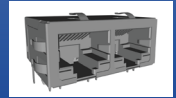


# RJ45 1x2 Multiport 100/1000/2.5G/5G Base-T



ARJM12



31.2 x 21.3 x 13.6 mm  
 UL Certification Number: E503350  
 RoHS/RoHS II Compliant  
 MSL = 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

- 10, 100, 1000, 2.5G and 5G Base-T Ethernet
- Servers, switches and routers
- Set top boxes
- VoIP & IP communications
- Video surveillance
- Broadcast video
- Industrial computers & robotics

## Options and Part Identification

ARJM12 - - - - -

Mechanical Series	Schematics	Left LED Color	Right LED Color	Operating Temperature	Gold Plating
A1: Tab down, w/EMI Fingers	009: 100 Base-T	N: No LED	N: No LED	CW: 0 ~ 70 °C	2: 6u"
A2: Tab down, w/o EMI Fingers	502: 1000 Base-T	A: Green	A: Green	EW: -40 ~ 85 °C	
	805: 2.5G Base-T	B: Yellow	B: Yellow		
	811: 5G Base-T				

\*See Mechanical Dimension Section for Details

\*See Schematic Section for Details

### Example Configurations

**ARJM12 A1-009 -AB- CW2**

(1 x 2, Tab down, w/ EMI, 100Base-T, w/LED G/Y, commercial grade, 6µ" Gold)

\*For additional schematics, gold plating, and LED configurations, contact Abracon Sales.

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## Electrical Specifications

Parameters	Minimum	Typical	Maximum	Units	Notes
Turn Ratio ( $\pm 3\%$ )	1CT:1CT				100kHz, 0.1V
Inductance	350			$\mu\text{H}$	100kHz, 0.1V, 8mADC
	200				For 2.5G Base-T only
	160				For 5G Base-T only
Leakage Inductance			0.5	$\mu\text{H}$	100kHz, 0.1V
			0.3		For 2.5G Base-T and 5G Base-T
DC Resistance			1.5	$\Omega$	
Hipot	2250			VDC	1mA Max Complies with IEEE 802.3
Operating Temperature	-40		+85	$^{\circ}\text{C}$	See options
Storage Temperature	-40		+85	$^{\circ}\text{C}$	
<b>100 Base-T</b>					
Insertion Loss	-1.1			dB	0.5-100MHz
Return Loss			-18	dB	0.5-30MHz
			$-18+20\log(f/30)^*$		30.1-60MHz
			-12		60.1-80MHz
Crosstalk			-35	dB	0.5-40MHz
			$-33+20\log(f/50)^*$		40.1-100MHz
CMRR			-30	dB	0.5-100MHz
<b>1000 Base-T</b>					
Insertion Loss	-1.1			dB	0.5-100MHz
Return Loss			-18	dB	0.5-40MHz
			$-12+20\log(f/80)^*$		40.1-100MHz
Crosstalk			-35	dB	0.5-40MHz
			$-33+20\log(f/50)^*$		40.1-100MHz
CMRR			-30	dB	0.5-100MHz
<b>2.5G Base-T</b>					
Insertion Loss	-0.5			dB	1-50MHz
	-1.0				50-125MHz
Return Loss			-20	dB	1-40MHz
			$-20+15\log(f/40)^*$		40-200MHz
Crosstalk			-30	dB	25-125MHz
<b>5G Base-T</b>					
Insertion Loss	-0.5			dB	1-50MHz
	-1.0				50-125MHz
	-2.0				125-250MHz
Return Loss			-20	dB	1-40MHz
			$-20+15\log(f/40)^*$		40-250MHz
Crosstalk			-30	dB	1-125MHz
			-25		125-250MHz

