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RJ45, Single Port, 10/100/1G/5G Base-T Magnetics Module



ARJM11 Series

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21.30 x 15.90 x 13.60mm
RoHS/RoHS II Compliant
MSL Level = 1

Features

- IEEE 802.3 compliant and UL certified
- High performance integrated magnetics for EMI suppression
- Suitable for CAT5 and CAT6 UTP cabling
- RoHS peak wave solder temperature rating 265°C
- Extended operating temperature -40 to 85°C option

Applications

- Single port 10/100/1G/5G Base-T LAN
- Network Interface Cards
- Switches/Routers
- Network attached storage
- Servers, NIC's
- Media converters

Electrical Specifications

Parameters	Minimum	Typical	Maximum	Units	Notes
Turn Ratio (±3%)	1CT:1CT				100kHz, 0.1V
Inductance	350			μH	100kHz, 0.1V, 8mADC
	200				For 2.5G Base-T only
	160				For 5G Base-T only
Operating Temperature	-40		+85	°C	See options
Storage Temperature	-40		+85	°C	
HiPOT	2250			VDC	VDC for 60 sec.
100 Base-T					
Insertion Loss			-1.0	dB	0.3-100MHz
Return Loss	-18			dB	1-30MHz
	-13				30-60MHz
	-10				60-100MHz
Crosstalk	-30			dB	1-1000MHz
CMRR	-30			dB	1-100MHz
100 Base-T PoE, PoE+					
Insertion Loss			-1.1	dB	0.5-100MHz
Return Loss	-18			dB	0.5-30MHz
	-15				30-60MHz
	-12				60-80MHz
Crosstalk	-35			dB	0.5-40MHz
	-30				40-100MHz
CMRR	-30			dB	0.5-100MHz
DC Resistance			1.0	Ω	Secondary (cable) side
POE Balanced DC line current			350	mA	@57VDC continuous
			500		@57VDC for 200ms
POE+ Balanced DC line current			600	mA	@57VDC continuous
			720		@57VDC for 200ms

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Parameters	Minimum	Typical	Maximum	Units	Notes
1000 Base-T					
Insertion Loss	-		-1.1	dB	0.3-100MHz
Return Loss	-16			dB	1-30MHz
	-13				30-60MHz
	-10				60-100MHz
Crosstalk	-30			dB	1-100MHz
CMRR	-30			dB	1-100MHz
2.5G Base-T					
Insertion Loss			-1.0	dB	1-50MHz
			-1.5		50-125MHz
Return Loss	-18			dB	1-40MHz
	$-18+15\log(f/40)\dagger$				40-250MHz
Crosstalk	-35			dB	1-40MHz
	$-35+15\log(f/40)\dagger$				40-125MHz
CMRR	-30			dB	1-200MHz
5G Base-T					
Insertion Loss	-0.5			dB	1-50MHz
	-1.0				50-125MHz
	-2.0				125-200MHz
	-2.5				200-250MHz
Return Loss	-20			dB	1-50MHz
	$-20+15\log(f/40)\dagger$				50-250MHz
Crosstalk	-25			dB	1-125MHz
	-20				125-250MHz
CMRR	-23			dB	1-250MHz

†f represents the test frequency specified in MHz

ARJM11 Series is RoHS/RoHS II Compliant

MSL level: 1

UL Certification Number: E503350



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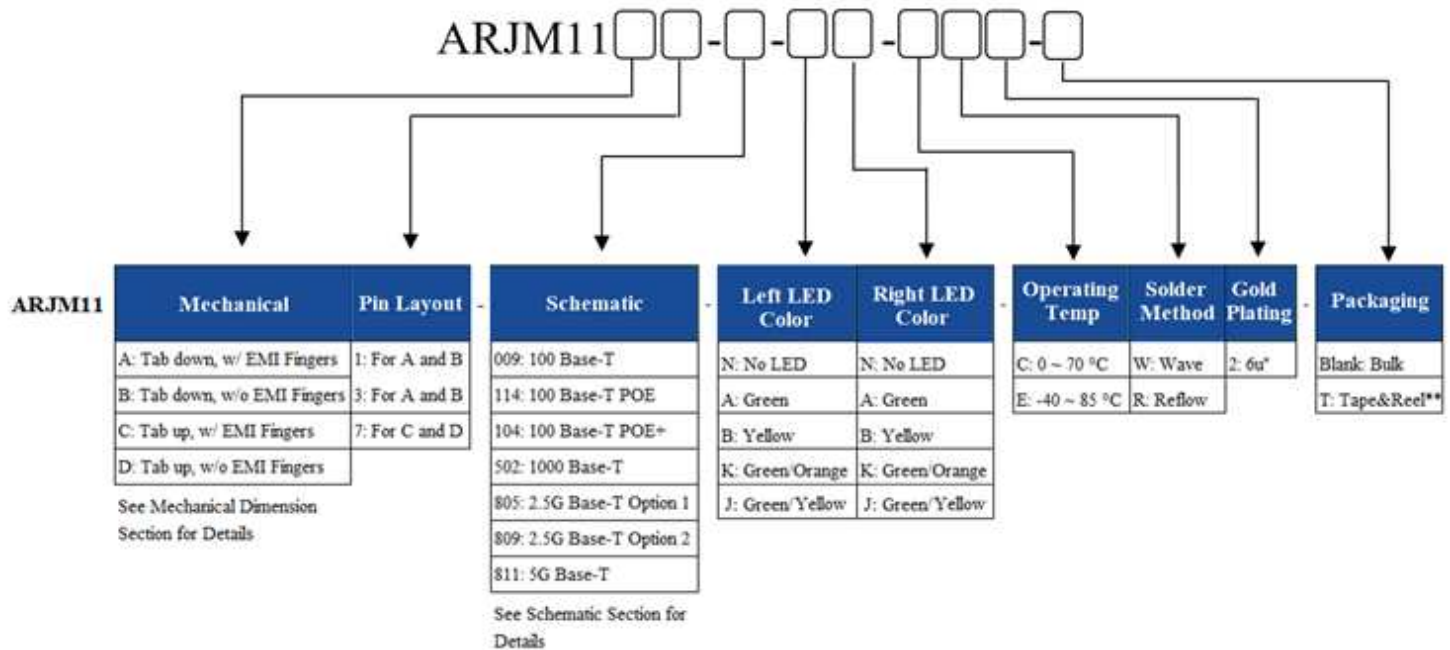


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RoHS/RoHS II Compliant
MSL Level = 1

Part Number Identification



Not all combinations are supported. Please see the tables on the next pages for available part numbers.

**Part numbers containing 'R' in the suffix refers to the reflow soldering method. These devices are available in bulk/tray and T&R packaging. See available parts list below and the Packaging section for more detail.

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Available Part Numbers

100 Base-T Standard Part Numbers

Part Number	Speed	Tab Direction	LED (Left:Right)	Operating Temp	Solder Method	Pkg Format
ARJM11A1-009-AB-ER2	100 Base-T	Tab Down	G : Y	-40°C ~ 85°C	Reflow	B, C
ARJM11A1-009-AB-EW2	100 Base-T	Tab Down	G : Y	-40°C ~ 85°C	Wave	A
ARJM11A1-009-AB-EW4	100 Base-T	Tab Down	G : Y	-40°C ~ 85°C	Wave	A
ARJM11A1-009-NN-ER3	100 Base-T	Tab Down	No LED	-40°C ~ 85°C	Reflow	B, C
ARJM11A1-009-NN-EW2	100 Base-T	Tab Down	No LED	-40°C ~ 85°C	Wave	A
ARJM11A3-009-AB-ER2	100 Base-T	Tab Down	G : Y	-40°C ~ 85°C	Reflow	B, C
ARJM11B1-009-AB-EW2	100 Base-T	Tab Down	G : Y	-40°C ~ 85°C	Wave	A
ARJM11B1-009-NN-ER2	100 Base-T	Tab Down	No LED	-40°C ~ 85°C	Reflow	B, C
ARJM11B1-009-NN-EW2	100 Base-T	Tab Down	No LED	-40°C ~ 85°C	Wave	A
ARJM11C7-009-AB-EW2	100 Base-T	Tab Up	G : Y	-40°C ~ 85°C	Wave	A
ARJM11C7-009-KB-EW2	100 Base-T	Tab Up	G/O : Y	-40°C ~ 85°C	Wave	A
ARJM11C7-009-NN-EW2	100 Base-T	Tab Up	No LED	-40°C ~ 85°C	Wave	A
ARJM11D7-009-AB-EW2	100 Base-T	Tab Up	G : Y	-40°C ~ 85°C	Wave	A
ARJM11D7-009-NN-EW2	100 Base-T	Tab Up	No LED	-40°C ~ 85°C	Wave	A

