

### **ARJM11 Series**

Request Samples (>)



Check Inventory (>)



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
	350				100kHz, 0.1V, 8mADC
Inductance	200			μН	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 Ba	ise-T		
Insertion Loss			-1.0	dB	0.3-100MHz
	-18				1-30MHz
Return Loss	-13			dB	30-60MHz
	-10				60-100MHz
Crosstalk	-30			dB	1-1000MHz
CMRR	-30			dB	1-100MHz
		100 Base-T l	PoE, PoE+		
Insertion Loss			-1.1	dB	0.5-100MHz
	-18				0.5-30MHz
Return Loss	-15			dB	30-60MHz
	-12				60-80MHz
Crosstalk	-35			dB	0.5-40MHz
Closstaik	-30			uБ	40-100MHz
CMRR	-30			dB	0.5-100MHz
DC Resistance			1.0	Ω	Secondary (cable) side
POE Balanced			350	mA	@57VDC continuous
DC line current			500	IIIA	@57VDC for 200ms
POE+ Balanced			600	mA	@57VDC continuous
DC line current			720	III/X	@57VDC for 200ms



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

ABRACON IS **REVISED: 03-08-24** ISO9001-2015 CERTIFIED



### **ARJM11 Series**

Request Samples (>)



Check Inventory (>)



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

Parameters	Minimum	Typical	Maximum	Units	Notes
		1000 B	ase-T		
Insertion Loss	-		-1.1	dB	0.3-100MHz
	-16				1-30MHz
Return Loss	-13			dB	30-60MHz
	-10				60-100MHz
Crosstalk	-30			dB	1-100MHz
CMRR	-30			dB	1-100MHz
		2.5G B	ase-T		
т ,, т			-1.0	dB -	1-50MHz
Insertion Loss			-1.5		50-125MHz
D 4 I	-18			dB	1-40MHz
Return Loss	-18+15log(f/40)†				40-250MHz
C4-11-	-35			dB	1-40MHz
Crosstalk	-35+15log(f/40)†			ав	40-125MHz
CMRR	-30			dB	1-200MHz
		5G Ba	se-T		
	-0.5				1-50MHz
т ", т	-1.0			10	50-125MHz
Insertion Loss	-2.0			dB	125-200MHz
	-2.5			=	200-250MHz
D -4 I	-20			4D	1-50MHz
Return Loss	-20+15log(f/40)†			dB	50-250MHz
C	-25			4D	1-125MHz
Crosstalk	-20			dB	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** 





### **ARJM11 Series**

Request Samples

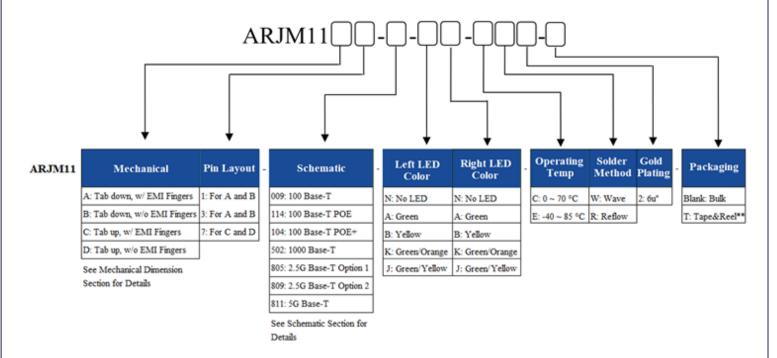


Check Inventory



21.30 x 15.90 x 13.60mm 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.





### **ARJM11 Series**

Request Samples ()



Check Inventory (>)



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

## **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	$0^{\circ}\text{C} \sim 70^{\circ}\text{C}$	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





### **ARJM11 Series**

Request Samples (>)



Check Inventory (>)



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

## **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	$0^{\circ}\text{C} \sim 70^{\circ}\text{C}$	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 $\sim 85$ °C	Wave	A
ARJM11B1-805-KB-CW2	2.5G Base-T	Tab Down	G/O : Y	$0^{\circ}\text{C} \sim 70^{\circ}\text{C}$	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





### **ARJM11 Series**

Request Samples (>)



Check Inventory (>)



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

### Materials

1. Housing:

Material:

PBT, UL94V-0 Standard Color: Black

3. Insert:

Material:

PBT, UL94V-0

Contact Material: Phosphor Bronze

Plating (1): Nickel Plating (2): Gold, 6u"

5. Metal Shell:

Material: Brass Plating (1): Nickel 2. Contact Pin:

Material: Phosphor Bronze

Plating (1): Nickel Plating (2): 100%Sn

4. 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.





