

RJ45, 2x1 Multi Port, 100/1000/2.5G/5G Base-T Magnetics Module



ARJM21 Series

Request Samples



Check Inventory



17.2 x 28.5 x 25.8 mm

RoHS/RoHS II Compliant

MSL Level = 1

Features

IEEE 802.3 compliant

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 Base-TX Applications
- 1G Base-T Applications
- Next Generation 2.5 and 5G Base-T support.
- LOM (LAN on Motherboard)
- ADSL Modems
- Hubs, Switches, Servers.

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	
100 Base-T					
Insertion Loss			-1.0	dB	1-100MHz
Return Loss	-18			dB	1-30MHz
	-16				30-60MHz
	-12				60-80MHz
Crosstalk	-40			dB	1-30MHz
	-35				30-60MHz
	-30				60-100MHz
CMRR	-40			dB	1-60MHz
	-30				60-100MHz
1000 Base-T					
Insertion Loss			-1.1	dB	0.5-100MHz
Return Loss	-18			dB	0.5-40MHz
	-12+20log(f/80)*				40-100MHz
Crosstalk	-35			dB	0.5-40MHz
	-33-20log(f/80)*				40-100MHz
CMRR	-30			dB	0.5-100MHz



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Electrical Specifications Continued

Parameters	Minimum	Typical	Maximum	Units	Notes
2.5G Base-T					
Insertion Loss			-1.0	dB	1-100MHz
			-1.5		100-125MHz
Return Loss	-16			dB	1-30MHz
	-12				30-100MHz
	10				100-150MHz
Crosstalk	-25			dB	1-125MHz
CMMR	-30			dB	1-125MHz
5G Base-T					
Insertion Loss			-1.0	dB	1-125MHz
			-2.0		125-200MHz
			-2.5		200-250MHz
Return Loss	-18			dB	1-30MHz
	-14				30-100MHz
	-11				100-200MHz
	-9				200-250MHz
Crosstalk	-25			dB	1-250MHz
CMMR	-30			dB	1-100MHz
	-20				100-250MHz

*f represents the test frequency specified in MHz



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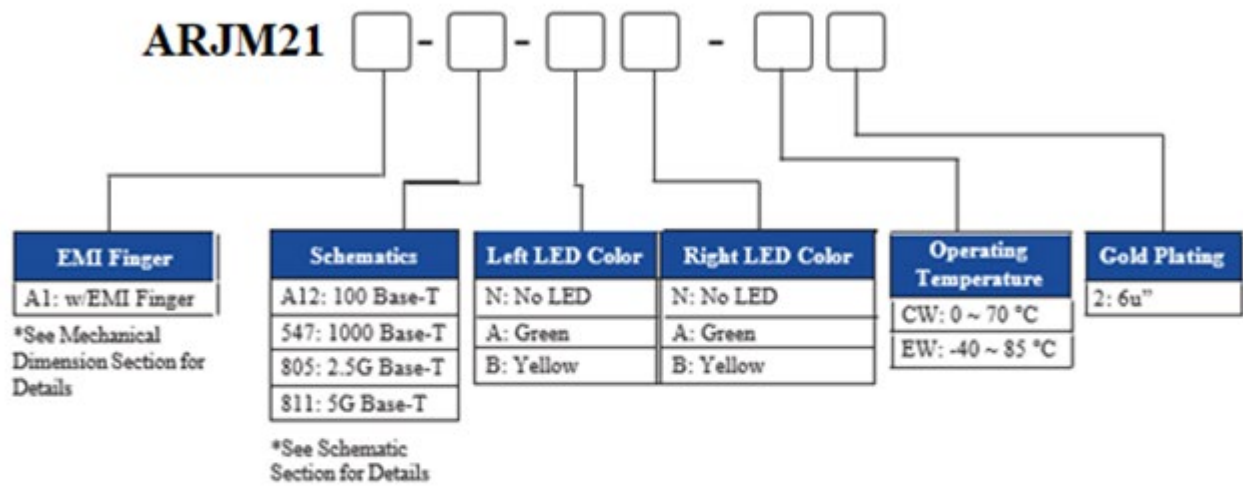


