

RJ45 2x1 Multiport 100/1000/2.5G/5G Base-T



ARJM21



17.1 x 28.1 x 25.5 mm
UL Certification Number: E503350
RoHS/RoHS II Compliant
MSL = 1

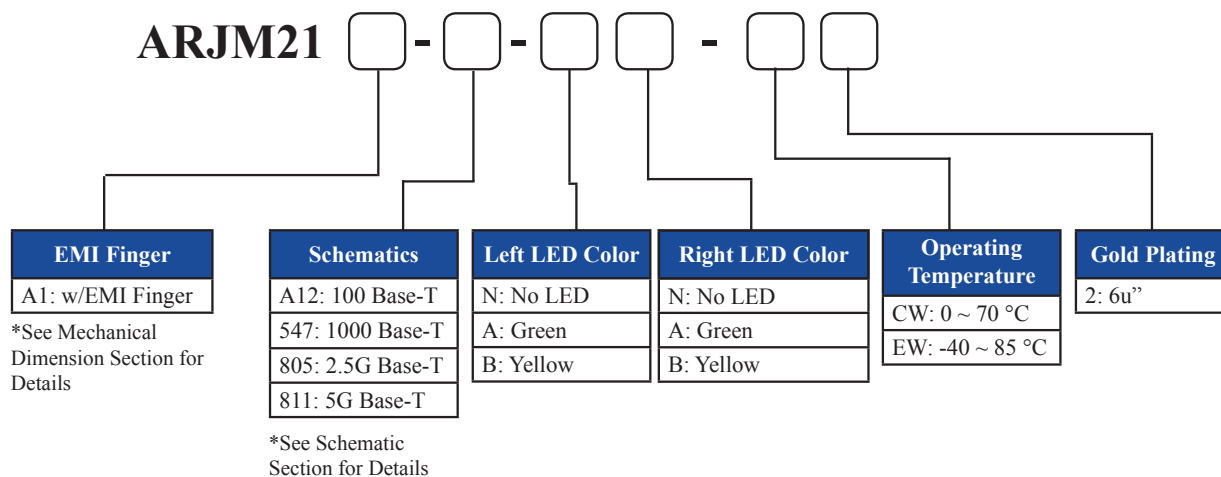
Features

- 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



Example Configurations

ARJM21 A1-547 -AB- CW2

(2 x 1, w/ EMI, 1000Base-T, w/LED G/Y, commercial grade, 6µ" Gold)

