

ECN/PCN No.: M1227

For Manufacturer			
<b>Product Description:</b>  <div style="text-align: center; color: blue;"> <b>RJ45, 1x2 Multi Port, 100/1000/2.5G/5G Base-T Magnetics Module</b> </div>	<b>Abracon Part Number / Part Series:</b>  <div style="text-align: center; color: blue;"> <b>ARJM12 series</b> </div>	<input type="checkbox"/> Documentation only <input checked="" type="checkbox"/> ECN <input type="checkbox"/> EOL	<input type="checkbox"/> Series <input checked="" type="checkbox"/> Part Number(s)
<b>Affected Revision:</b> Initial revision	<b>New Revision:</b> A	<b>Application:</b>	<input type="checkbox"/> Safety <input checked="" type="checkbox"/> Non-Safety

**Prior to Change:**

**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
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	°C	See options
Storage Temperature	-40		+85	°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

**Part Number Identification**

ARJM12  -  -   -

**ARJM12**

Mechanical Series
A1: Tab down, w/ EMI Fingers
A2: Tab down, w/o EMI Fingers

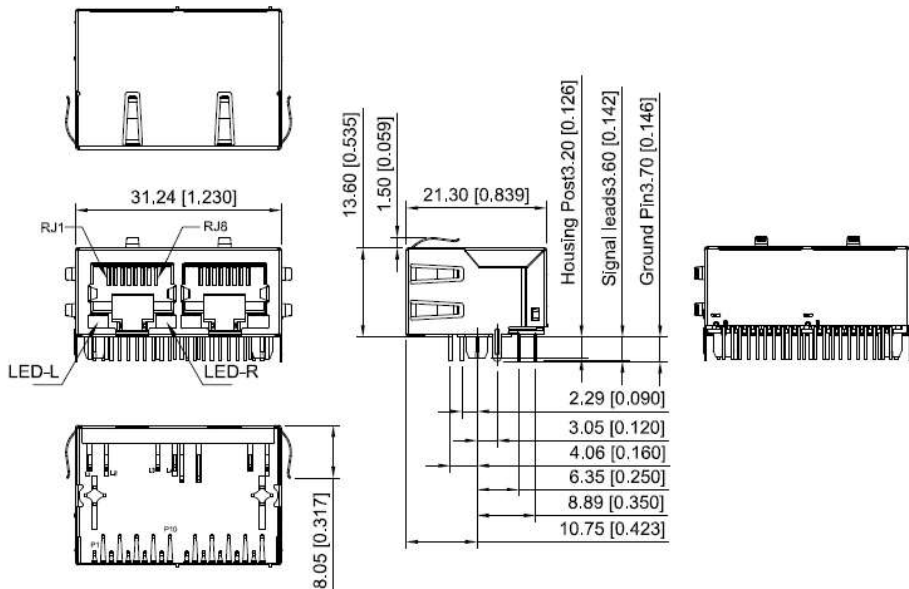
See Mechanical Dimension Section for Details

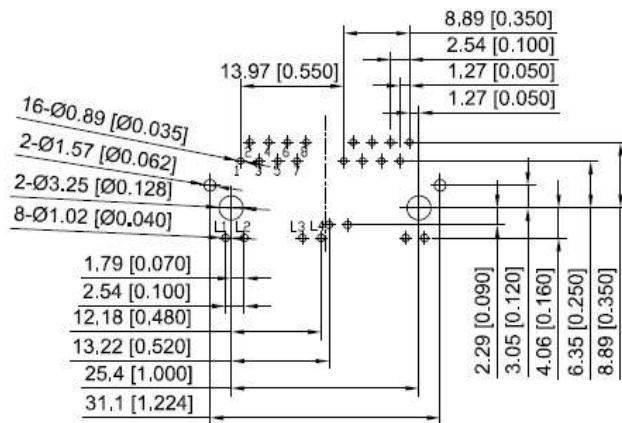
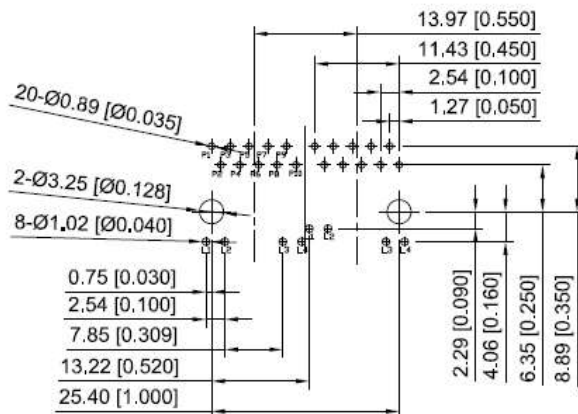
Schematics
009: 100 Base-T
502: 1000 Base-T
805: 2.5G Base-T
811: 5G Base-T

