9288

## Class-IC™ DC9288 High-Performance Ternary CAM

MOSAID Class-IC DC9288 is a fully parallel, 9Mbit per-bit ternary Content Addressable Memory (CAM) capable of storing 1, 0 and “don’t care” bits. Class-IC supports 128K entries of 72 bit words, 64K entries of 144 bit words or 32K entries of 288 bit words. Class-IC can perform up to 100 million searches per second. Depth cascading of up to 16 devices allows tables of up to 2 million 72 bit entries. Class-IC supports advanced power-saving techniques to significantly decrease the per-megabit power consumption when compared to previous generation CAMs.

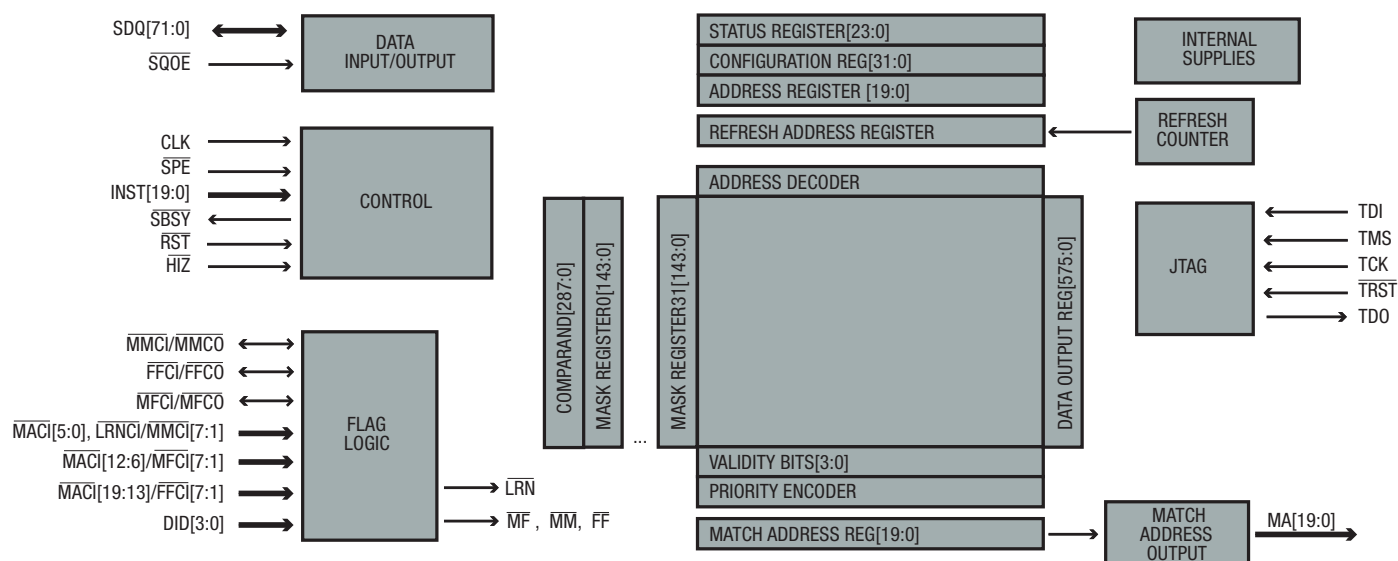


Class-IC uses a dynamic memory-based CAM cell to achieve high density and to efficiently store “don’t care” bits. The inherent density advantage provided by DRAM technology allows the Class-IC family to deliver larger and more cost-effective CAMs.

New requirements including flow analysis, policy-based routing and end-to-end QoS/CoS are rapidly increasing the variety and quantity of lookups required. High-performance ternary CAMs offer the performance and flexibility needed to address the multiple lookups per packet required for efficient packet processing.

Feature	Benefit
Up to 100 MHz 9Mbit per-bit ternary CAM	High-performance search engine for advanced networking applications
Advanced power saving techniques	Significantly reduced per-megabit power consumption
Multiple match output	Successive output of matching entries in order of priority
Automatic aging	Purging of stale entries to minimize table maintenance
Automatic learning	Conditional write of new entries to the next free address
32 global mask registers	Ultimate flexibility for multiple search scenarios, data writes and automatic learns
Glue-less depth cascading of up to 16 devices	Transparently build table sizes of up to 2 million 72 bit entries with no performance degradation
Status bits	Extra bits available for user-defined functionality such as array partitioning, parity, etc.
Orthogonal instruction set	Ease of implementation

**Figure 1: BLOCK DIAGRAM**



# MOSAID

## Class-IC DC9288

[mosaid.com/Class-IC](http://mosaid.com/Class-IC)

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## Key Features

- High-performance 9Mbit ternary CAM
- Advanced power saving techniques
- Up to 100 million searches per second
  - 70 ns initial match time
  - 10 ns pipelined match time
- Bit-level ternary data storage (0, 1, "don't care")
- Configurable CAM word size
  - 128K entries of 72 bit words
  - 64K entries of 144 bit words
  - 32K entries of 288 bit words
- Automatic learning
- Pin optimized, pipelined, synchronous interface
  - 72 bit bi-directional data interface with Double Data Rate (DDR) signaling
  - 20 bit instruction interface
  - 20 bit match address output
  - Direct access output to Match Address pins for associated data SRAM control
- Aging support
- Status bits for user-defined functionality
- Transparent & glue-less depth expansion
- IPv4, IPv6 and Flow ID compatible word sizes
- Orthogonal instruction set
- 32 global data mask registers (16 global mask registers for 288 bit word width)
- Multiple match output
  - Multiple hit indication on search result
    - Returns highest priority match
    - Optional automatic burst output of multiple matches
- JTAG boundary scan
- 432-pin BGA
  - 1.27mm ball pitch for reliable assembly
- LVTTTL I/O
- 1.8V core voltage
- 2.5/3.3V I/O voltage

## MOSAID Semiconductor

MOSAID Semiconductor provides high-performance networking products for the data communication market. MOSAID combines strength in system architecture, networking, and merged memory and logic design to develop high-functionality classification ICs for high-bandwidth networking applications.

For more information on how MOSAID Semiconductor can deliver high-performance solutions for your next networking product, visit: [mosaidsemiconductor.com](http://mosaidsemiconductor.com).