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Part Identification

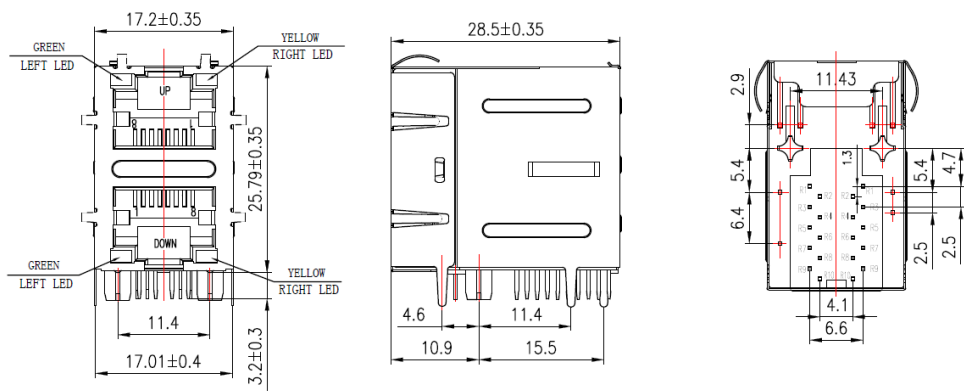


Example Configurations

ARJM21A1-547-AB-CW2
(2 x 1, w/ EMI, 1000Base-T, w/LED G/Y, commercial grade, 6u" Gold)

Mechanical Specifications

A1: 2 x 1 with EMI Fingers



Dimensions: mm



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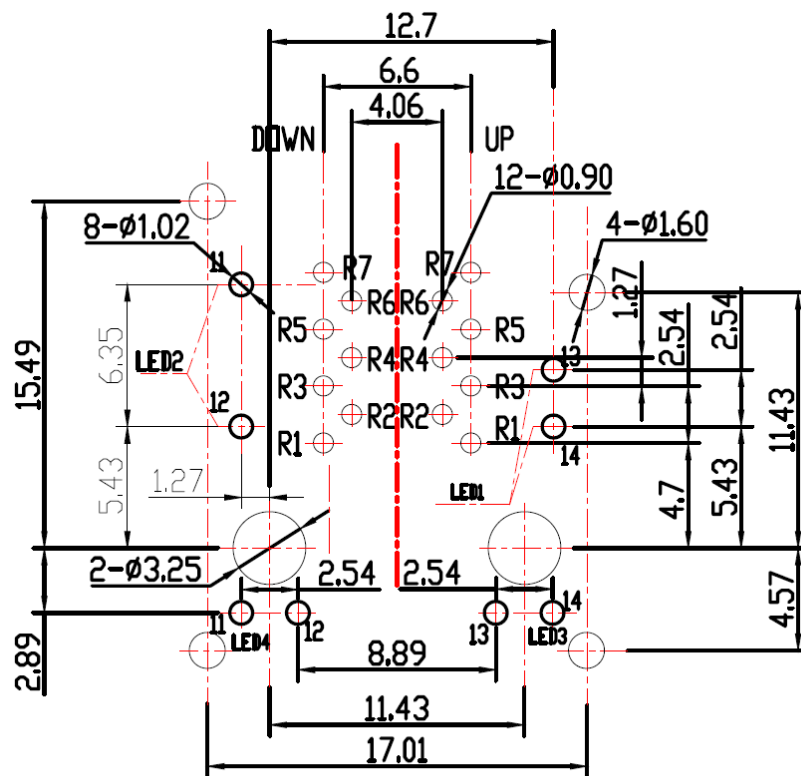
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Recommended Layout

8-pin (10/100Base-TX designs)



Component Side View

Dimensions: mm

Designs without LEDs do not have pins 11-14 populated.