100 Base-T POE and POE+ Standard Part Numbers

Part Number	Speed	Tab Direction	LED (Left:Right)	Operating Temp	Solder Method	Pkg Format
ARJM11C7-104-AB-EW2	100 Base-T POE+	Tab Up	G : Y	-40°C ~ 85°C	Wave	B, C
ARJM11C7-104-BA-EW2	100 Base-T POE+	Tab Up	Y : G	-40°C ~ 85°C	Wave	B, C
ARJM11C7-114-BA-EW2	100 Base-T POE	Tab Up	Y : G	-40°C ~ 85°C	Wave	B, C
ARJM11C7-114-NN-CW2	100 Base-T POE	Tab Up	No LED	0°C ~ 70°C	Wave	B, C
ARJM11D7-104-AB-EW2	100 Base-T POE+	Tab Up	G : Y	-40°C ~ 85°C	Wave	B, C
ARJM11D7-114-AB-ER2	100 Base-T POE	Tab Up	G : Y	-40°C ~ 85°C	Reflow	B, C
ARJM11D7-114-AB-EW2	100 Base-T POE	Tab Up	G : Y	-40°C ~ 85°C	Wave	B, C
ARJM11D7-114-NN-EW4	100 Base-T POE	Tab Up	No LED	-40°C ~ 85°C	Wave	B, C



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1000 Base-T Standard Part Numbers

Part Number	Speed	Tab Direction	LED (Left:Right)	Operating Temp	Solder Method	Pkg Method
ARJM11A1-502-AB-CW2	1000 Base-T	Tab Down	G : Y	0°C ~ 70°C	Wave	A
ARJM11A1-502-AB-ER2	1000 Base-T	Tab Down	G : Y	-40°C ~ 85°C	Reflow	B, C
ARJM11A1-502-AB-EW2	1000 Base-T	Tab Down	G : Y	-40°C ~ 85°C	Wave	A
ARJM11A1-502-JJ-EW2	1000 Base-T	Tab Down	G/Y : G/Y	-40°C ~ 85°C	Wave	A
ARJM11A1-502-NN-EW2	1000 Base-T	Tab Down	No LED	-40°C ~ 85°C	Wave	A
ARJM11B1-502-AB-EW2	1000 Base-T	Tab Down	G : Y	-40°C ~ 85°C	Wave	A
ARJM11B1-502-NN-EW2	1000 Base-T	Tab Down	No LED	-40°C ~ 85°C	Wave	A
ARJM11C7-502-AB-ER2	1000 Base-T	Tab Up	G : Y	-40°C ~ 85°C	Reflow	B, C
ARJM11C7-502-AB-EW2	1000 Base-T	Tab Up	G : Y	-40°C ~ 85°C	Wave	A
ARJM11C7-502-KB-EW2	1000 Base-T	Tab Up	G/O : Y	-40°C ~ 85°C	Wave	A
ARJM11C7-502-NN-EW2	1000 Base-T	Tab Up	No LED	-40°C ~ 85°C	Wave	A
ARJM11D7-502-AB-EW2	1000 Base-T	Tab Up	G : Y	-40°C ~ 85°C	Wave	A
ARJM11D7-502-NN-EW2	1000 Base-T	Tab Up	No LED	-40°C ~ 85°C	Wave	A

2.5 Base-T Standard Part Numbers

Part Number	Speed	Tab Direction	LED (Left:Right)	Operating Temp	Solder Method	Pkg Format
ARJM11A1-805-AB-EW2	2.5G Base-T	Tab Down	G : Y	-40°C ~ 85°C	Wave	A
ARJM11B1-805-AB-EW2	2.5G Base-T	Tab Down	G : Y	-40°C ~ 85°C	Wave	A
ARJM11B1-805-KB-CW2	2.5G Base-T	Tab Down	G/O : Y	0°C ~ 70°C	Wave	A
ARJM11B1-805-KB-EW2	2.5G Base-T	Tab Down	G/O : Y	-40°C ~ 85°C	Wave	A
ARJM11C7-809-AB-EW2	2.5G Base-T	Tab Up	G : Y	-40°C ~ 85°C	Wave	A
ARJM11D7-809-AB-EW2	2.5G Base-T	Tab Up	G : Y	-40°C ~ 85°C	Wave	A

5G Base-T Standard Part Numbers

Part Number	Speed	Tab Direction	LED (Left:Right)	Operating Temp	Solder Method	Pkg Format
ARJM11A1-811-AB-EW2	5G Base-T	Tab Down	G : Y	-40°C ~ 85°C	Wave	A
ARJM11B1-811-AB-EW2	5G Base-T	Tab Down	G : Y	-40°C ~ 85°C	Wave	A
ARJM11C7-811-AB-EW2	5G Base-T	Tab Up	G : Y	-40°C ~ 85°C	Wave	A
ARJM11D7-811-AB-EW2	5G Base-T	Tab Up	G : Y	-40°C ~ 85°C	Wave	A



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Materials

1. Housing:

Material:
PBT, UL94V-0
Standard Color: Black

2. Contact Pin:

Material: Phosphor Bronze
Plating (1): Nickel
Plating (2): 100%Sn

3. Insert:

Material:
PBT, UL94V-0

Contact Material: Phosphor Bronze
Plating (1): Nickel
Plating (2): Gold, 6u"

4. LED:

Material: Diffused Epoxy Lens, 0.5x0.5mm
Carbon Steel wireframe leads

5. Metal Shell:

Material: Brass
Plating (1): Nickel

Note: Abracon LLC will not alter any material composition, without prior written notification.

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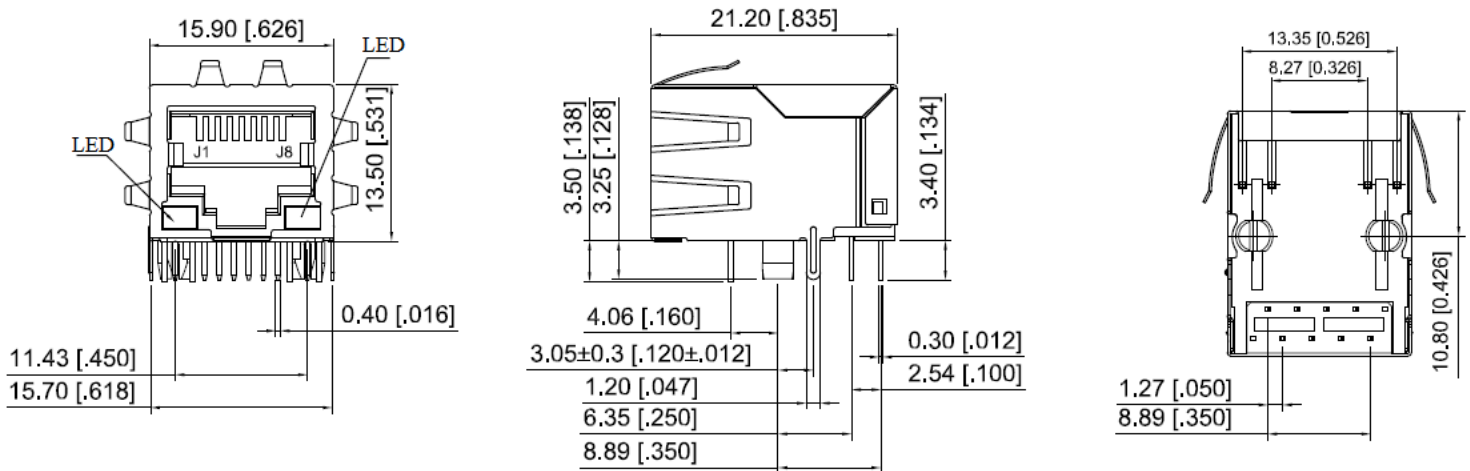
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MSL Level = 1