\*f represents the test frequency specified in MHz

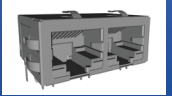


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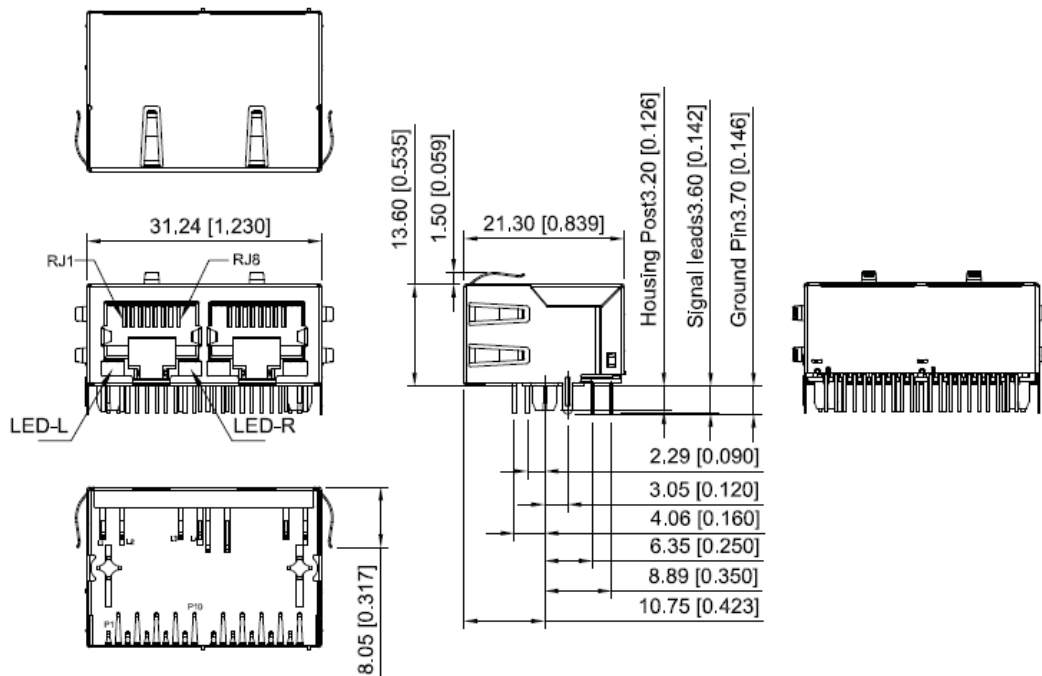
ARJM12



31.2 x 21.3 x 13.6 mm  
UL Certification Number: E503350  
RoHS/RoHS II Compliant  
MSL = 1

## Mechanical Dimensions

A1: 1 x 2, Tab down, w/ EMI Fingers



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

# RJ45 1x2 Multiport 100/1000/2.5G/5G Base-T



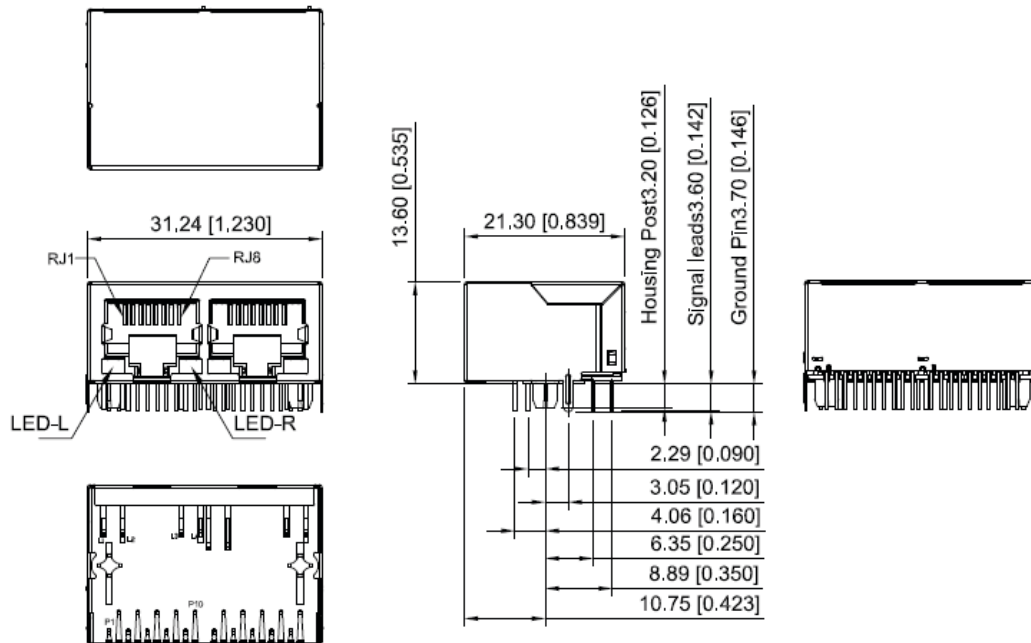
ARJM12



31.2 x 21.3 x 13.6 mm  
UL Certification Number: E503350  
RoHS/RoHS II Compliant  
MSL = 1