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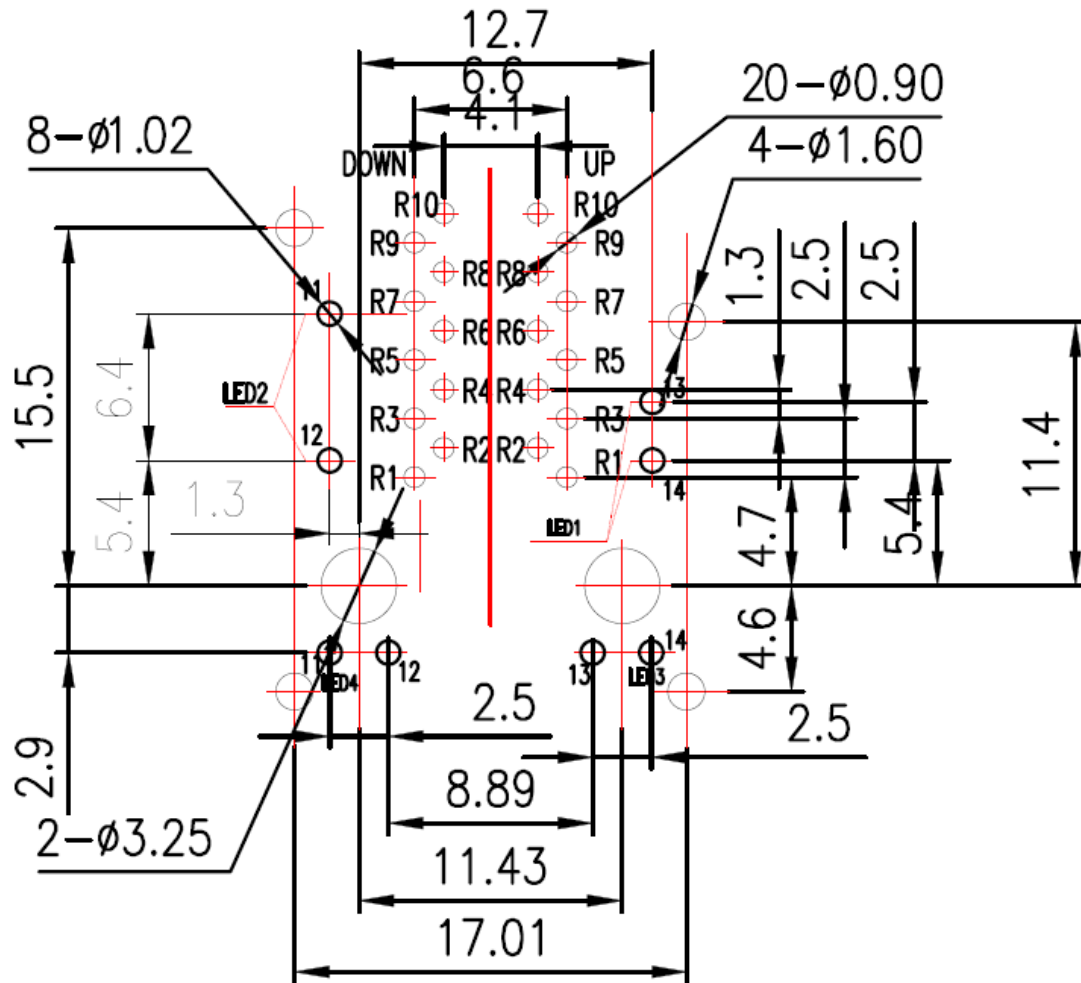


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10-pins (1G, 2.5G and 5GBase-T designs)



