

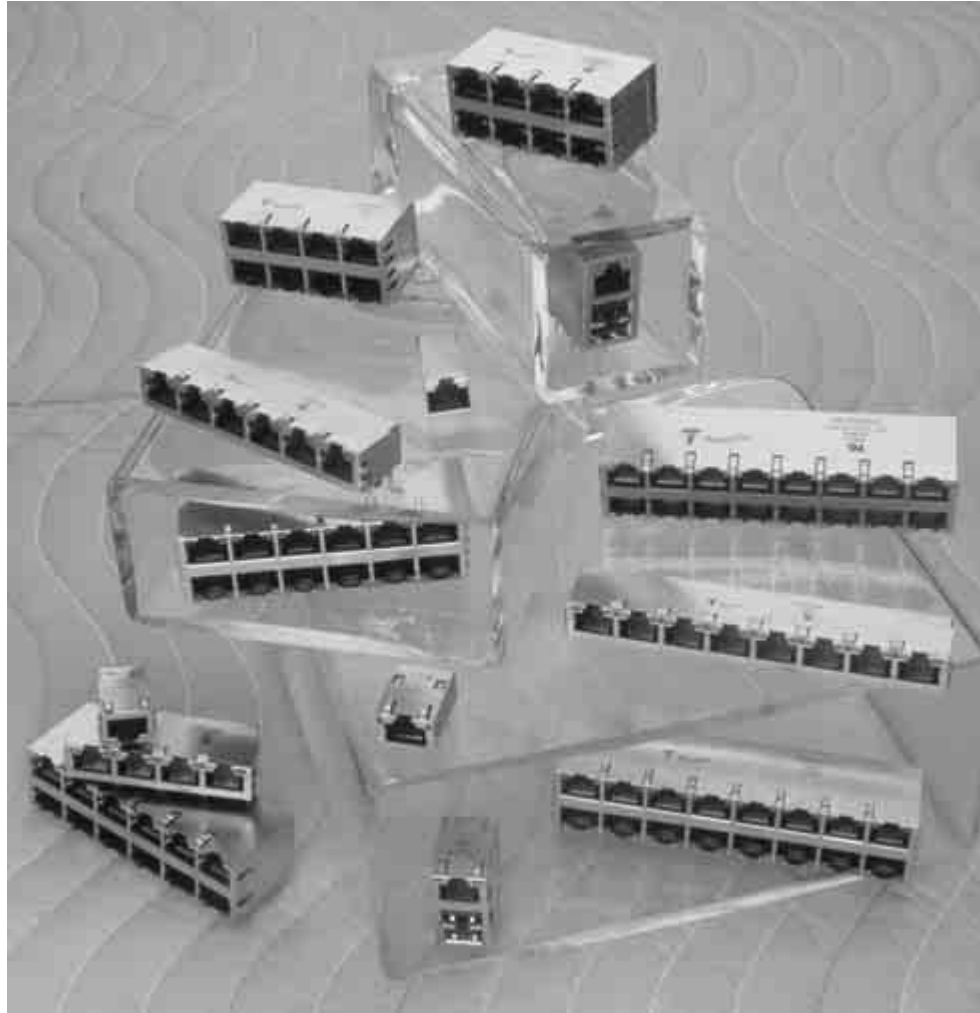
## MAG45 Modular Jacks with Integrated Magnetics

### Product Features

- PCB space savings
- Improved reliability and EMI performance over discrete magnetics
- Micro-welding of mag wire to PCB versus soldering
- Meets or exceeds FCC Part 68, IEEE 802.3, and ANSI X3.263 requirements
- Supports all appropriate and available PHY Chips and applications
- Extended Temp -40C to +85C available

### Product Qualification

- 501 and 108 Qualification Test and Product Specification Reports available
- UL/CSA Recognized component
- For assistance in part selection, please refer to the Tyco Electronics E-Catalog
- Your Tyco Electronics Sales Representative or one of the Product Information Centers listed below are also available to assist



The MAG45 product line offers a broad range of available RJ45 modular jacks with integrated magnetics for 10/100 Base-T, Gigabit and PoE Enabled applications. Multiple configurations are available to include single port, tab up or tab down; single port USB/RJ45; single port low profile; ganged multiport, 1xN; and stacked multiport,

2xN. All available with or without LEDs. There are multiple LED combinations and color options available.