## Mechanical Dimensions

A2: 1 x 2, Tab down, w/o EMI Finger



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

# RJ45 1x2 Multiport 100/1000/2.5G/5G Base-T



ARJM12

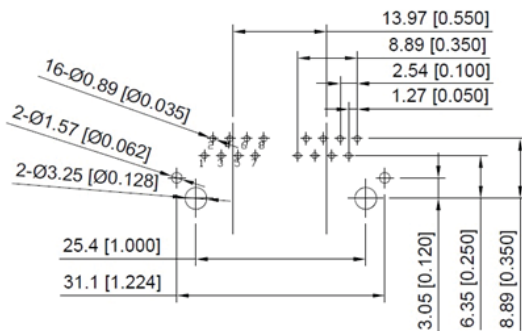


31.2 x 21.3 x 13.6 mm  
 UL Certification Number: E503350  
 RoHS/RoHS II Compliant  
 MSL = 1

## Mechanical Dimensions

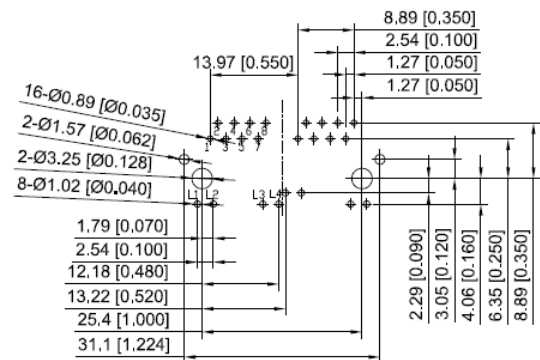
### Recommended Land Pattern

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



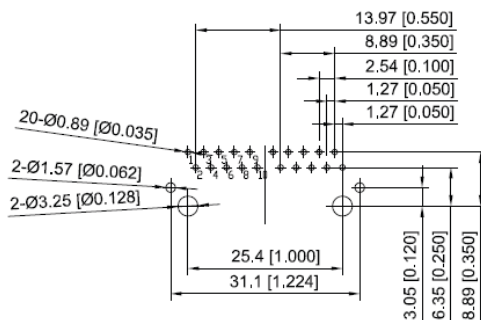
Top View Customer Board (COMP Side)

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



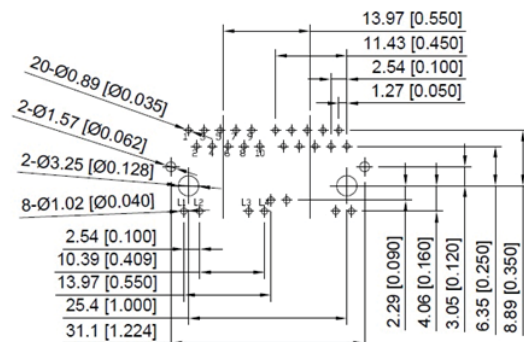
Top View Customer Board (COMP Side)

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



Top View Customer Board (COMP Side)

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



Top View Customer Board (COMP Side)

Dimensions: mm[inch]

# RJ45 1x2 Multiport 100/1000/2.5G/5G Base-T



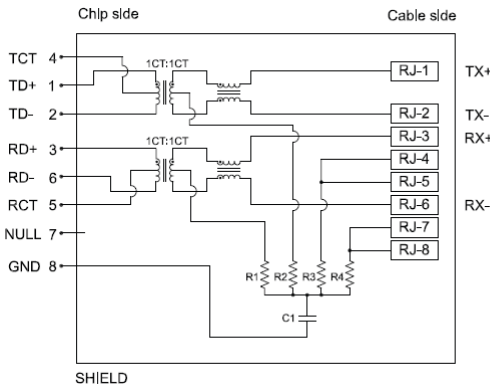
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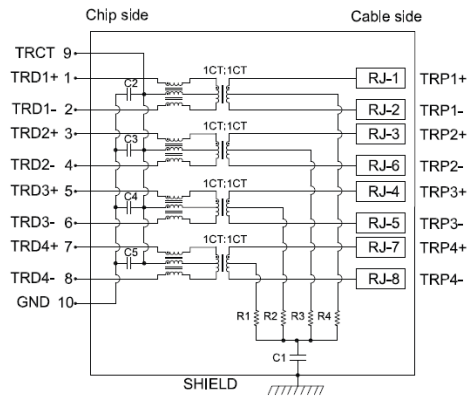
## Schematic

### 009 (100 Base-T)



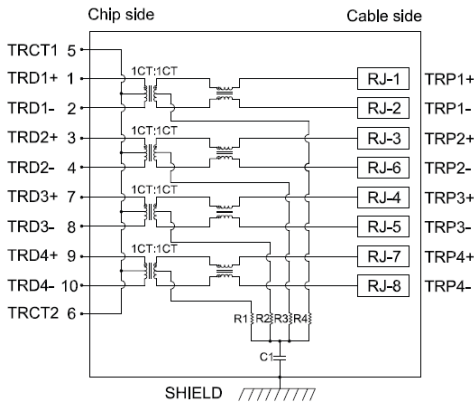
Note:  
 R1-R4=75 OHMS, Resistors.  
 C1=2KV 1000pF, Capacitor.