Component Side View

Dimensions: mm

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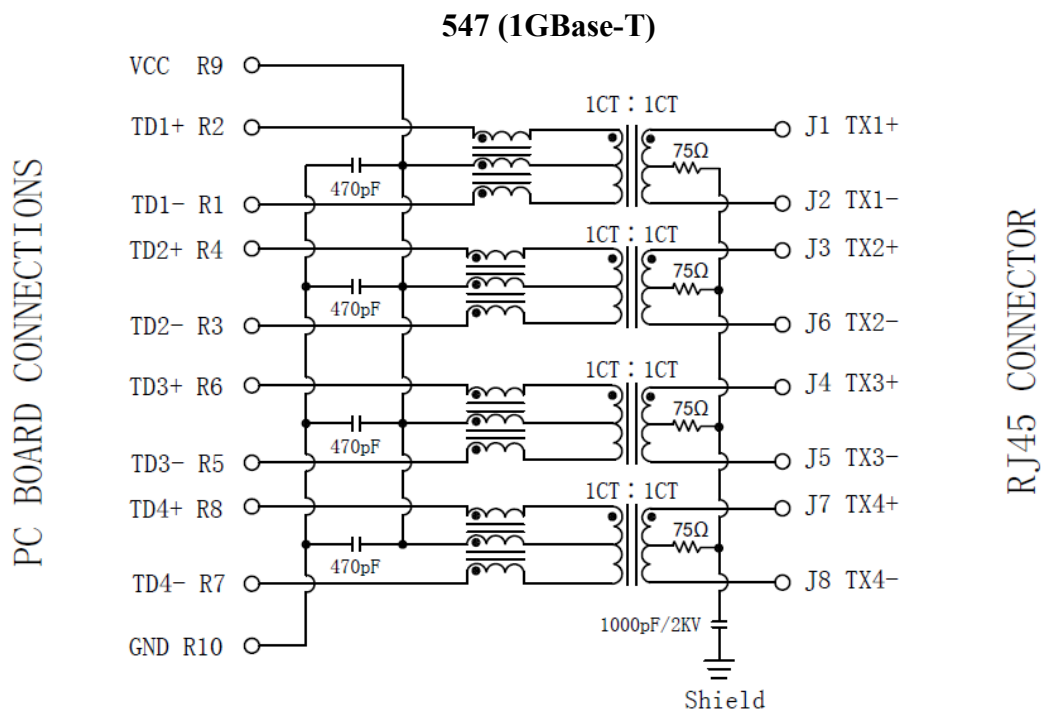
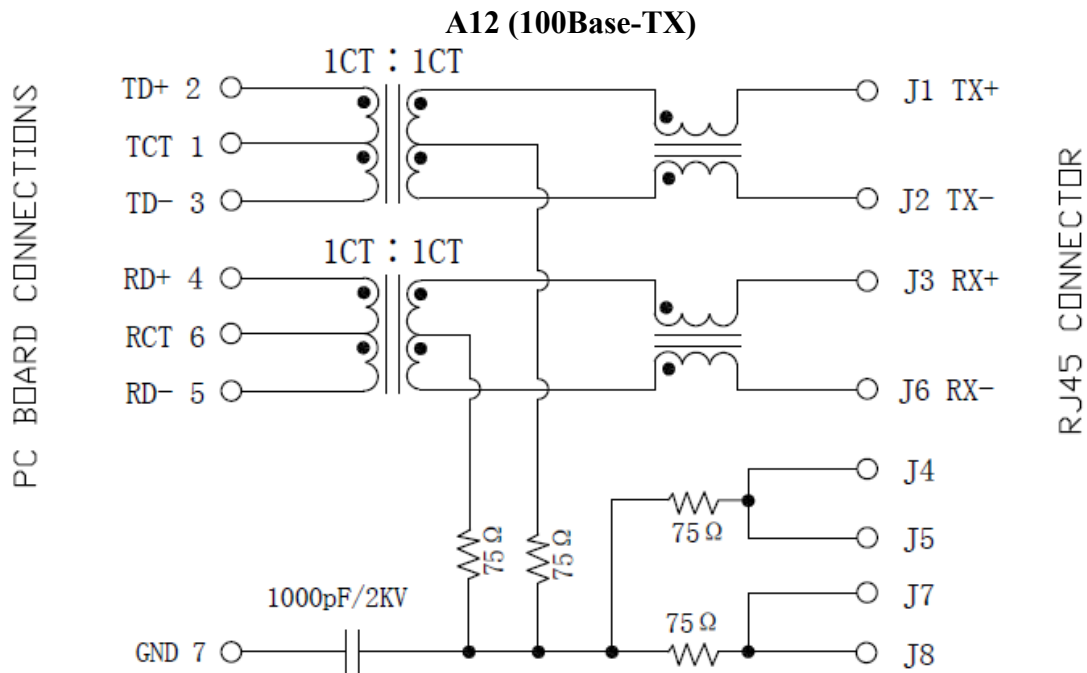