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

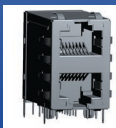


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Electrical Specifications

Parameters	Minimum	Typical	Maximum	Units	Notes
Turn Ratio ($\pm 3\%$)	1CT:1CT				100kHz, 0.1V
Inductance	350			μH	100kHz, 0.1V, 8mADC
	200				For 2.5G Base-T only
	160				For 5G Base-T only
Leakage Inductance			0.5	μH	100kHz, 0.1V
			0.3		For 2.5G Base-T and 5G Base-T
DC Resistance			1.5	Ω	
Hipot	2250			VDC	1mA Max Complies with IEEE 802.3
Operating Temperature	-40		+85	$^{\circ}\text{C}$	See options
Storage Temperature	-40		+85	$^{\circ}\text{C}$	
100 Base-T					
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
1000 Base-T					
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
2.5G Base-T					
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
5G Base-T					
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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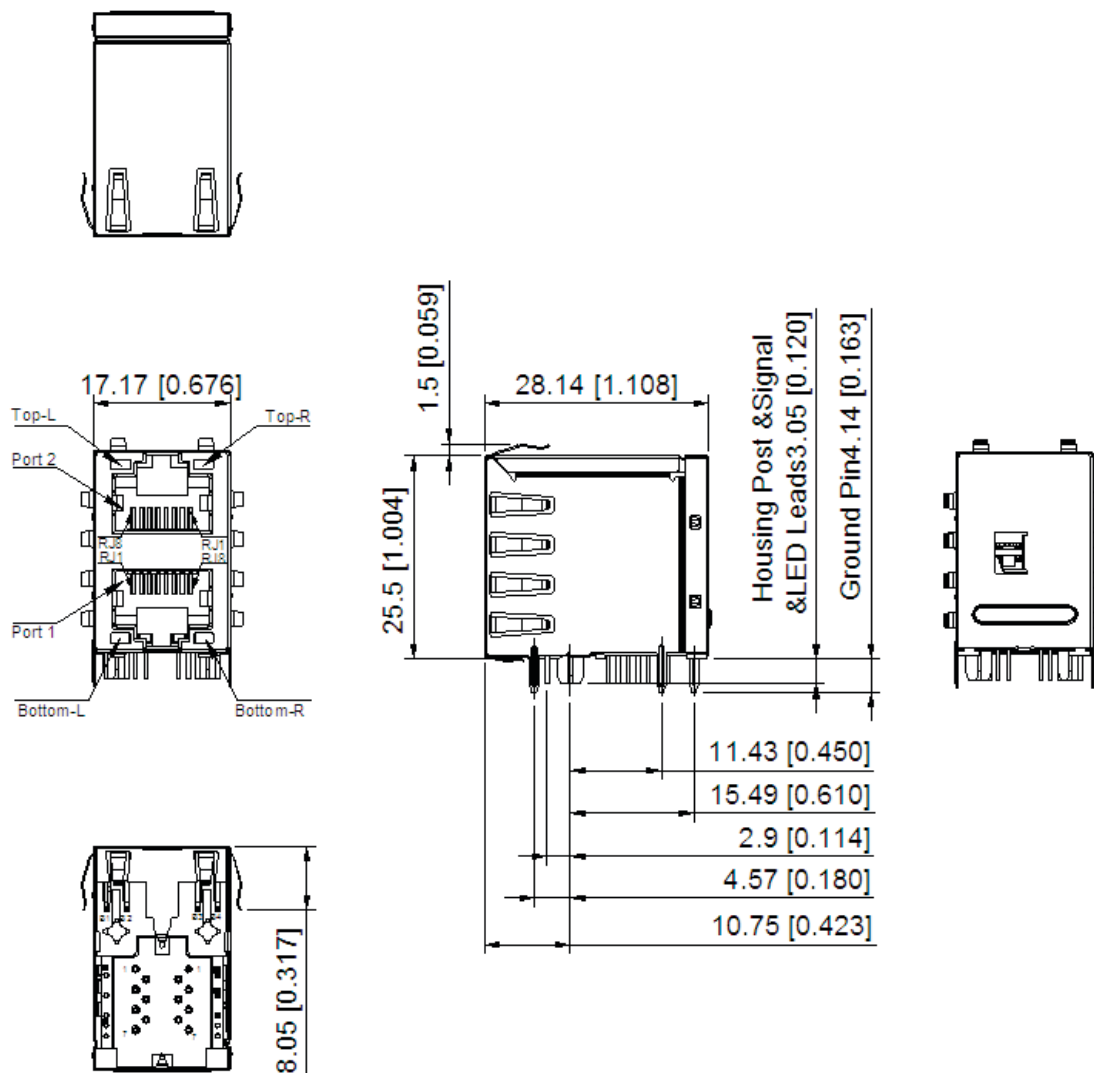
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Mechanical Dimensions

A1: 2 x 1, w/ EMI Fingers



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

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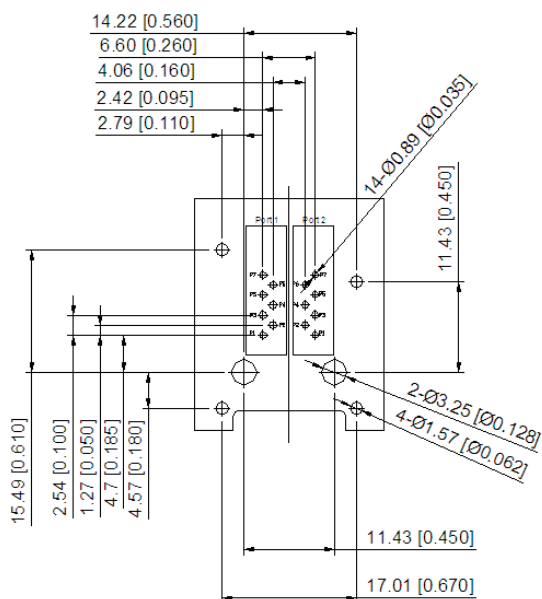


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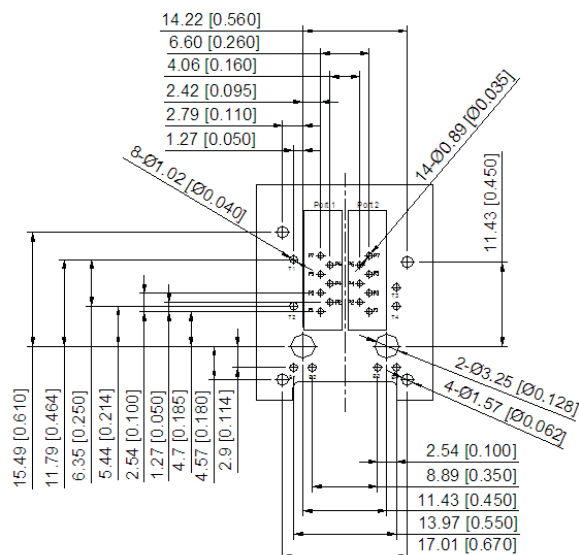
Mechanical Dimensions