### **ARJM11 Series**

Request Samples



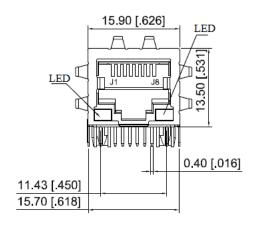
Check Inventory

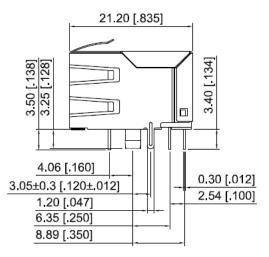


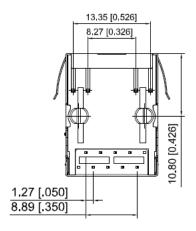
21.30 x 15.90 x 13.60mm RoHS/RoHS II Compliant MSL Level = 1

### **Mechanical Specifications**

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

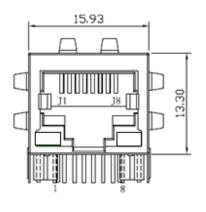


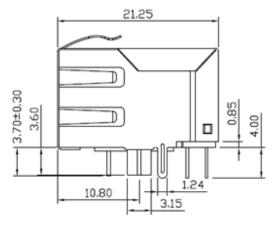


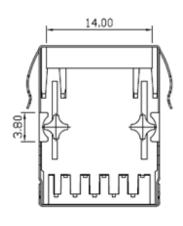


Dimensions: mm[inch] (Unless otherwise specified, all tolerances are  $\pm 0.25[0.010]$ )

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







Dimensions are in mm. Tolerances are  $\pm 0.25$ mm unless noted otherwise.



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: 03-08-24** 



### **ARJM11 Series**

Request Samples

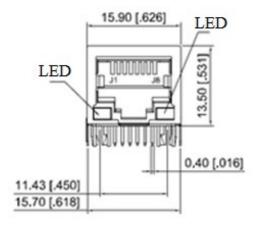


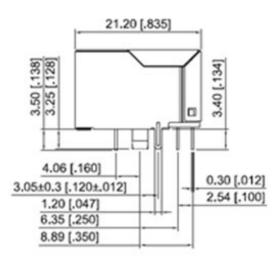
Check Inventory

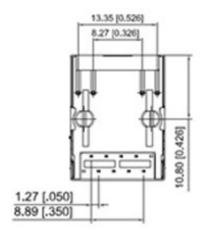


21.30 x 15.90 x 13.60mm RoHS/RoHS II Compliant MSL Level = 1

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

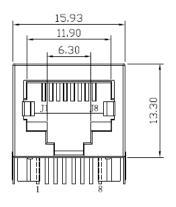


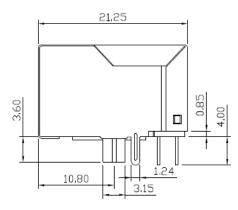


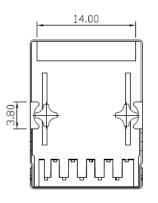


Dimensions: mm[inch] (Unless otherwise specified, all tolerances are  $\pm 0.25[0.010]$ )

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







Dimensions are in mm. Tolerances are  $\pm 0.25$ mm unless noted otherwise.