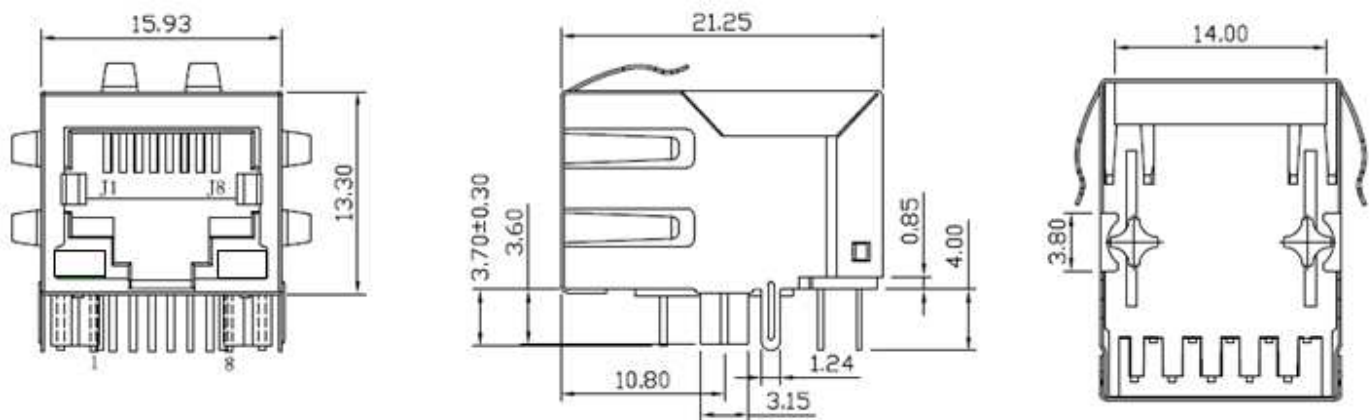
Mechanical Specifications

A: Tab Down, w/ EMI Fingers (Wave)



Dimensions: mm[inch] (Unless otherwise specified, all tolerances are ±0.25[0.010])

A: Tab Down, w/ EMI Fingers (Reflow)



Dimensions are in mm. Tolerances are ±0.25mm unless noted otherwise.



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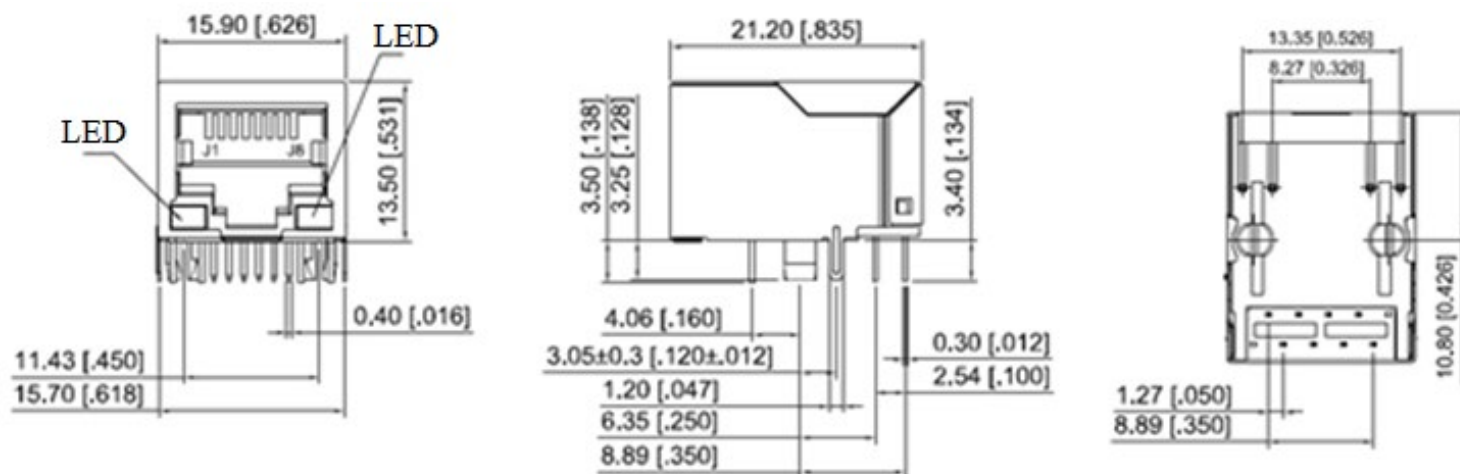


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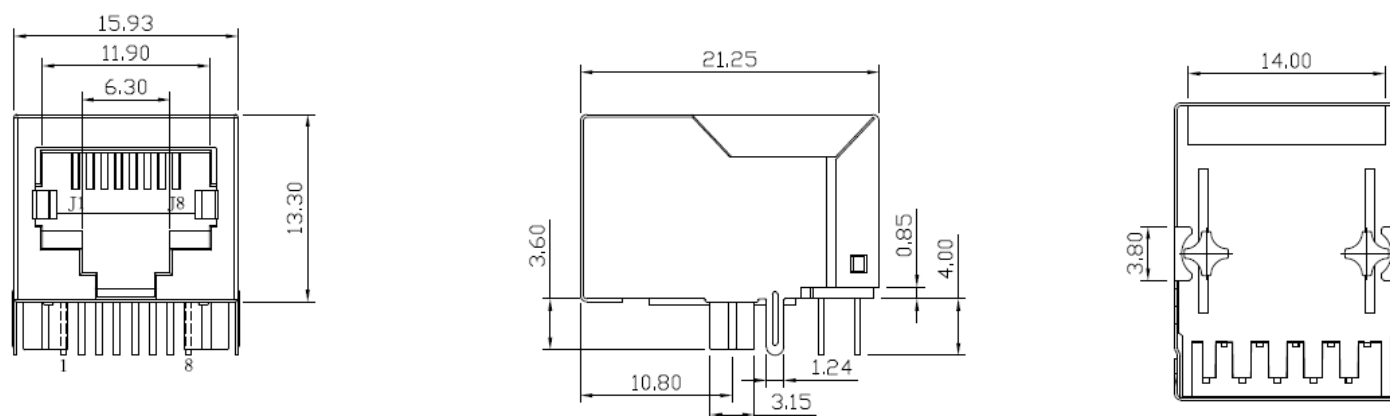
21.30 x 15.90 x 13.60mm
RoHS/RoHS II Compliant
MSL Level = 1

B: Tab Down, w/o EMI Fingers (Wave)



Dimensions: mm[inch] (Unless otherwise specified, all tolerances are ± 0.25 [0.010])

B: Tab Down, w/o EMI Fingers (Reflow)



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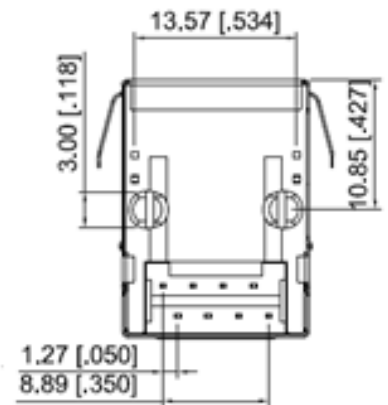
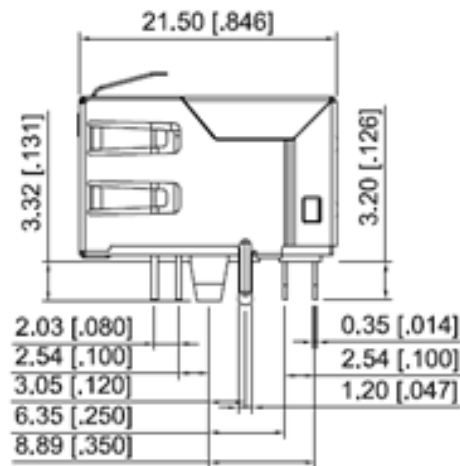
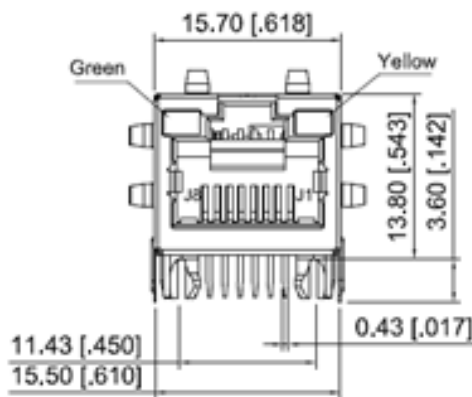