Recommended Land Pattern

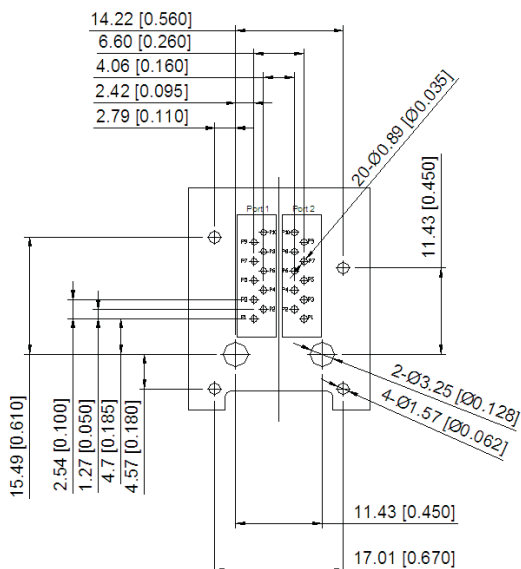
8 Pins, no LED
For 100 Base-T



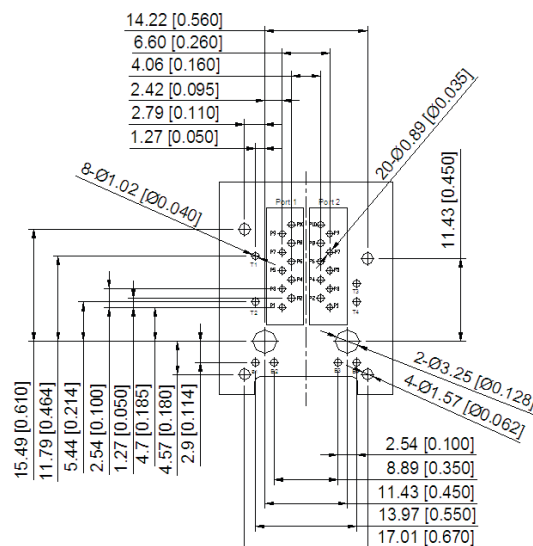
8 Pins, w/ LED
For 100 Base-T



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



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



Dimensions: mm[inch]

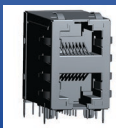


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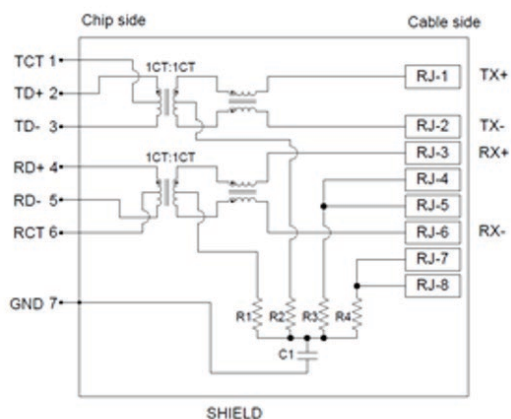
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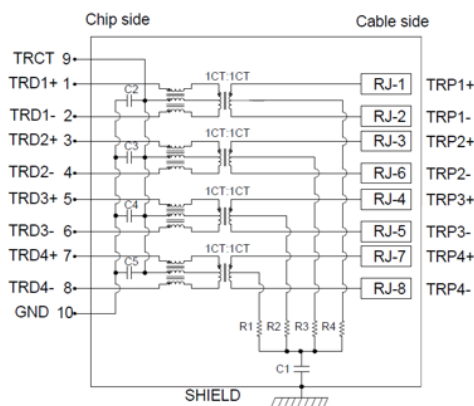
Schematic

A12 (100 Base-T)



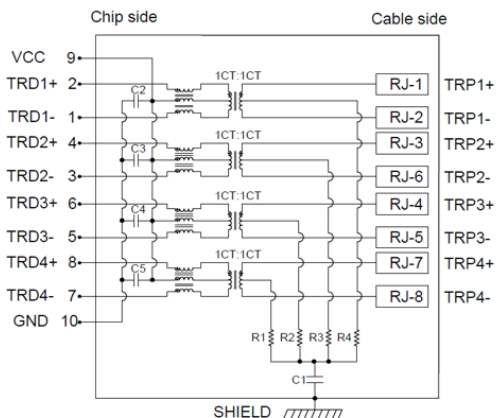
Note:
R1-R4=75 OHMS, Resistors.
C1=2KV 1000pF, Capacitor.