See Schematic Section for Details

Left LED color	Right LED color
N: No LED	N: No LED
A: Green	A: Green
B: Yellow	B: Yellow

Operating Temperature	Gold Plating
CW: 0 ~ 70 °C	2: 6u"
EW: -40 ~ 85 °C	

**Mechanical Dimensions**
**A1: 1 x 2, w/ EMI Fingers**


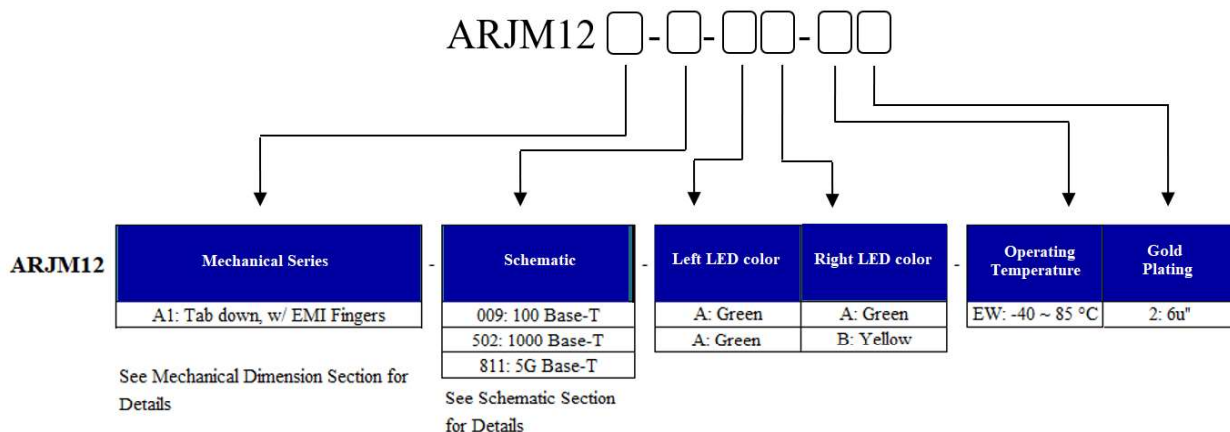
**Recommended layout**
**8-pins with LEDs**