Available soon RJ45 with Integrated Magnetics/PoE controller and MRJ21 product.

Available in Spring 2005 Pb Free/RoHS Compliant MAG45 product.

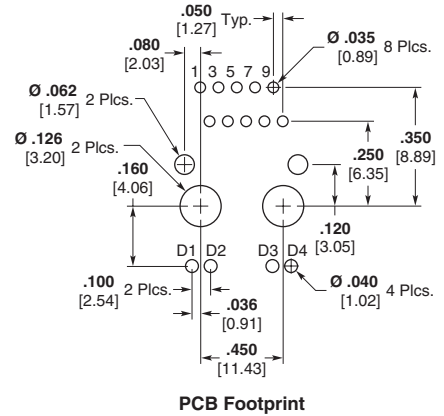
**Note:** All part numbers are RoHS compliant.

**MAG45 Modular Jacks with Integrated Magnetics (Continued)**

**Single Port  
10/100 Base-T,  
Gigabit & PoE, Tab Down**

**Product Facts**

- Single Port
- Through Hole, Tab Down
- Available with or without LEDs
- UL Recognized
- IEEE 802.3 & ANSI X3.263 Compliant
- Numerous circuit options available
- Supports all appropriate and available PHY Chips and applications
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**Single Port Tab Down\***

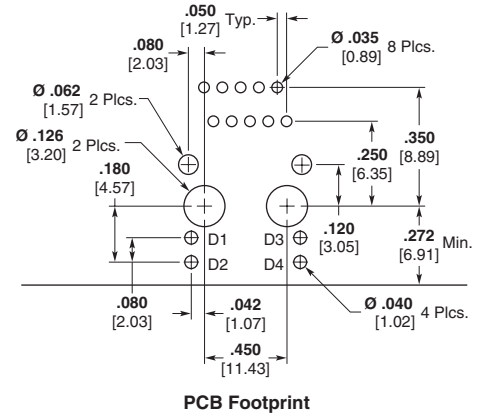
	10/100 Base-T	10/100 PoE	Gigabit	Gigabit PoE
	✓	✓	✓	No

\*multiple LED colors with and without resistors available.

10/100 Base-T	10/100 PoE	Gigabit
6605424-1	6605432-2	1-6605444-1
6-6605425-1	1-6605310-1	6605434-1
5-6605308-1	6-6605440-1	6605445-6

**Single Port  
10/100 Base-T,  
Gigabit & PoE, Tab Up**

- Single Port
- Through Hole, Tab Up
- Available with or without LEDs
- UL Recognized Component
- IEEE 802.3 & ANSI X3.263 Compliant
- Numerous circuit options available
- Supports all appropriate and available PHY Chips and applications
- For assistance in part selection, please refer to the Tyco Electronics E-Catalog
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**Single Port Tab Up\***

	10/100 Base-T	10/100 PoE	Gigabit	Gigabit PoE
	✓	✓	✓	**

\*multiple LED colors with and without resistors available.

\*\*under development.

10/100 Base-T	10/100 PoE	Gigabit
6605759-1	1-6605832-1	5-6605809-1
5-6605763-6	6605818-1	6605814-5
5-6605758-9	1-6605834-1	6605852-2

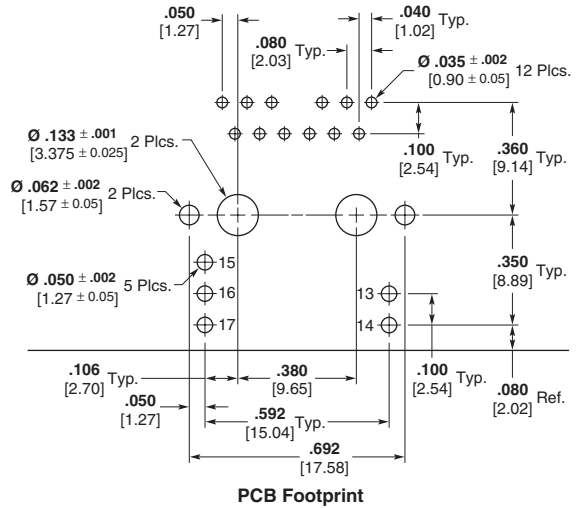
**Note:** All part numbers are RoHS compliant.