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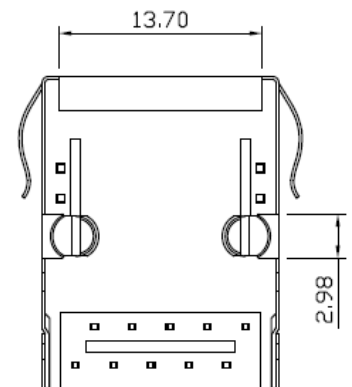
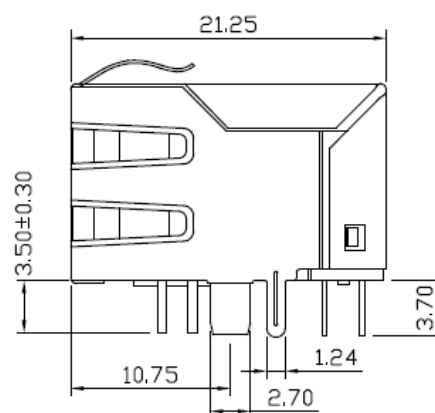
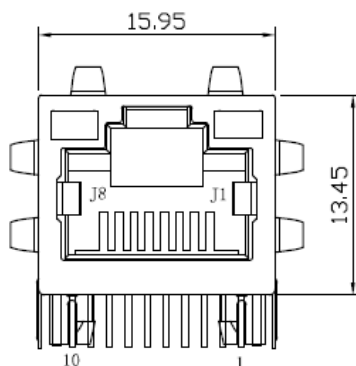
21.30 x 15.90 x 13.60mm
RoHS/RoHS II Compliant
MSL Level = 1

C: Tab Up, w/ EMI Fingers (Wave)



Dimensions: mm[inch] (Unless otherwise specified, all tolerances are ± 0.25 [0.010])

C: Tab Up, w/ EMI Fingers (Reflow)



Dimensions are in mm. Tolerances are ± 0.25 mm unless noted otherwise.

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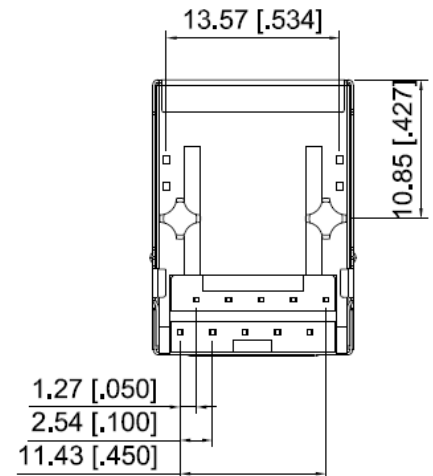
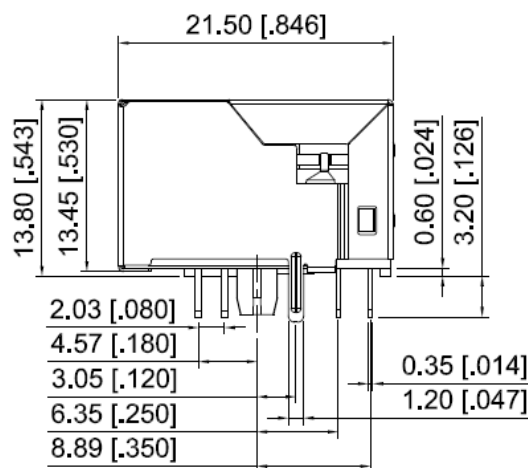
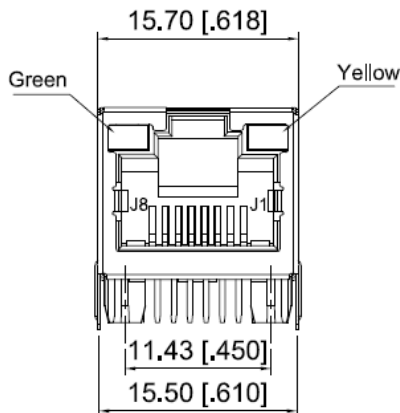
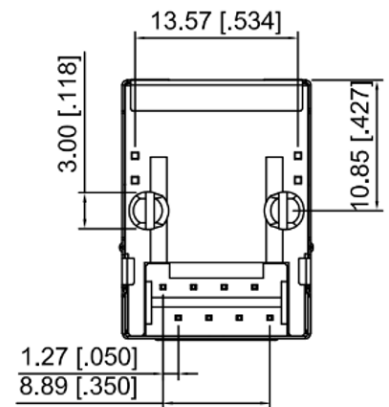
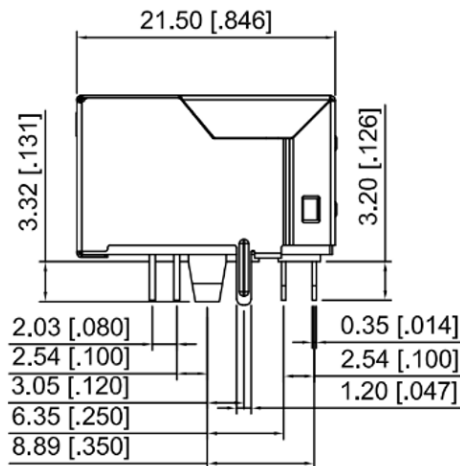
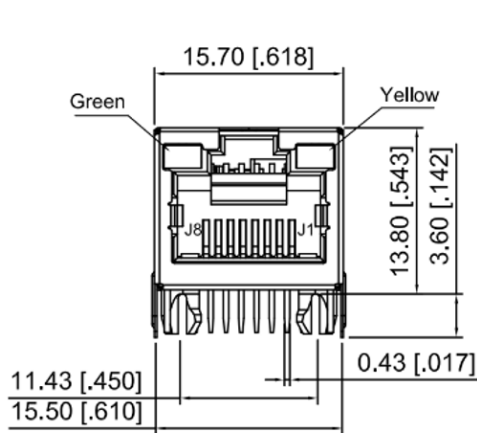


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21.30 x 15.90 x 13.60mm
RoHS/RoHS II Compliant
MSL Level = 1

D: Tab Up, w/o EMI Fingers 8 Pin and 10 Pin (Wave)



Dimensions: mm[inch] (Unless otherwise specified, all tolerances are ± 0.25 [0.010])

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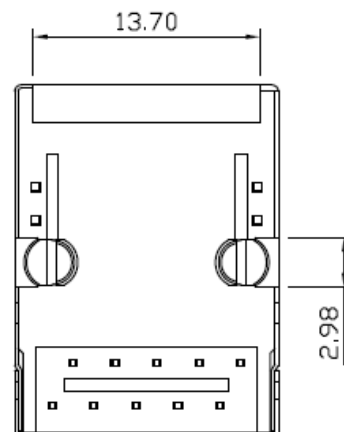
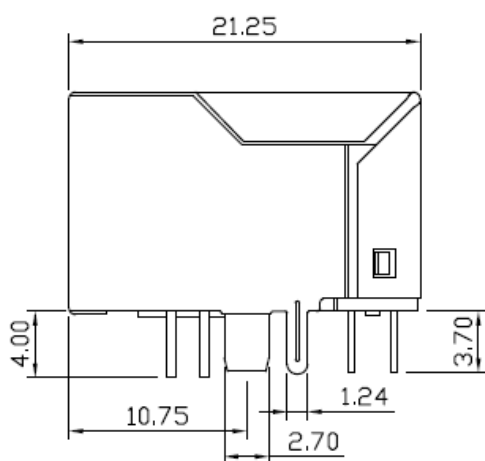
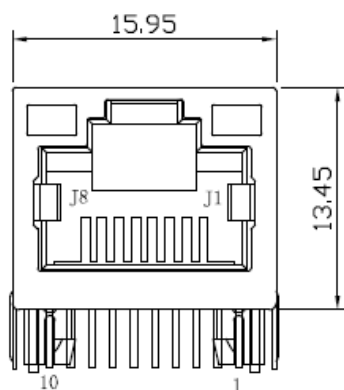