### 805 (2.5G Base-T)



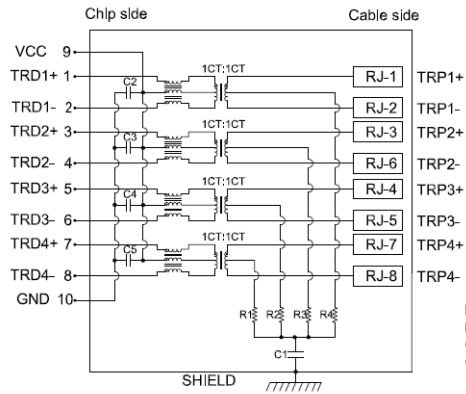
Note:  
 R1-R4=75 OHMS, Resistors.  
 C1=2KV 1000pF, Capacitor.  
 C2-C5=100V 100nF, Capacitor.

### 502 (1000 Base-T)



Note:  
 R1-R4=75 OHMS, Resistors.  
 C1=2KV 1000pF, Capacitor.

### 811 (5G Base-T)



Note:  
 R1-R4=75 OHMS, Resistors.  
 C1=2KV 1000pF, Capacitor.  
 C2-C5=100V 100nF, Capacitor.

Contact Abracon Sales for additional configurations.



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31.2 x 21.3 x 13.6 mm  
UL Certification Number: E503350  
RoHS/RoHS II Compliant  
MSL = 1

## Materials

### Housing:

Material:  
PBT, UL94V-0  
Standard Color: Black

### Insert:

Material:  
PBT, UL94V-0  
Contact Material: Phosphor Bronze  
Plating (1): Nickel  
Plating (2): Gold, 6u"

### Metal Shell:

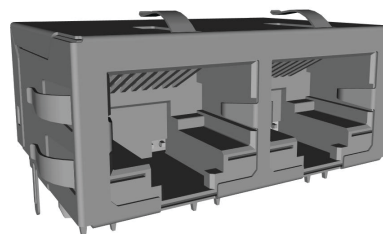
Material: Brass  
Plating (1): Nickel

### Contact Pin:

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

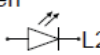

### LED:

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



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

**LED Specification. @20mA Forward Current  
AB (Left: Green – Right: Yellow) :**

LED-L	LED-R
Green L1 →  L2	Yellow L3 →  L4

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

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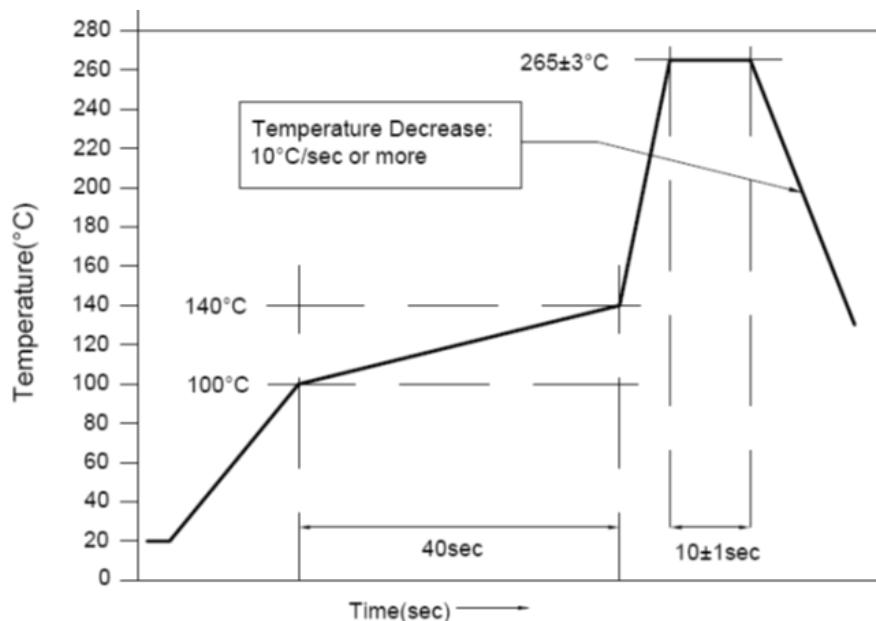


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## Wave Soldering Profile



## Packaging

Series	Approximate Weight / Pc	Approximate Weight / Carton	Qty / Carton (pcs)	Carton Dimensions (LxWxH)
ARJM12	10.82 g	5040 g	350	340 x 215 x 275 mm

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