**MAG45 Modular Jacks  
with Integrated Magnetics**

**MAG45 Modular Jacks with Integrated Magnetics (Continued)**

**Single Port Low Profile 10/100 Base-T & Gigabit, Tab Up**

- Height is .445" vs std .580"
- UL Recognized
- IEEE 802.3 & ANSI X3.263 Compliant
- With LEDs
- Supports all appropriate and available PHY Chips and applications
- For assistance in part selection, please refer to the Tyco Electronics E-Catalog
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**Low Profile\***

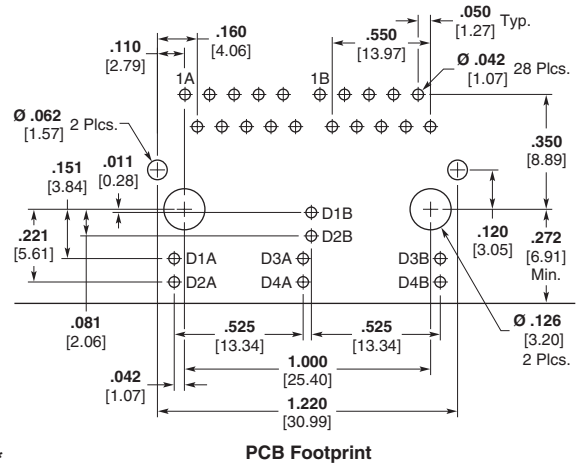
	10/100 Base-T	10/100 PoE	Gigabit	Gigabit PoE
	✓	No	✓	No

\*multiple LED colors with and without resistors available.

	10/100 Base-T	Gigabit
Tab Up	1368458-1	1368398-1
Tab Down	1368590-1	1368589-1

**Ganged 10/100 Base-T, Gigabit & PoE, Tab Up**

- Multi-Port Single Layer Connector
- Through Hole, Tab Up
- Available with or without LEDs
- UL Recognized Component
- IEEE 802.3 & ANSI X3.263 Compliant
- Numerous circuit options available
- Supports all appropriate and available PHY Chips and applications
- For assistance in part selection, please refer to the Tyco Electronics E-Catalog
- Your Tyco Electronics Sales Representative or one of the Product Information Centers listed below are also available to assist



**Ganged Multi-Port Tab Up (unless noted)\***

Port Configuration	10/100 Base-T	10/100 PoE	Gigabit	Gigabit PoE
1x2	✓	✓	✓	**
1x4	✓	✓	✓	✓
1x5	✓	✓	✓	**
1x6	✓	✓	✓	✓
1x8	✓	✓	✓	**

\*multiple LED colors with and without resistors available.

\*\* Under development.

Port Configuration	10/100 Base-T	10/100 PoE	Gigabit	Gigabit PoE
1x2	5-6610000-1	1-6610128-1	1-6610209-1	No***
1x2 Tab Down	No***	No	1840516-6	No
1x4	5-6610049-1	1840500-1	6610068-6	1840514-1
1x4 Tab Down	6610211-1	No	6610204-1	No
1x4 Tab Down Low Profile	No***	No	1840515-1	No
1x4 Tab Up Low Profile	No***	No	1761889-1	No
1x5	6610078-2	6610182-2	1-6610132-1	No
1x6	1-6610084-1	5-6610168-8	6610157-1	6610199-1
1x8	6610112-1	1-6610122-1	6610160-6	No***

\*\*\* Contact product management about possibility of adding.

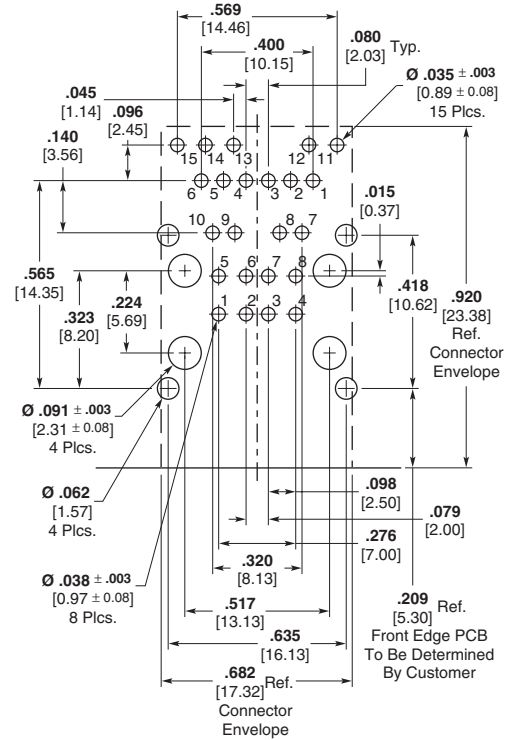
**Note:** All part numbers are RoHS compliant.