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21.30 x 15.90 x 13.60mm
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D: Tab Up, w/o EMI Fingers (Reflow)



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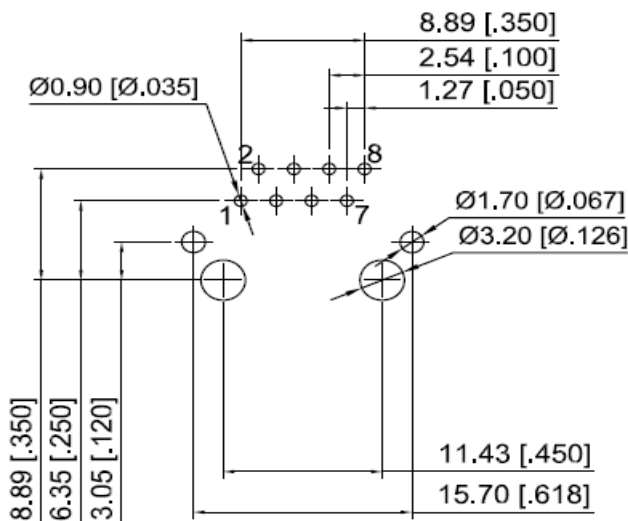


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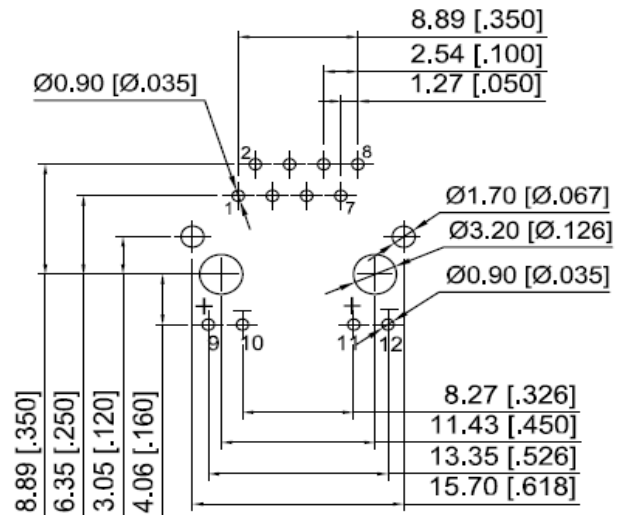
Recommended Layout

Pin Layout = 1 (Horizontal LEDs/ No LEDs)

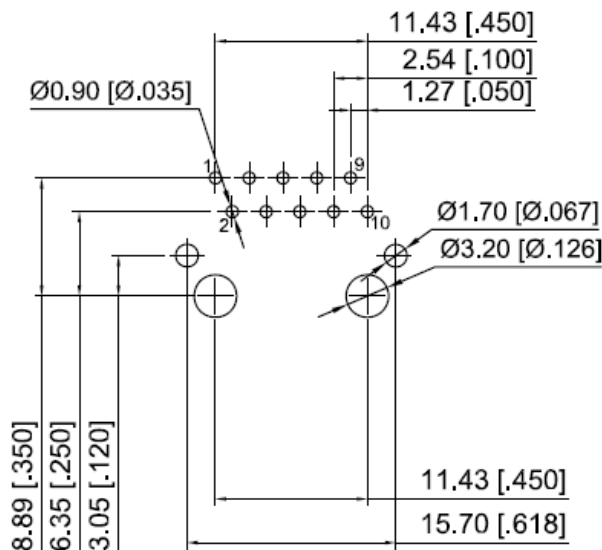
8 Pins, no LED
For 100 Base-T



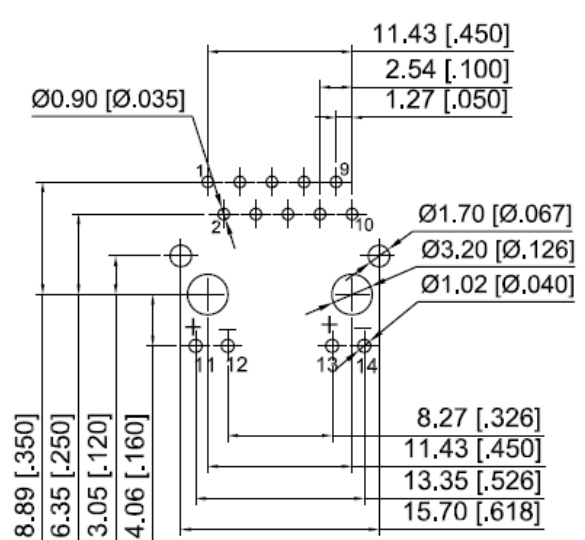
8 Pins, w/ LED
For 100 Base-T



10 Pins, no LED
For 100 PoE/1000/2.5G/5G Base-T



10 Pins, w/ LED
For 100 PoE/1000/2.5G/5G Base-T



Dimensions: mm[inch] Layout tolerances are ± 0.05 [0.002]mm unless noted otherwise.



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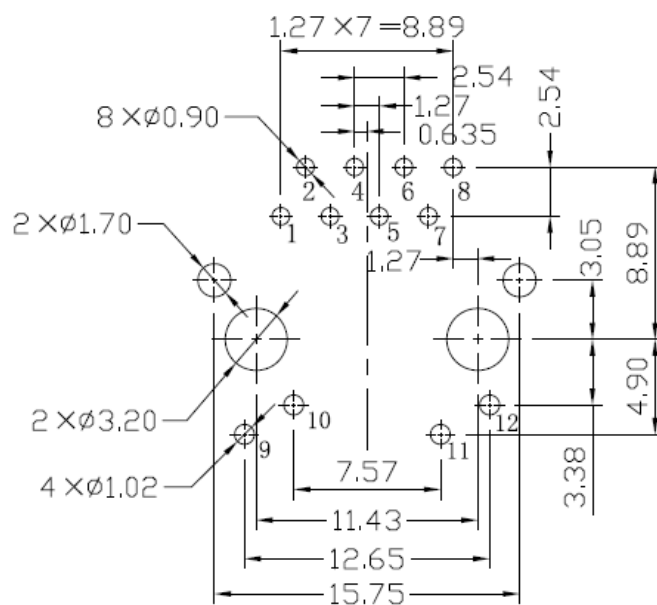
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21.30 x 15.90 x 13.60mm
RoHS/RoHS II Compliant
MSL Level = 1

Pin Layout = 3 (diagonal LEDs)

**8 Pins, w/ LEDs
For 100 Base-T**



Suggested PCB Layout (Top View)

Dimensions: mm. Layout tolerances are ± 0.05 mm unless noted otherwise.

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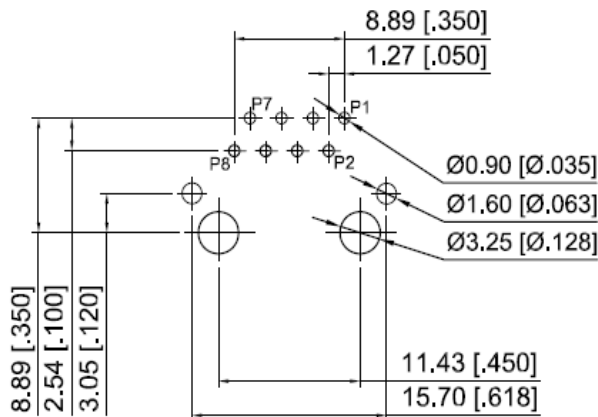
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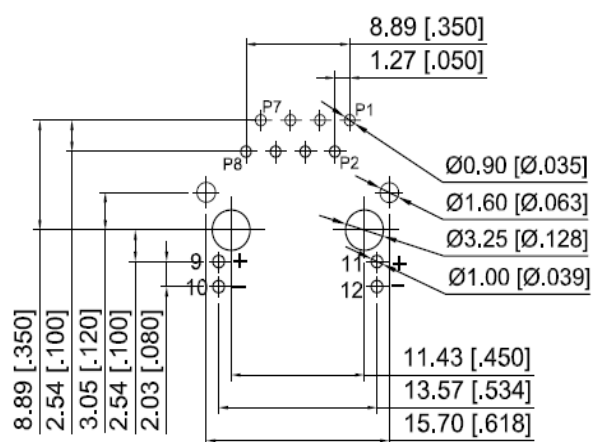
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MSL Level = 1

