



**THE DATASHEET OF  
PD64012GH**





# PD64012GH

## 12-PORT HPoE PSE MANAGER

### DESCRIPTION

PD64012GH is a twelve-port, mixed-signal, high-voltage High Power over Ethernet PSE Manager. The IC allows the detection of IEEE 802.3af-2003 powered devices, ensuring safe power feeding and removal over Ethernet ports. It also supports pre-standard IEEE802.3at devices consuming up to 59.5W. With full digital control via a serial communication interface and a minimum of external components, the IC integrates in multi-port and highly populated Ethernet switches.

The PD64012GH has two possible working configurations: a low-cost implementation, supporting up to 571mA and a fully IEEE802.3at-ready one. Both maintain the PD64012G Enhanced mode features, for extended functions and added flexibility with the presence of the PD63000G MCU.



### FEATURES

### BENEFITS

#### IEEE 802.3af-2003 and IEEE802.3at-ready

- Compliant with standard and pre-standard IEEE 802.3af PD's and IEEE802.3at PD's
- 12-ports standalone PoE control for IEEE802.3af and PD's of up to 25W
- 6-ports PoE control for IEEE802.3at PD's
- Power classification with bypass option
- AC disconnect
- DC disconnect with DC modulation
- Supports RFC3621
- Freedom to power all PoE PD's including Cisco's inline power
- Highest integration on the market, enabling the lowest real-estate occupation
- Enables building IEEE802.3at-ready solutions or low-cost 25W solutions
- Reliable and simple AC implementation
- Supports low power devices
- Enables integration in Managed Switches

#### ARCHITECTURE

- I<sup>2</sup>C or UART host interface
- 7-bit I<sup>2</sup>C address selectability
- Opto-coupler compatible communication lines
- Up to 96 ports operating autonomously
- Backwards compatible with all PD64008-based message based user interface
- Up to 1536 ports on a switch
- Can be used with PD64004A

#### TECHNOLOGY

- Best-in-industry integration
- Single operating voltage source (44 to 57V)
- 80V SmartMOS8 technology
- 20°C to +70°C operating ambient temperature
- LQFP-64 package, ROHS compliant
- Minimum per port external components
- No need for external DC/DC converter
- Power, high-voltage analog and high-density digital logic functions
- Fit for commercial applications

#### SYSTEM ENHANCEMENT

- Per-IC soft start mechanism
- System-wide inrush protection
- Internal voltages monitoring and auto reset mechanism (Power-On Reset)
- Over-voltage and under-voltage protection/lock-out
- IEEE802.3at Layer 2 classification support
- Dynamic Power Management
- Emergency Power Management
- Support for 4-pairs High power architecture
- Maskeable Interrupt
- Programmable port matrix
- LED streaming
- Temperature sense/monitoring
- Minimal power supply stress and EMI noises
- Power management based on power allocation and priority map, on class value or on both, provides full flexibility and optimal power supply usage
- Prioritization of ports in case of power reduction
- Used for power supply failure conditions
- Capable of powering of up to 59W over 4-pairs
- Logical to physical port map
- User can receive interrupts on status or have automatic LED driving
- Enables system monitoring
- Per port thermal protection, including PCB protection

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