805 (2.5G Base-T)



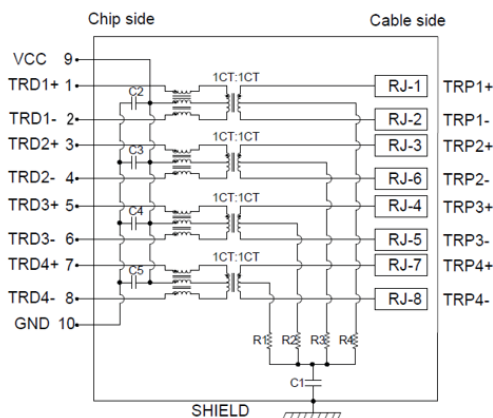
Note:
R1-R4=75 OHMS, Resistors.
C1=2KV 1000pF, Capacitor.
C2-C5=100V 100nF, Capacitor.

547 (1000 Base-T)



Note:
R1-R4=75 OHMS, Resistors.
C1=2KV 1000pF, Capacitor.
C2-C5=50V 470pF, Capacitor.

811 (5G Base-T)



Note:
R1-R4=75 OHMS, Resistors.
C1=2KV 1000pF, Capacitor.
C2-C5=50V 100nF, Capacitor.

Contact Abracon Sales for additional configurations.

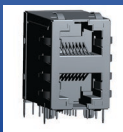


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Materials

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:

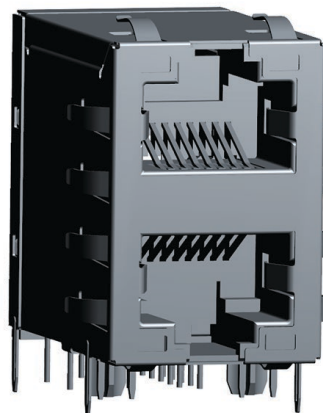
Material: Brass
Plating (1): Nickel

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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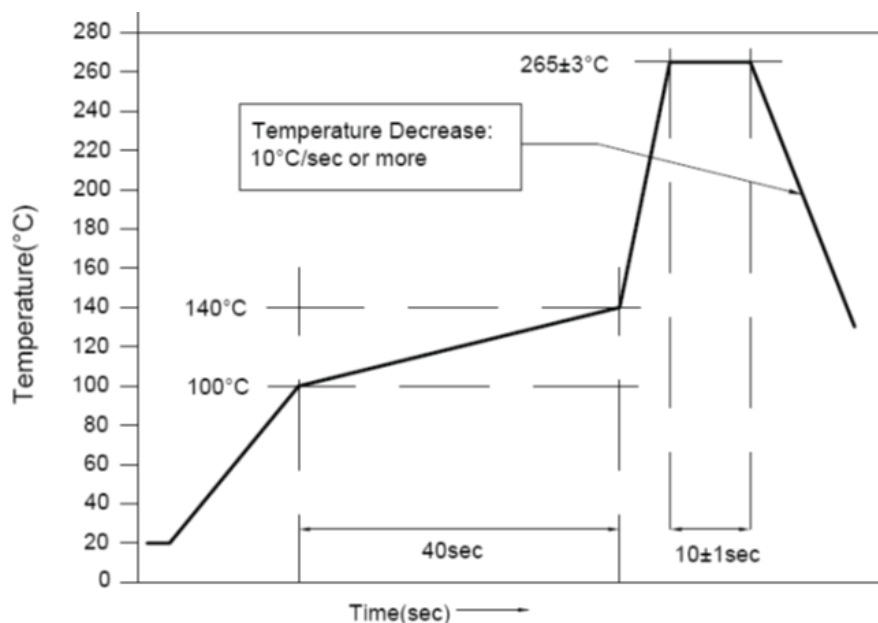


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Wave Soldering Profile



Packaging

Series	Approximate Weight / Pc	Approximate Weight / Carton	Qty / Carton (pcs)	MOQ (pcs)	Carton Dimensions (LxWxH)
ARJM21	13.50 g	5370 g	320	640	340 x 215 x 275mm

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