Pin Layout = 7 (Vertical LEDs/ No LEDs)

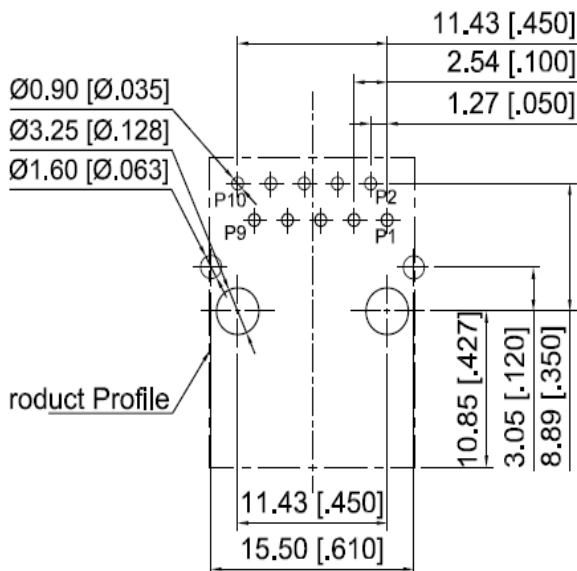
**8 Pins, no LED
For 100 Base-T**



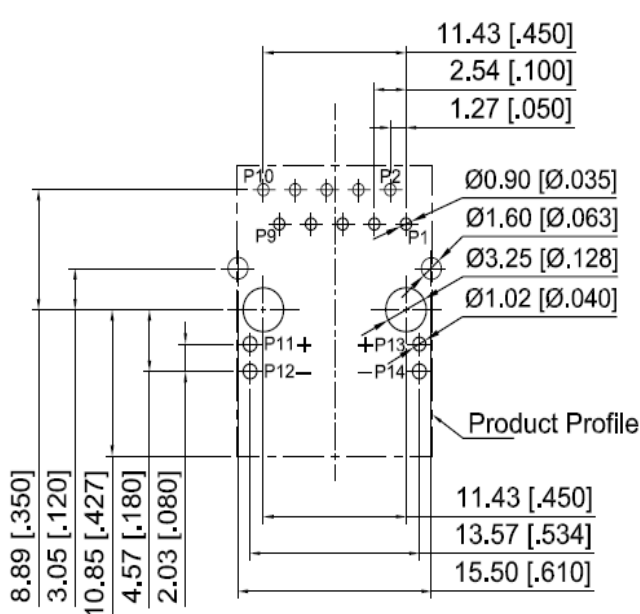
**8 Pins, w/ LED
For 100 Base-T**



**10 Pins, no LED
For 100/1000/2.5G/5G Base-T**



**10 Pins, w/ LED
For 100/1000/2.5G/5G Base-T**



Dimensions: mm. Layout tolerances are ± 0.05 mm unless noted otherwise.



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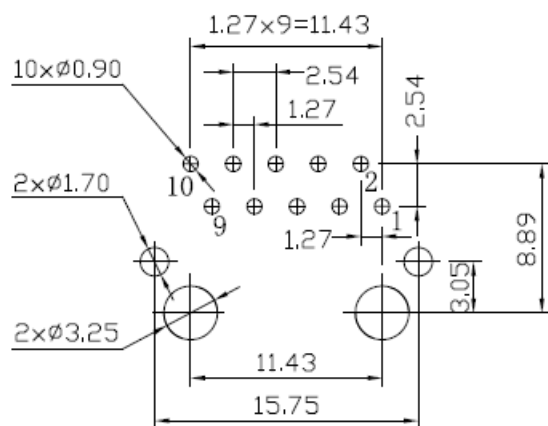


Check Inventory

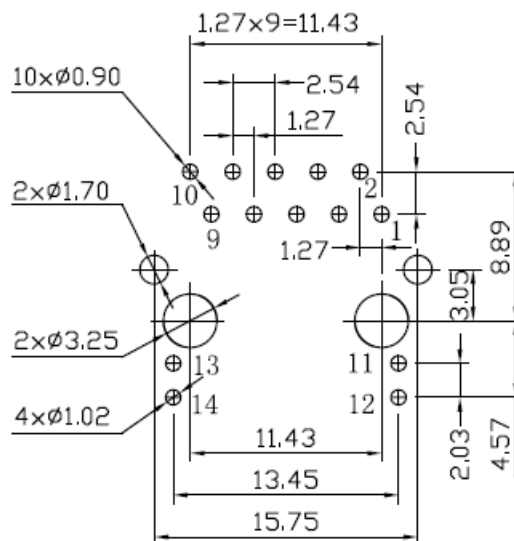


21.30 x 15.90 x 13.60mm
RoHS/RoHS II Compliant
MSL Level = 1

10 Pins, no LED
For 100 Base-T w/ POE, POE+



10 Pins, w/ LED
For 100 Base-T w/ POE, POE+



Dimensions are in mm. Layout tolerances are ± 0.05 mm unless noted otherwise.

RJ45, Single Port, 10/100/1G/5G Base-T Magnetics Module



ARJM11 Series

Request Samples



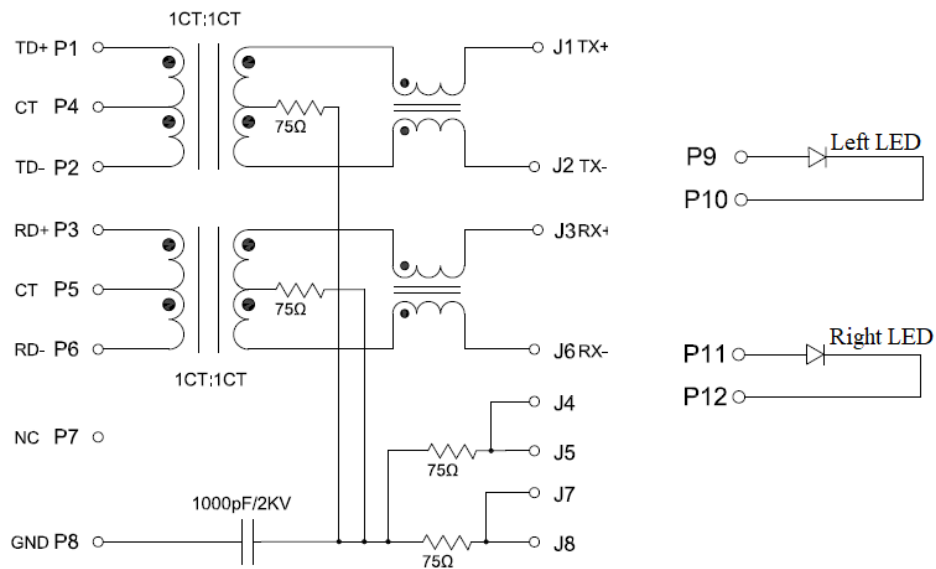
Check Inventory



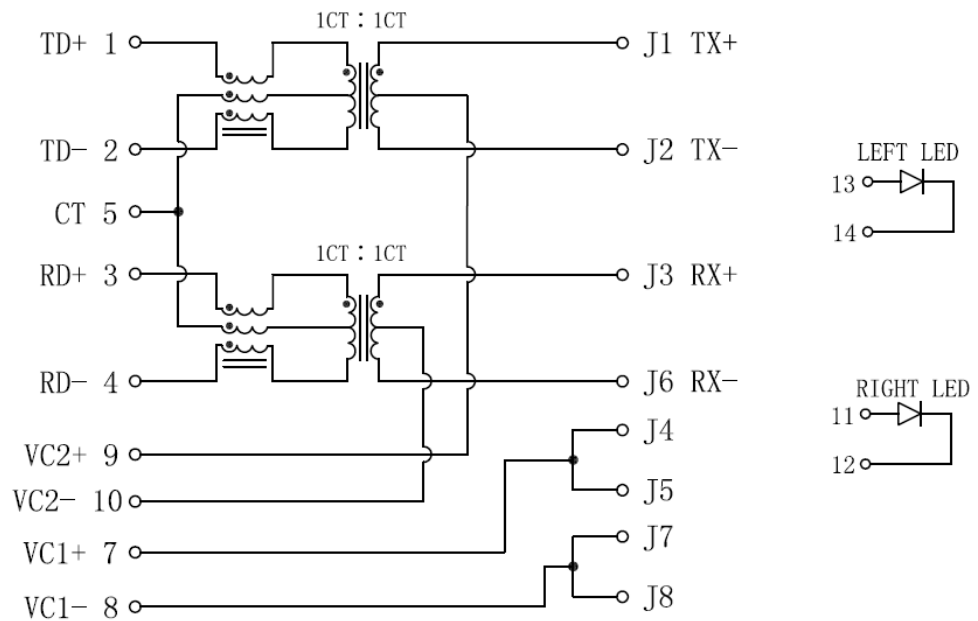
21.30 x 15.90 x 13.60mm
RoHS/RoHS II Compliant
MSL Level = 1