### **ARJM11 Series**

Request Samples

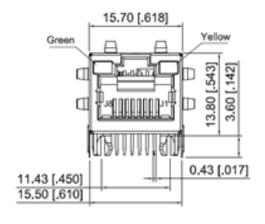


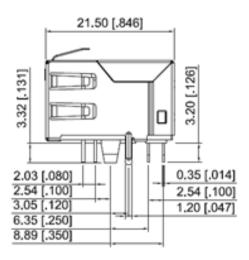
Check Inventory

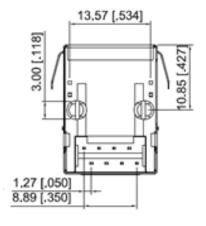


21.30 x 15.90 x 13.60mm RoHS/RoHS II Compliant MSL Level = 1

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

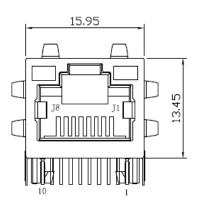


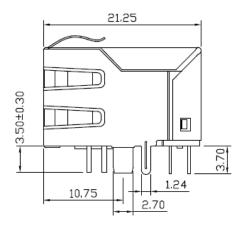


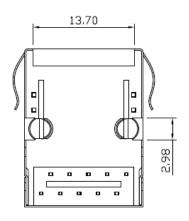


Dimensions: mm[inch] (Unless otherwise specified, all tolerances are  $\pm 0.25[0.010]$ )

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







Dimensions are in mm. Tolerances are  $\pm 0.25$ mm unless noted otherwise.





### **ARJM11 Series**

Request Samples

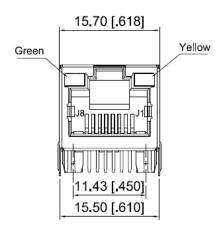


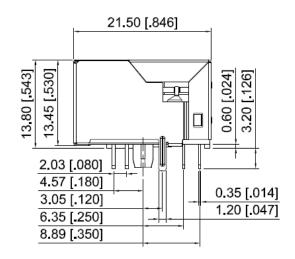
Check Inventory

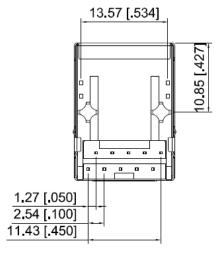


21.30 x 15.90 x 13.60mm RoHS/RoHS II Compliant MSL Level = 1

### D: Tab Up, w/o EMI Fingers (Wave)

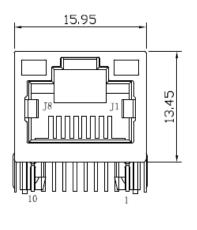


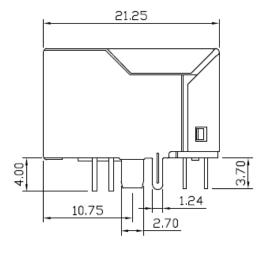


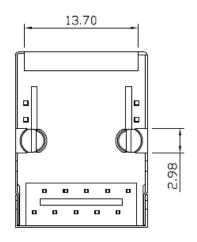


Dimensions: mm[inch] (Unless otherwise specified, all tolerances are  $\pm 0.25[0.010]$ )

### D: Tab Up, w/o EMI Fingers (Reflow)







Dimensions are in mm. Tolerances are  $\pm 0.25$ mm unless noted otherwise.



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: 03-08-24** 



### **ARJM11 Series**

Request Samples



Check Inventory

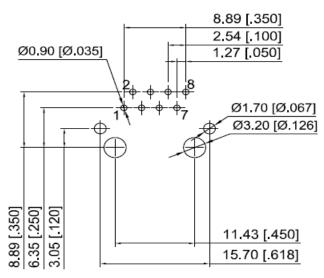


21.30 x 15.90 x 13.60mm RoHS/RoHS II Compliant MSL Level = 1

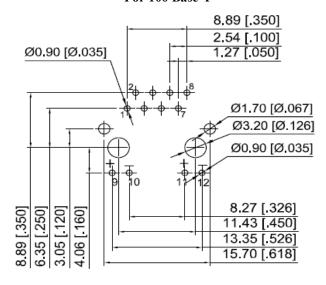
### **Recommended Layout**

## Pin Layout = 1 (Horizontal LEDs/ No LEDs)

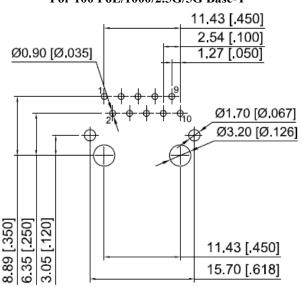
8 Pins, no LED For 100 Base-T



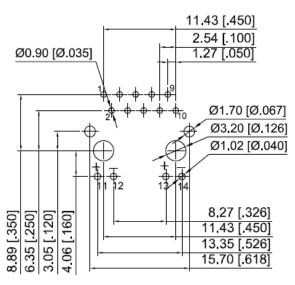
8 Pins, w/ LED For 100 Base-T



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  $\pm 0.05[0.002]$ mm unless noted otherwise.