MAG45 Modular Jacks with Integrated Magnetics

**MAG45 Modular Jacks with Integrated Magnetics (Continued)**

**Stacked USB/RJ45 (10/100 Base-T or Gigabit)**

- USB/RJ45 with integrated magnetics
- 10/100 or Gigabit applications
- Stacked USB type A included
- UL Recognized
- Available with LEDs
- IEEE 802.3 & ANSI X3.263 Compliant
- USB 2.0 Compliant
- Numerous circuit options available
- Supports all appropriate and available PHY Chips and applications
- For assistance in part selection, please refer to the Tyco Electronics E-Catalog
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**PCB Footprint**

**USB/RJ45\***

	10/100 Base-T	10/100 PoE	Gigabit	Gigabit PoE
	✓	No	✓	No

\*multiple LED colors with and without resistors available.

Port Configuration	10/100 Base-T	Gigabit
	6620004-1	6368472-1
RJ45/Dual USB	6620002-1	6620005-1
	6368532-1	6620009-1
RJ45/Single USB	No**	1840012-1

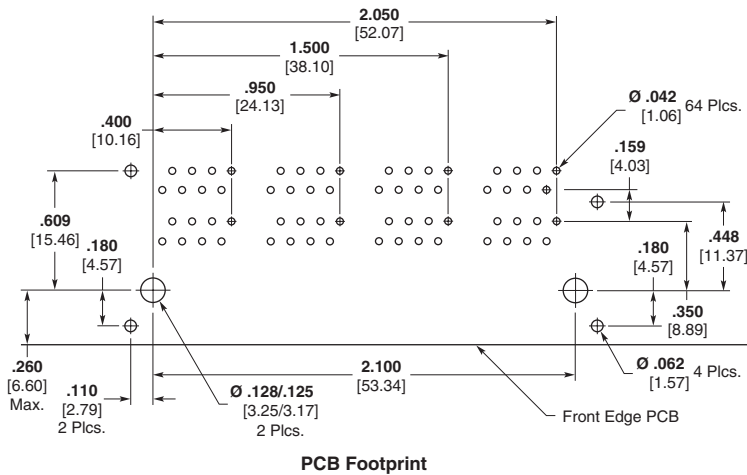
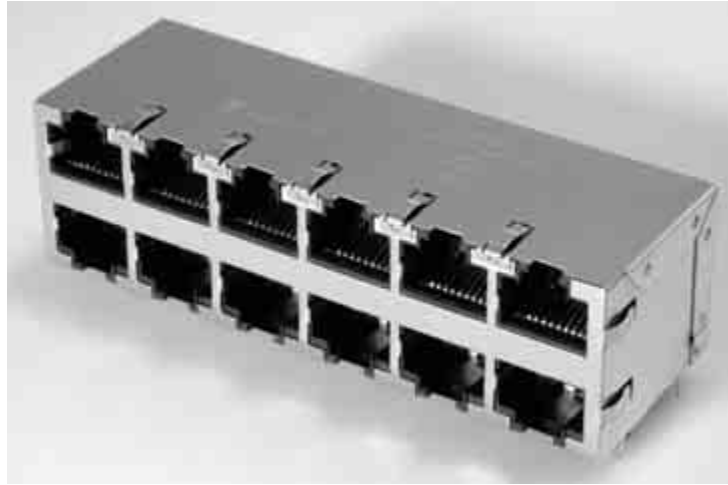
\*\* Contact product management about possibility of adding.