Schematic

009 (100 Base-T)



104 (100 Base-T & PoE+)



RJ45, Single Port, 10/100/1G/5G Base-T Magnetics Module



ARJM11 Series

Request Samples

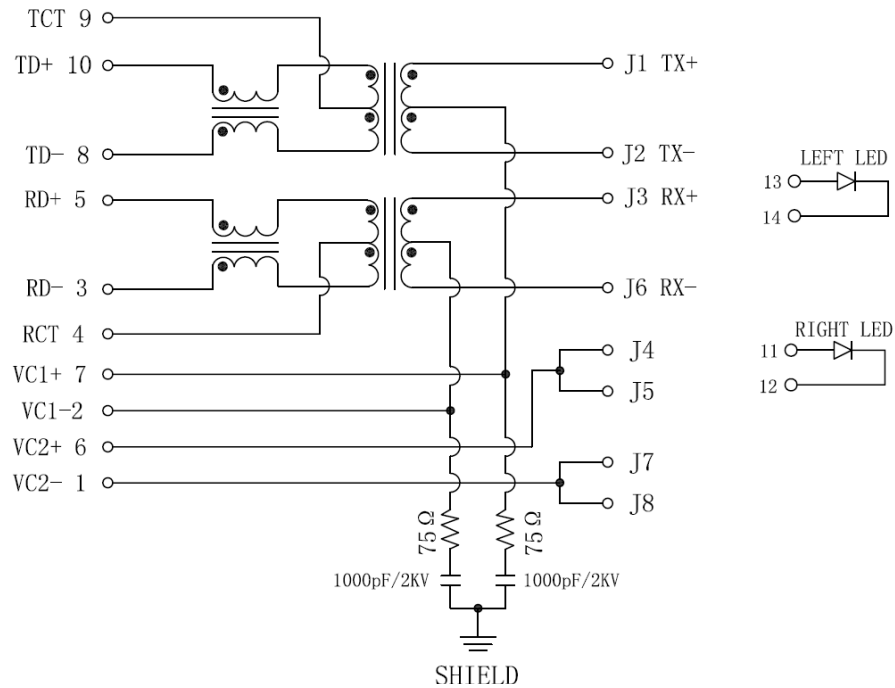


Check Inventory

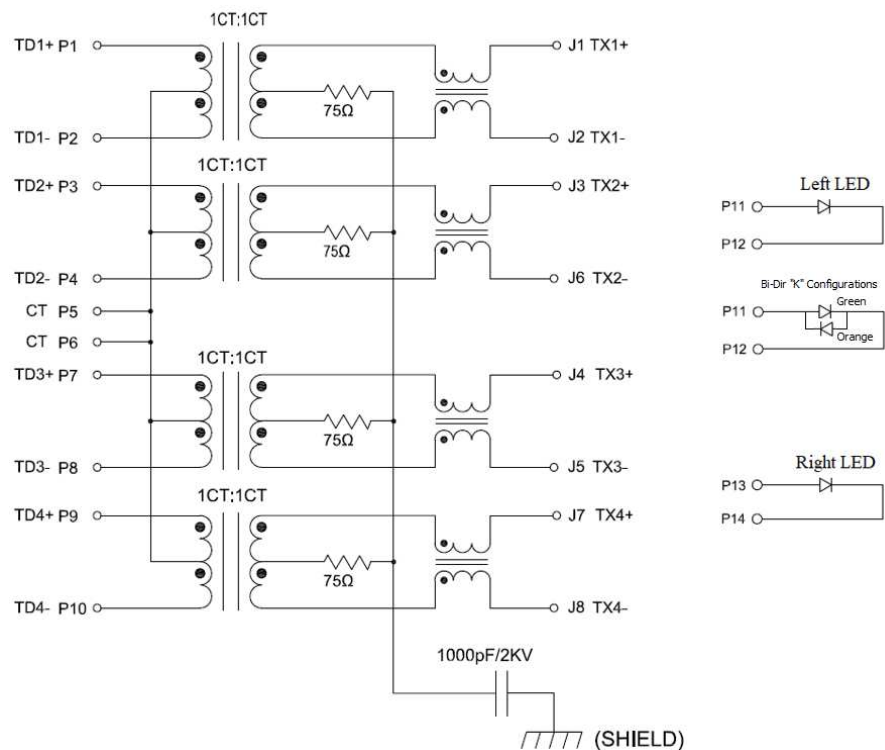


21.30 x 15.90 x 13.60mm
RoHS/RoHS II Compliant
MSL Level = 1

114 (100 Base-T & PoE)



502 (1000 Base-T)



RJ45, Single Port, 10/100/1G/5G Base-T Magnetics Module



ARJM11 Series

Request Samples

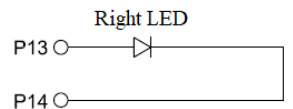
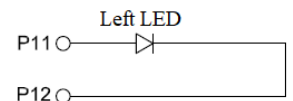
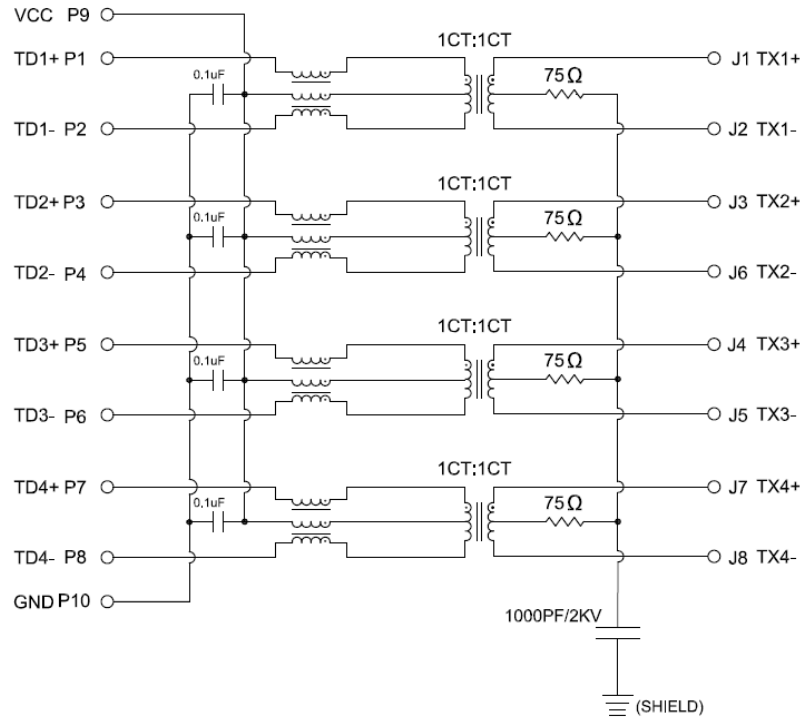