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: 03-08-24** 



### **ARJM11 Series**

Request Samples (>)



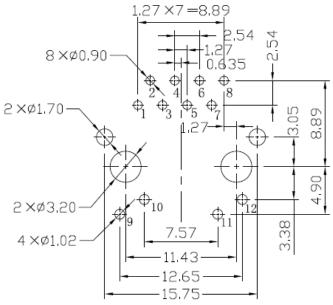
Check Inventory (>)



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  $\pm 0.05$ mm unless noted otherwise.





### **ARJM11 Series**

Request Samples (>)



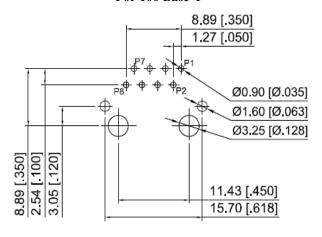
Check Inventory



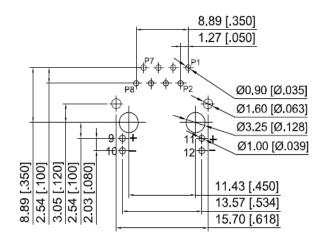
21.30 x 15.90 x 13.60mm **RoHS/RoHS II Compliant** MSL Level = 1

### Pin Layout = 7 (Vertical LEDs/ No LEDs)

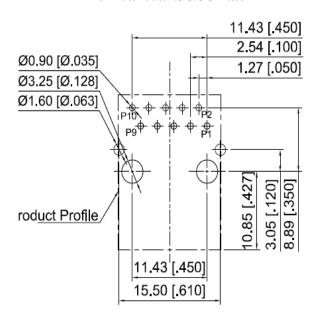
8 Pins, no LED For 100 Base-T



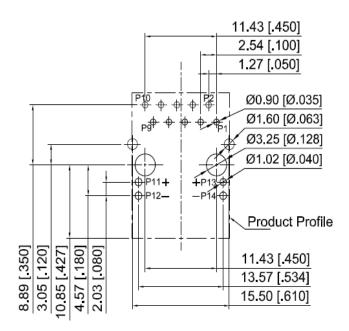
8 Pins, w/ LED For 100 Base-T



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  $\pm 0.05$ mm unless noted otherwise.





### **ARJM11 Series**

Request Samples

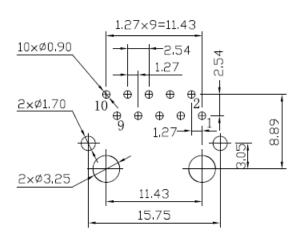


Check Inventory (>)

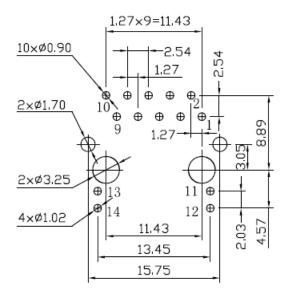


21.30 x 15.90 x 13.60mm **RoHS/RoHS II Compliant** MSL Level = 1

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  $\pm 0.05$ mm unless noted otherwise.