**Note:** All part numbers are RoHS compliant.

**MAG45 Modular Jacks with Integrated Magnetics** (Continued)

**Stacked (10/100 Base-T)**

- Stacked Connector
- UL Recognized
- Without LEDs
- IEEE 802.3 & ANSI X3.263 Compliant
- Numerous circuit options available
- Supports all appropriate and available PHY Chips and applications
- For assistance in part selection, please refer to the Tyco Electronics E-Catalog
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**Stacked**

Port Configuration	10/100 Base-T	10/100 PoE
2x1	✓	✓
2x3	✓	✓
2x4	✓	✓
2x6	✓	✓
2x8	✓	✓

Port Configuration	10/100 Base-T
2x4	6615012-1
2x6	6368525-1
2x8	6368526-1

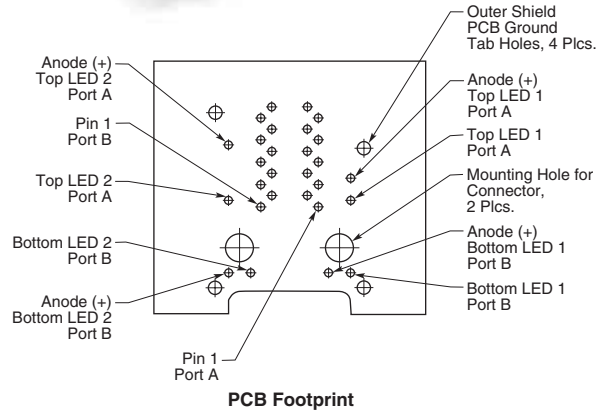
**Note:** All part numbers are RoHS compliant.

MAG45 Modular Jacks with Integrated Magnetics

**MAG45 Modular Jacks with Integrated Magnetics** (Continued)

**Stacked (10/100 Base-T, Gigabit & PoE)**

- Stacked, Through Hole, Vertical 10-Pin Footprint
- Available with or without LEDs
- UL Recognized
- IEEE 802.3 & ANSI X3.263 Compliant
- Numerous circuit options available
- Supports all appropriate and available PHY Chips and applications
- For assistance in part selection, please refer to the Tyco Electronics E-Catalog
- Your Tyco Electronics Sales Representative or one of the Product Information Centers listed below are also available to assist



**Stacked\***

Port Configuration	10/100 Base-T	10/100 PoE	Gigabit	Gigabit PoE
2x1	✓	✓	✓	✓
2x2	✓	✓	✓	✓
2x3	✓	✓	✓	✓
2x4	✓	✓	✓	✓
2x6	✓	✓	✓	✓
2x7	—	—	✓	—
2x8	✓	✓	✓	✓

\*multiple LED colors with and without resistors available.

Port Configuration	10/100 Base-T	10/100 PoE	Gigabit	Gigabit PoE
<b>With LED's</b>				
2x1	6368457-1	No**	6368513-1	No**
2x2	6368387-1	No**	6368511-1	No**
2x4	6368400-1	No**	6368507-1	No**
2x6	1840115-1	6615076-1	6368506-1	No**
2x8	6368536-1	No**	6368510-1	No**
<b>Without LED's</b>				
2x1	1840124-1	No**	1840003-1	No**
2x2	No**	No**	6368523-1	No**
2x4	No**	6615072-1	1840155-1	No**
2x6	No**	6615070-1	1840186-1	1840141-1
2x7	No**	No**	1840187-1	No**
2x8	No**	No**	1840188-1	1840142-1

\*\* Contact product management about possibility of adding.

**Note:** All part numbers are RoHS compliant.

**MAG45 Modular Jacks with Integrated Magnetics** (Continued)

**MAG45 with PoE Controller  
RJ45 + PoE Magnetics +  
Silicon Power Controller  
Chip**

**PoE Product Features**

- Integrated Silicon PoE 12-port controller
  - 802.3af compliant
  - Auto and Enhanced mode capable
- Footprint
  - Press-fit configuration
  - Ease of routing on customer PCB
- Pin Assignments
  - Signal integrity benefits vs. standard footprint
- Three options in same footprint:
  - Integrated Magnetics Only
  - Integrated Magnetics, Enabled PoE
  - Integrated Magnetics, Integrated PoE
- 2250Vdc / 1500Vac electrical isolation per 802.3 requirements

**Customer Benefits:**

- Simplify implementation of full PoE solution
- Board real estate savings
- Reduce board layout issues
- Integrate new and existing technologies into a single connector unit

**Why Integrate the PoE Circuitry into the RJ?**

- Single package (PoE, LED's, Magnetics, Heat Sink)
- Identical footprint for both Integrated PoE/Enabled and non-PoE
- Single design, single motherboard can be used for both PoE and non-PoE
- Same design can migrate between switches (including blades and fixed)
- Delivered fully tested and qualified, no need to bother with complicated PoE testing