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Schematics



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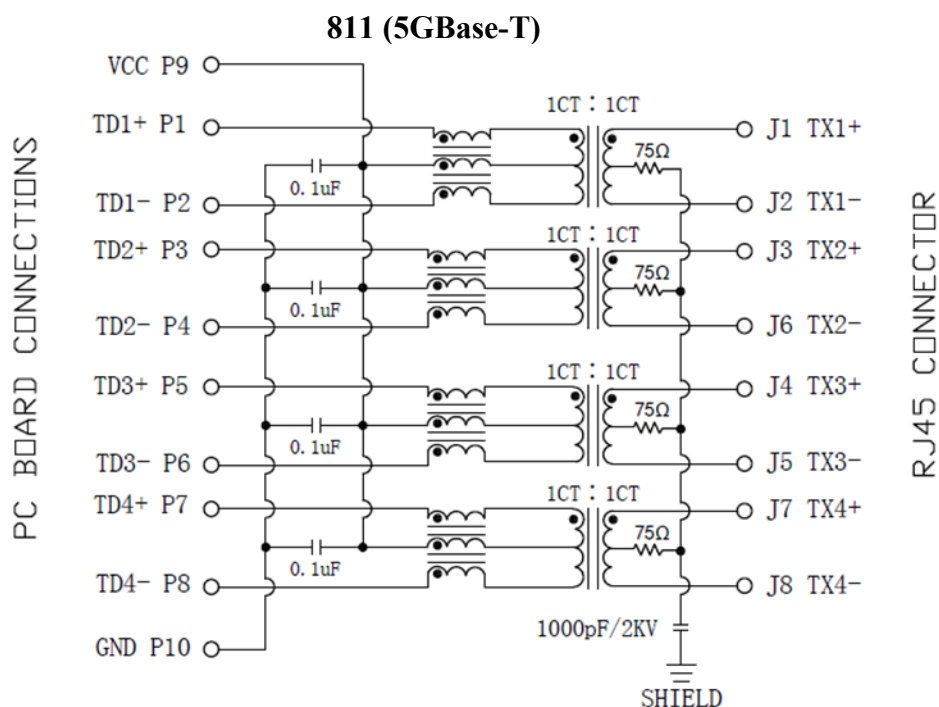
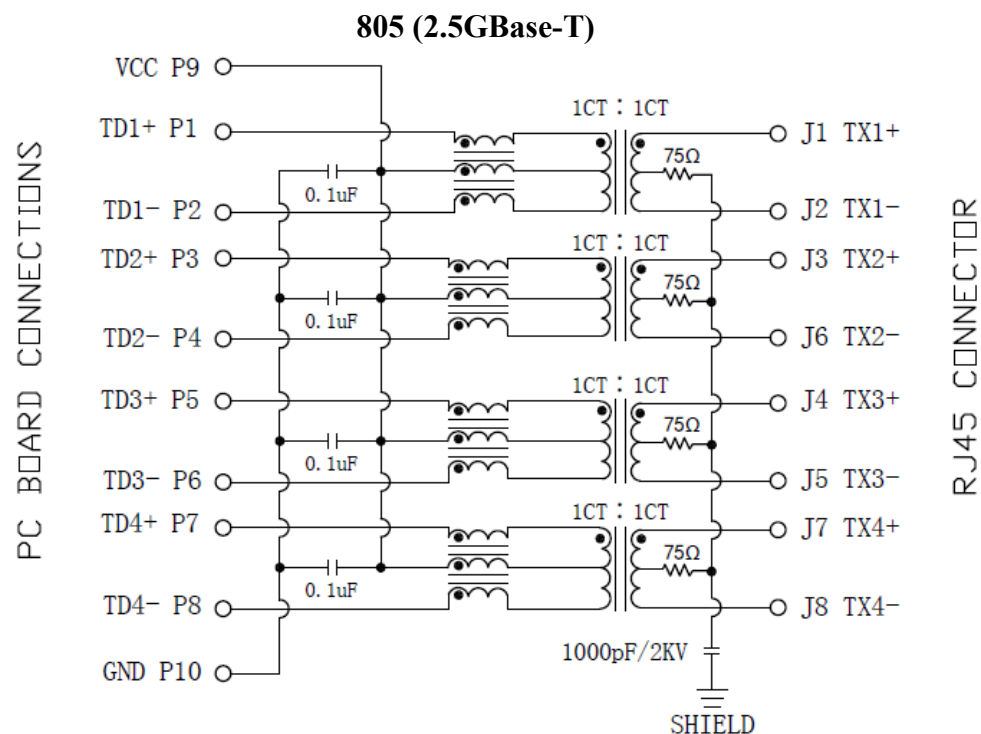
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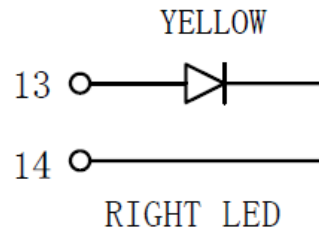
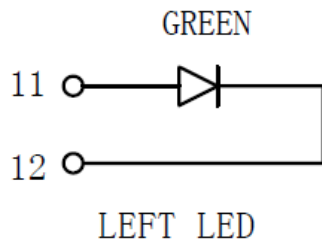
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LED Configuration