### **ARJM11 Series**

Request Samples (>)



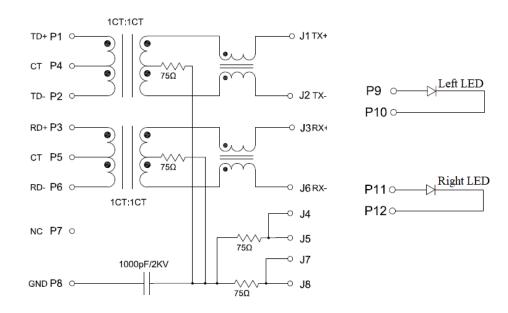
Check Inventory (>)



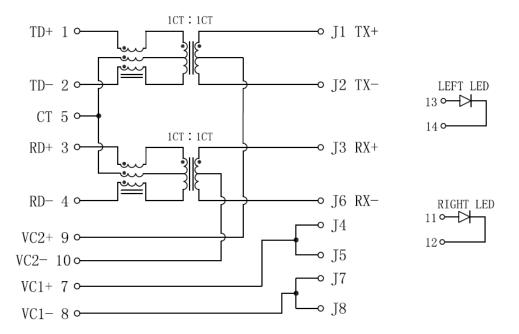
21.30 x 15.90 x 13.60mm **RoHS/RoHS II Compliant** MSL Level = 1

### **Schematic**

009 (100 Base-T)



104 (100 Base-T & PoE+)







### **ARJM11 Series**

Request Samples

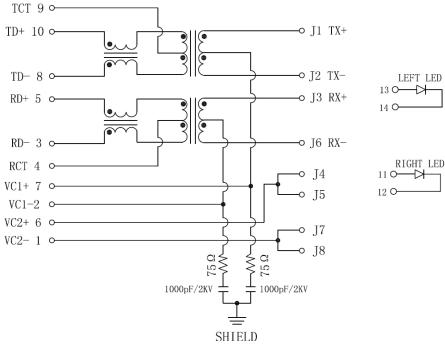


Check Inventory (>)

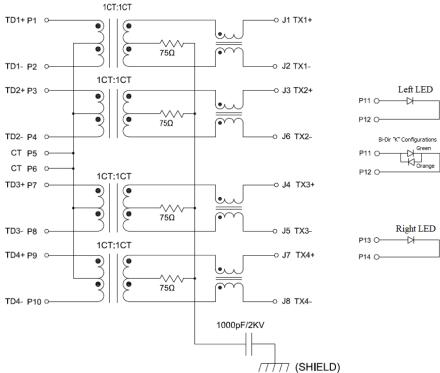


21.30 x 15.90 x 13.60mm **RoHS/RoHS II Compliant** MSL Level = 1

114 (100 Base-T & PoE)



502 (1000 Base-T)





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: 03-08-24** 



### **ARJM11 Series**

Request Samples

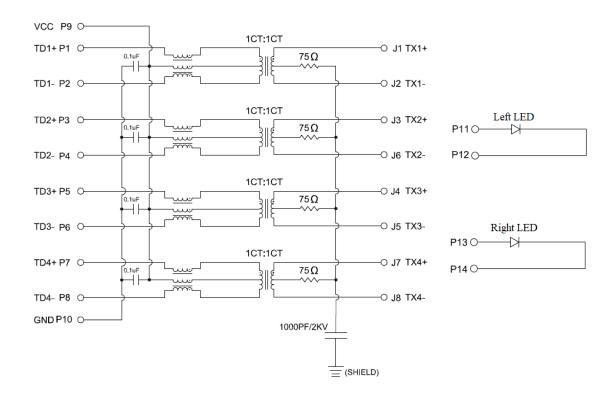


Check Inventory

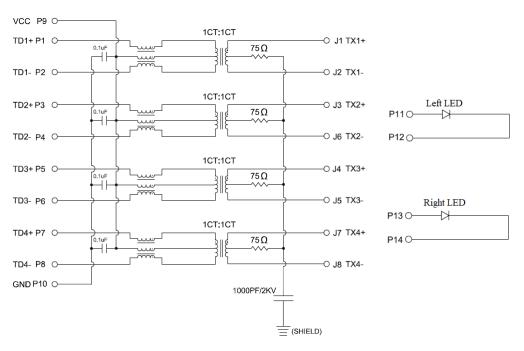


21.30 x 15.90 x 13.60mm RoHS/RoHS II Compliant MSL Level = 1

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: 03-08-24** 



### **ARJM11 Series**

Request Samples (>)



Check Inventory (>)



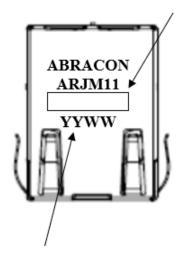
21.30 x 15.90 x 13.60mm **RoHS/RoHS II Compliant** MSL Level = 1