Check Inventory

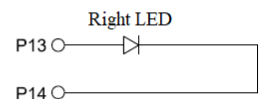
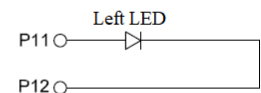
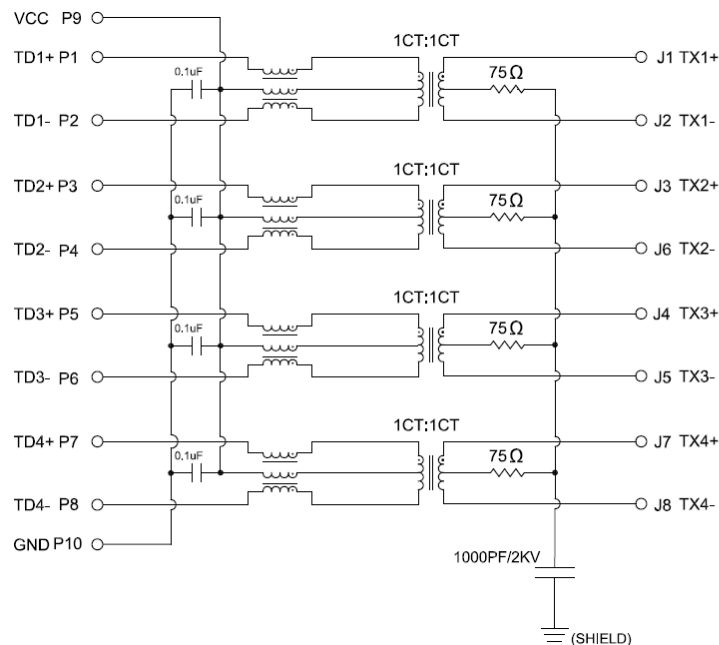


21.30 x 15.90 x 13.60mm
RoHS/RoHS II Compliant
MSL Level = 1

805 (2.5G Base-T)



809 (2.5G Base-T)
811 (5G Base-T)



5101 Hidden Creek Ln Spicewood TX 78669
Phone: 512-371-6159 | Fax: 512-351-8858
For terms and conditions of sales, please visit:
www.abracon.com

REVISED: 04-08-25

ABRACON IS
ISO9001-2015
CERTIFIED

RJ45, Single Port, 10/100/1G/5G Base-T Magnetics Module



ARJM11 Series

Request Samples



Check Inventory



21.30 x 15.90 x 13.60mm
RoHS/RoHS II Compliant
MSL Level = 1

LED SPECIFICATIONS FOR ALL SCHEMATICS 20mA Forward Current

Color	Green	Yellow	Orange
Wavelength	565nm Typ	585nm Typ	605nm Typ
Forward Voltage	2.2V Typ	2.1V Typ	2.1V Typ

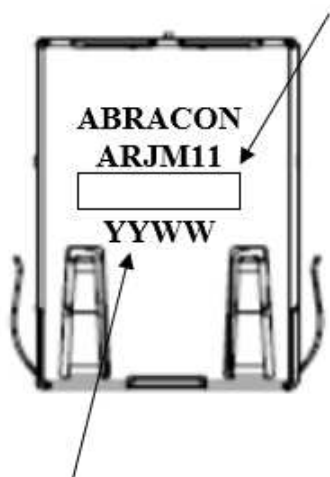
Device Marking

Part number excluding packaging
characters “-T”

XX-XXX-XX-XXX

e.g.

A1-009-AB-EW2



YY: Year: E.g. 21 for 2021

WW: Week: E.g. 05 for
the 5th week of the year.

RJ45, Single Port, 10/100/1G/5G Base-T Magnetics Module



ARJM11 Series

Request Samples



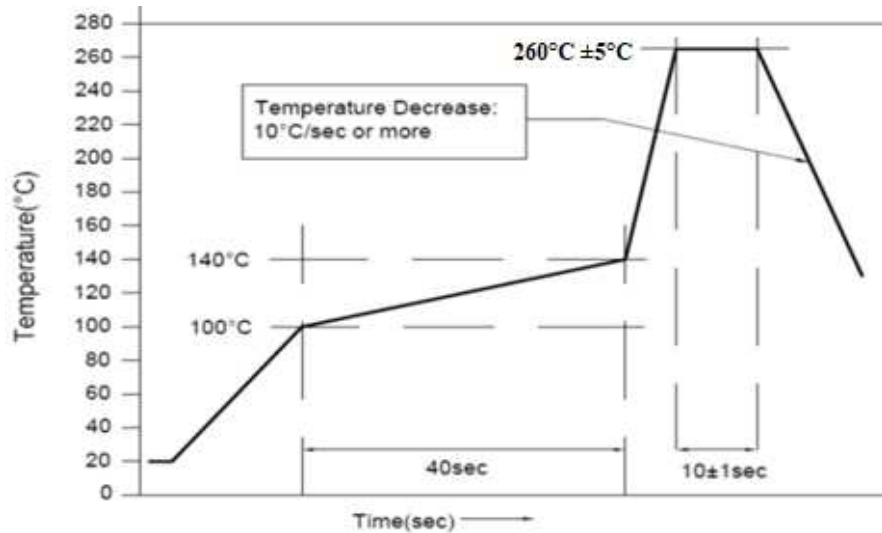
Check Inventory



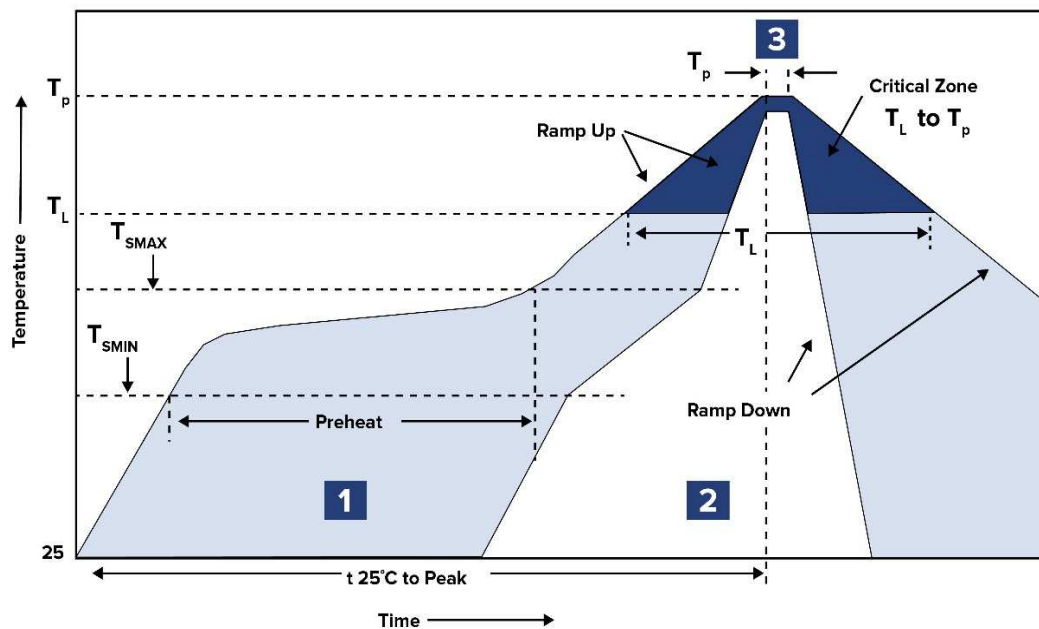
21.30 x 15.90 x 13.60mm
RoHS/RoHS II Compliant
MSL Level = 1

Soldering Profile

Wave Method



Reflow Method



Zone	Description	Temperature	Times
1	Preheat	$T_{SMIN} \sim T_{SMAX} = 150^\circ\text{C} \sim 180^\circ\text{C}$	120 ~ 180 sec.
2	Reflow	$T_L = 217^\circ\text{C}$	60 ~ 150 sec.
3	Peak heat	$T_p = 260^\circ\text{C} \pm 5^\circ\text{C}$	10 sec. MAX

RJ45, Single Port, 10/100/1G/5G Base-T Magnetics Module



ARJM11 Series

Request Samples



Check Inventory



21.30 x 15.90 x 13.60mm
RoHS/RoHS II Compliant
MSL Level = 1

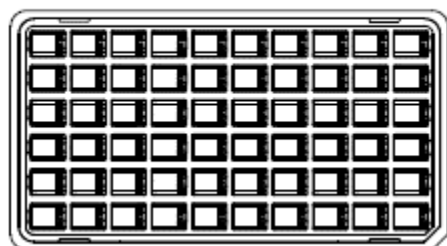
Packaging

Bulk/Tray (50pcs/tray)

Format A – 40 trays/carton, Weight: 5.7g/pc, Carton Gross Weight: 15.2Kg

Format B – 24 trays/carton, Weight: 5.7g/pc, Carton Gross Weight: 9.0Kg

Bottom Tray



Top Tray