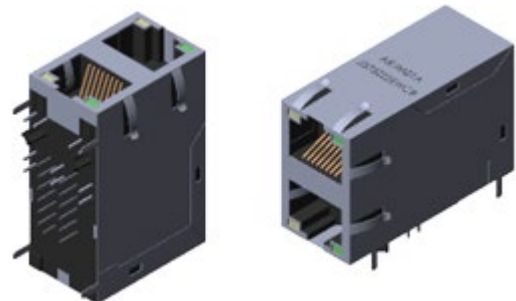
AB (Left: Green – Right: Yellow) :



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

Materials

Housing	Insert/Pins
Material: PBT, UL94V-0 Standard Color: Black	Material: PBT, UL94V-0 Contact Material: Phosphor Bronze Plating (1): Nickel Plating (2): Gold, 6u"
Shield/Shell	Cable Contacts
Material: Brass Plating (1): Nickel	Material: Phosphor Bronze Plating (1): Nickel Plating (2): 100%Sn
LEDs	
Material: Diffused Epoxy Lens, 0.5x0.5mm Carbon Steel wireframe leads	
Note: Abracon LLC will not alter any material composition, without prior written notification.	



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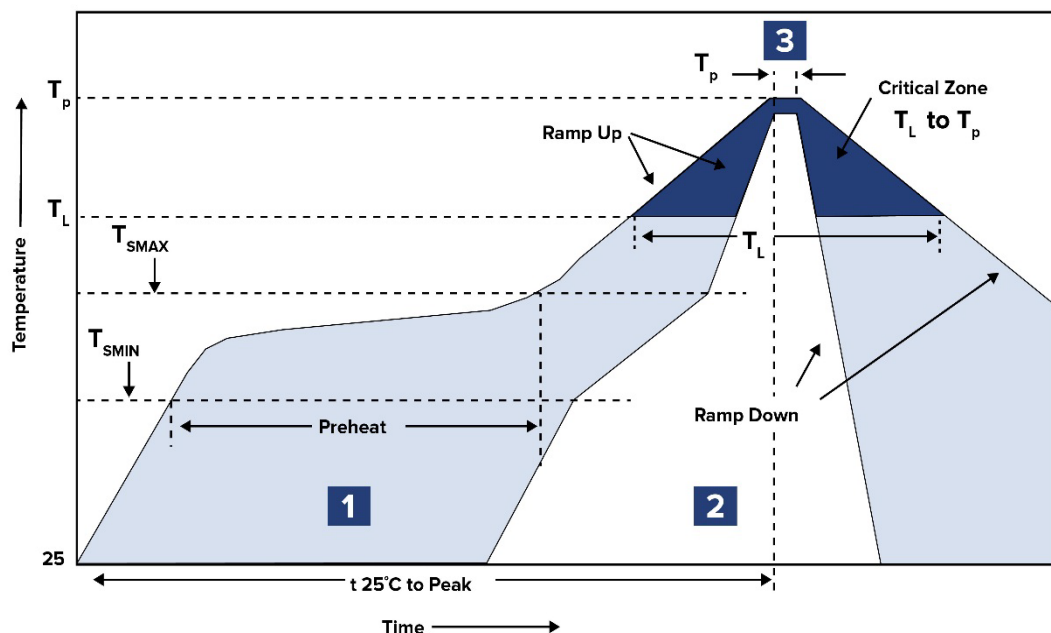


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Wave Soldering Profile



Zone	Description	Temperature	Times
1	Preheat	$T_{SMIN} \sim T_{SMAX}$ $150^{\circ}C \sim 200^{\circ}C$	60 ~ 120 sec.
2	Reflow	T_L $>217^{\circ}C$	20 sec. MAX
3	Peak heat	T_P $260^{\circ}C \pm 5^{\circ}C$	5 sec. MAX

Packaging

Series	Approximate Weight / Pc	Approximate Weight / Carton	Qty / Carton (pcs)	Trays / Carton	MOQ (pcs)	Carton Dimensions (LxWxH)
ARJM21	13.50 g	10500 g	540	18	540	370 x 300 x 300mm

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.



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