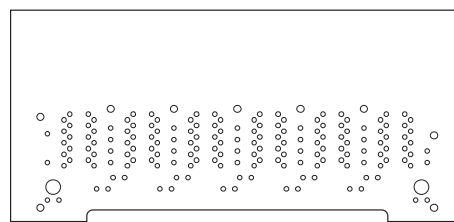
- Reduced layer count/ Reduces cost of motherboard
- No PoE daughterboards
- Isolated PoE voltage provided directly from the power supply
- All per port components embedded in RJ
- Eliminates issues of voltage isolation on motherboard
- Reduces EMI risks
- Real time control of overload, underload, short circuits and under voltage states
- 0.5A current carrying capacity
- Full AC disconnect and classification
- 80V tolerant, surge protected system
- Registers for MIB 8 support and parameters adjustment
- Single voltage feeding (44 – 57VDC)
- Designed to support legacy capacitor detection
- How Does PoE RJ45 Work?
  - Embedded inside each RJ45 is the Silicon Power PD64012 chip
  - Each RJ45 is a 12 port PoE system, communicating

- with each other to create a system of up to 48 ports
- The Host CPU controls the system via I2C
- Two main operating modes: Automatic/Enhanced Mode to match system customization requirements

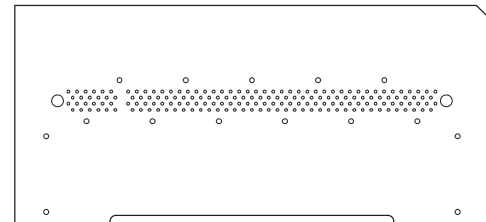
For assistance in part selection, please refer to the Tyco Electronics E-Catalog.

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**Legacy vs. Press Fit PoE Footprint**



Legacy Footprint  
Solder Only



Integrated/Enabled/Non PoE Footprint  
Press Fit

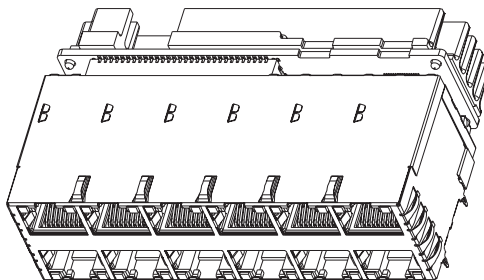
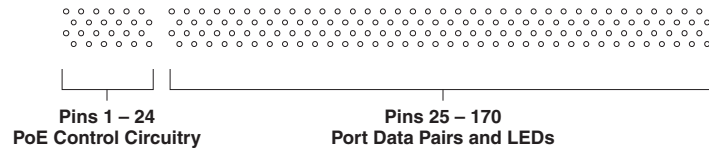
**MAG45 Modular Jacks  
with Integrated Magnetics**

**MAG45 Modular Jacks with Integrated Magnetics** (Continued)

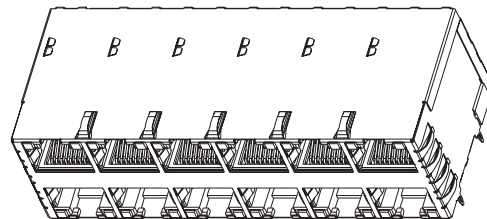
**Part Number Matrix**

Base Part Number	Integrated Magnetics	Power over Ethernet	PCB Attach Options	LED Options (2 per Port)	Description
1658821	10/100/1000	Integrated	Press Fit	With/Without Yellow/Green	PowerDsine Integrated Chip Set, 802.3af Compliant
1658822	10/100	Integrated	Press Fit	With/Without Yellow/Green	PowerDsine Integrated Chip Set, 802.3af Compliant
1658825	10/100/1000	Enabled	Press Fit	With/Without Yellow/Green	PoE Chip set on Motherboard, 802.3af Compliant
1658826	10/100	Enabled	Press Fit	With/Without Yellow/Green	PoE Chip set on Motherboard, 802.3af Compliant
1658827	10/100/1000	No	Press Fit	With/Without Yellow/Green	
1658828	10/100	No	Press Fit	With/Without Yellow/Green	

Same Mechanical Footprint, all versions.  
Same Electrical Footprint, pins 25 – 170, all versions.



Part Number 1658821 – 1658822



Part Number 1658825 – 1658828

**Note:** All part numbers are RoHS compliant.

**MAG45 Modular Jacks with Integrated Magnetics**



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