**Top View Customer Board (COMP Side)**
**10-pins with LEDs**

**Top View Customer Board (COMP Side)**

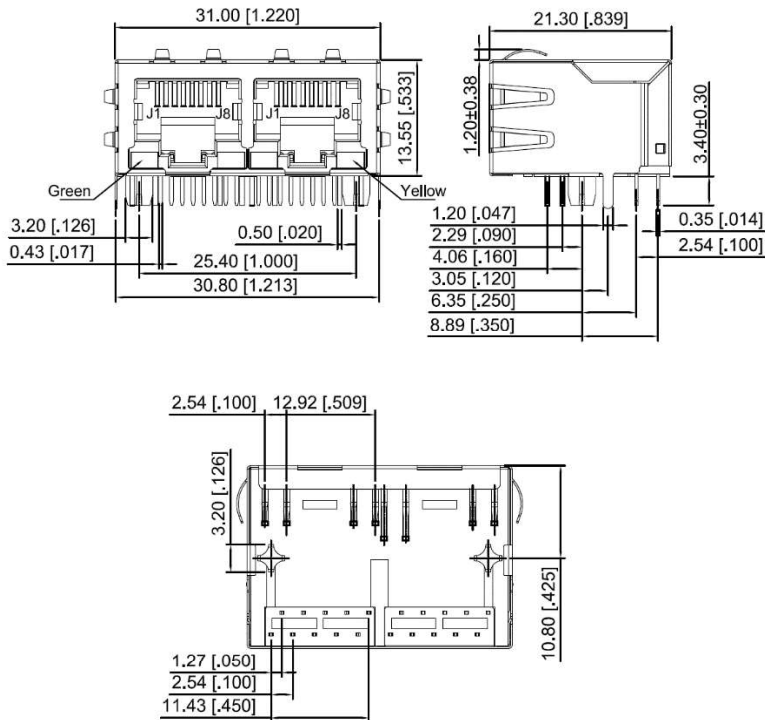
**After Change:**

### Electrical Specifications

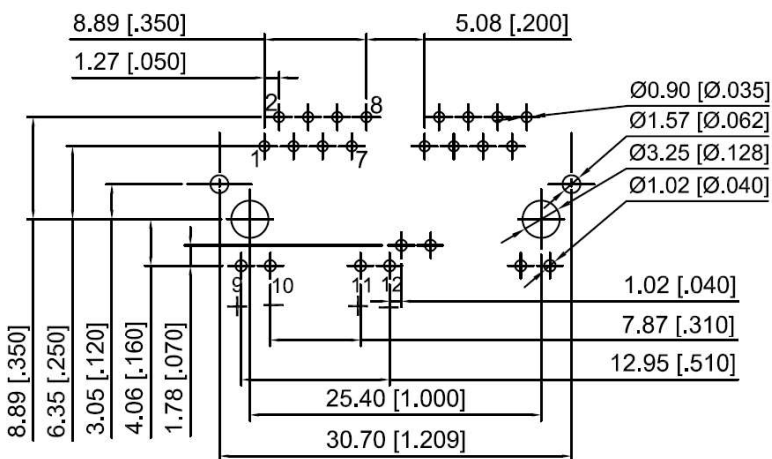
Parameters	Minimum	Typical	Maximum	Units	Notes
Turn Ratio (±3%)	1CT:1CT				100kHz, 0.1V
Inductance	350			μH	100kHz, 0.1V, 8mADC
	160				
Hipot	2250			VDC	1mA Max Complies with IEEE 802.3
Operating Temperature	-40		+85	°C	See options
Storage Temperature	-40		+85	°C	
<b>10/100/1G Base-T</b>					
Insertion Loss	-1.0			dB	0.3-100MHz
Return Loss			-18	dB	1-30MHz
			-16		30-60MHz
			-12		60-80MHz
			-10		80-100MHz
Crosstalk			-30	dB	1-100MHz
CMRR			-30	dB	1-100MHz
<b>5G Base-T</b>					
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

### Part Number Identification

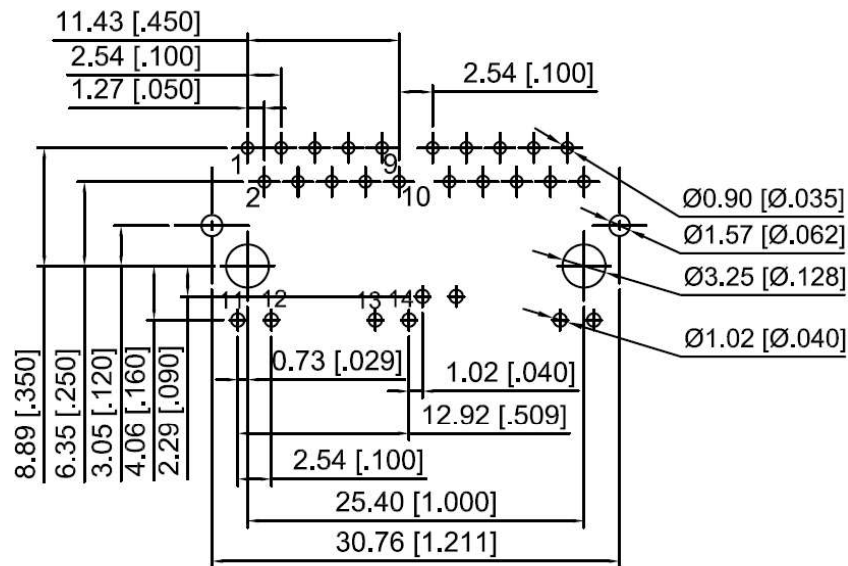


**Mechanical Specifications**
**AI: 1 x 2, w/ EMI Fingers**


Dimensions are in mm[inches]. Unless otherwise noted, tolerance is ±0.25mm[0.010]

**Recommended Layout**
**10/100 Base-T**


1000 Base-T  
5G Base-T



Dimensions are in mm[inches]. Unless otherwise noted, tolerance is  $\pm 0.25\text{mm}[0.010]$

**Cause/Reason for Change:**

Moving to new production line.

**Change Plan**

**Effective Date:**  
3/19/2021

**Additional Remarks:**

**Change Declaration:**

Changes described in this document do not adversely affect the products form, fit or function.

**There is a partial EOL associated with this ECN. (Refer to Partial ECN-EOL #M1227 ARJM12 Series: <https://abracon.com/downloads/ECN-PCN/Partial-ECN-EOL-M1227-ARJM12-Series.pdf>.)**

**Issued Date:**  
3/19/2021

**Issued By:**  
*Gerald Capwell*

**Issued Department:**  
Engineering

**Approval:**  
*Syed Raza*  
Engineering VP

**Approval:**  
*Reuben Quintanilla*  
Quality Director

**Approval:**  
*Ying Huang*  
Purchasing Director

**For Abracon EOL only**

**Last Time Buy (if applicable):**

**Alternate Part Number / Part Series:**

**Additional Approval:**

**Additional Approval:**

**Additional Approval:**

**Customer Approval (If Applicable)**

**Qualification Status:**

Approved  Not accepted

*Note: It is considered approved if there is no feedback from the customer 1 month after ECN/PCN is released.*

<b>Customer Part Number:</b>		<b>Customer Project:</b>	
<b>Company Name:</b>	<b>Company Representative:</b>	<b>Representative Signature:</b>	
<b>Customer Remarks:</b>			