### **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.



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: 03-08-24** 



### **ARJM11 Series**

Request Samples



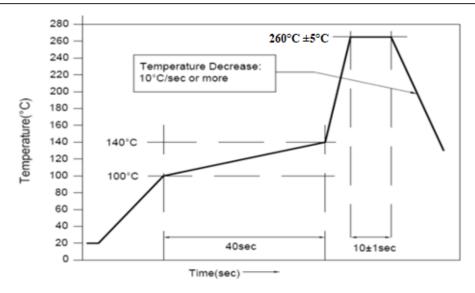
Check Inventory



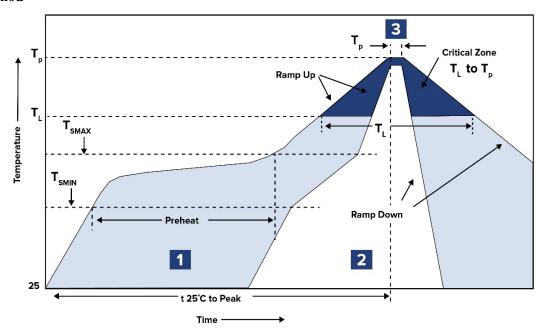
21.30 x 15.90 x 13.60mm RoHS/RoHS II Compliant MSL Level = 1

## **Soldering Profile**

#### **Wave Method**



#### **Reflow Method**



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





### **ARJM11 Series**

Request Samples (>)



Check Inventory (>)



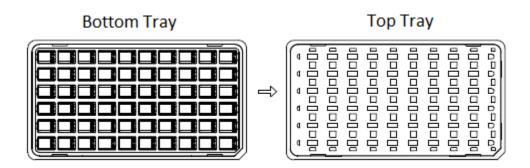
21.30 x 15.90 x 13.60mm **RoHS/RoHS II Compliant** MSL Level = 1

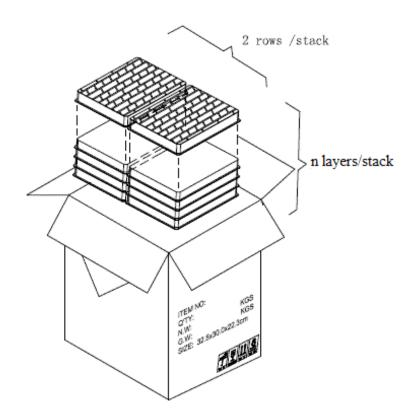
### **Packaging**

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







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: 03-08-24** 



### **ARJM11 Series**

Request Samples (>)



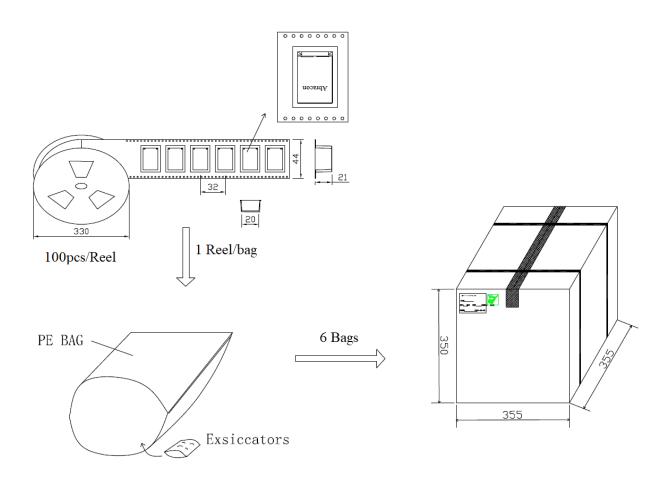
Check Inventory (>)



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

Tape & Reel (100pcs/reel)

Format C – 6 Reels/carton, Weight: 5.7g/pc, Carton Gross Weight: 7.0Kg



**Dimensions: mm** 

ATTENTION: Abracon LLC's products are Commercial-Off-The-Shelf (COTS, which are designed, intended and validated for use in commercial, industrial and automotive applications. The customer is responsible for testing and verifying the performance of an Abracon solution to meet their system-level requirements.

