

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
	$-12+20\log(f/80)^*$				40-100MHz
Crosstalk	-35			dB	0.5-40MHz
	$-33-20\log(f/80)^*$				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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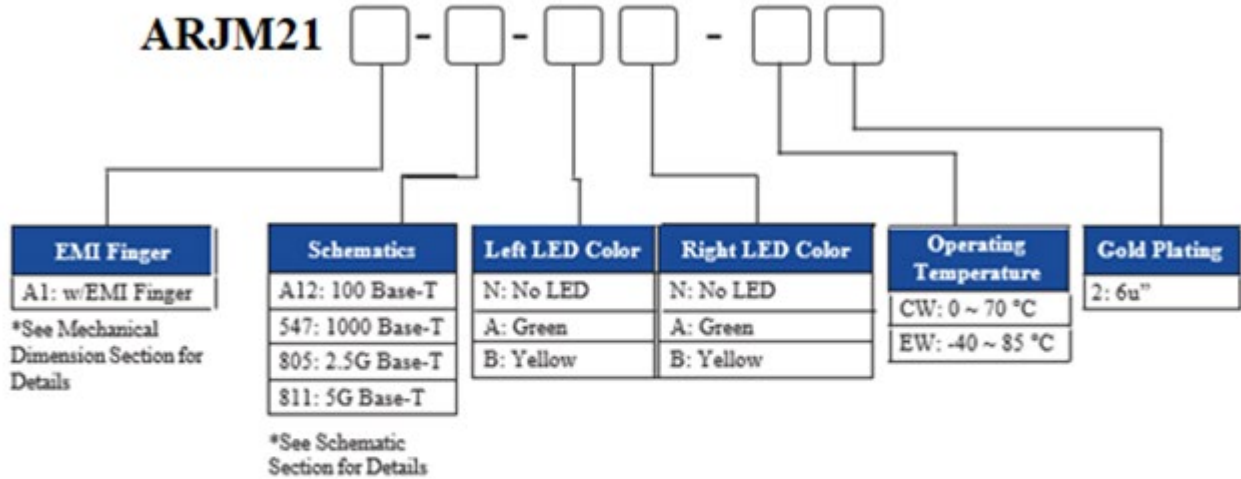


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Part Identification



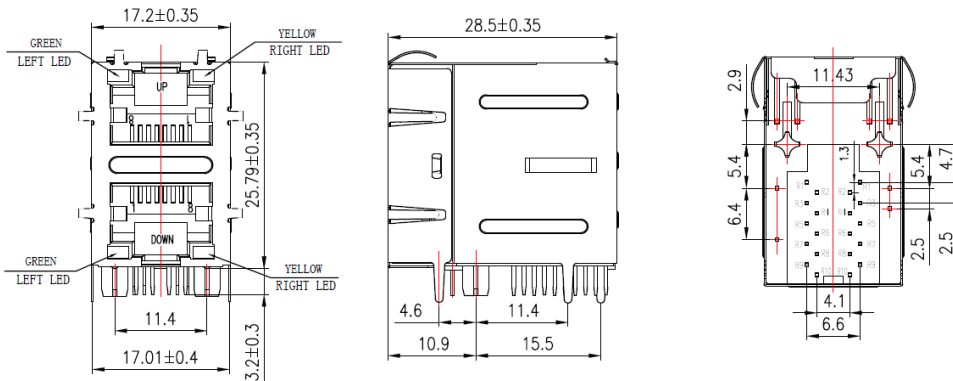
Example Configurations

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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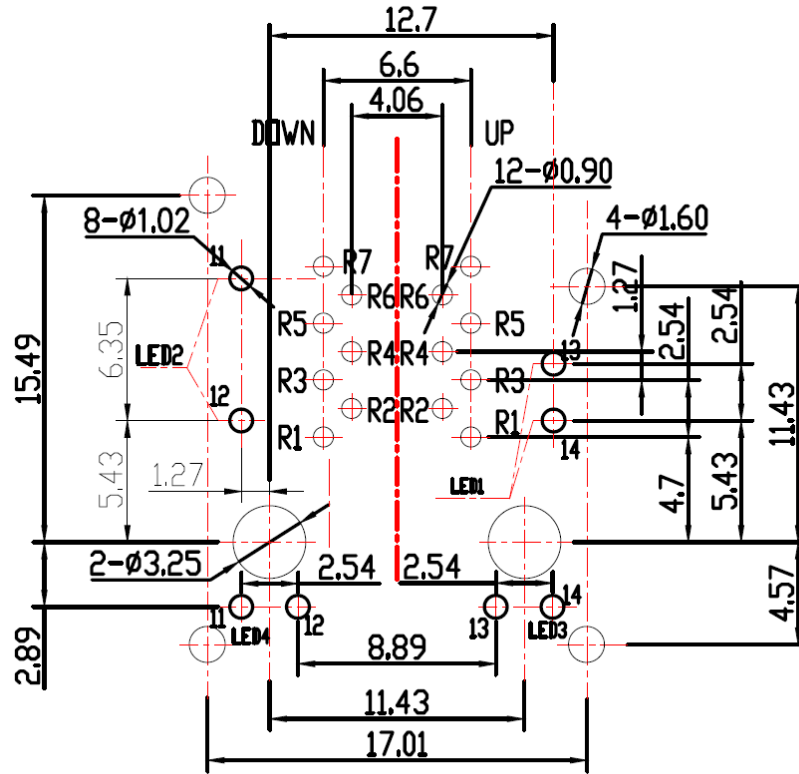
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Recommended Layout

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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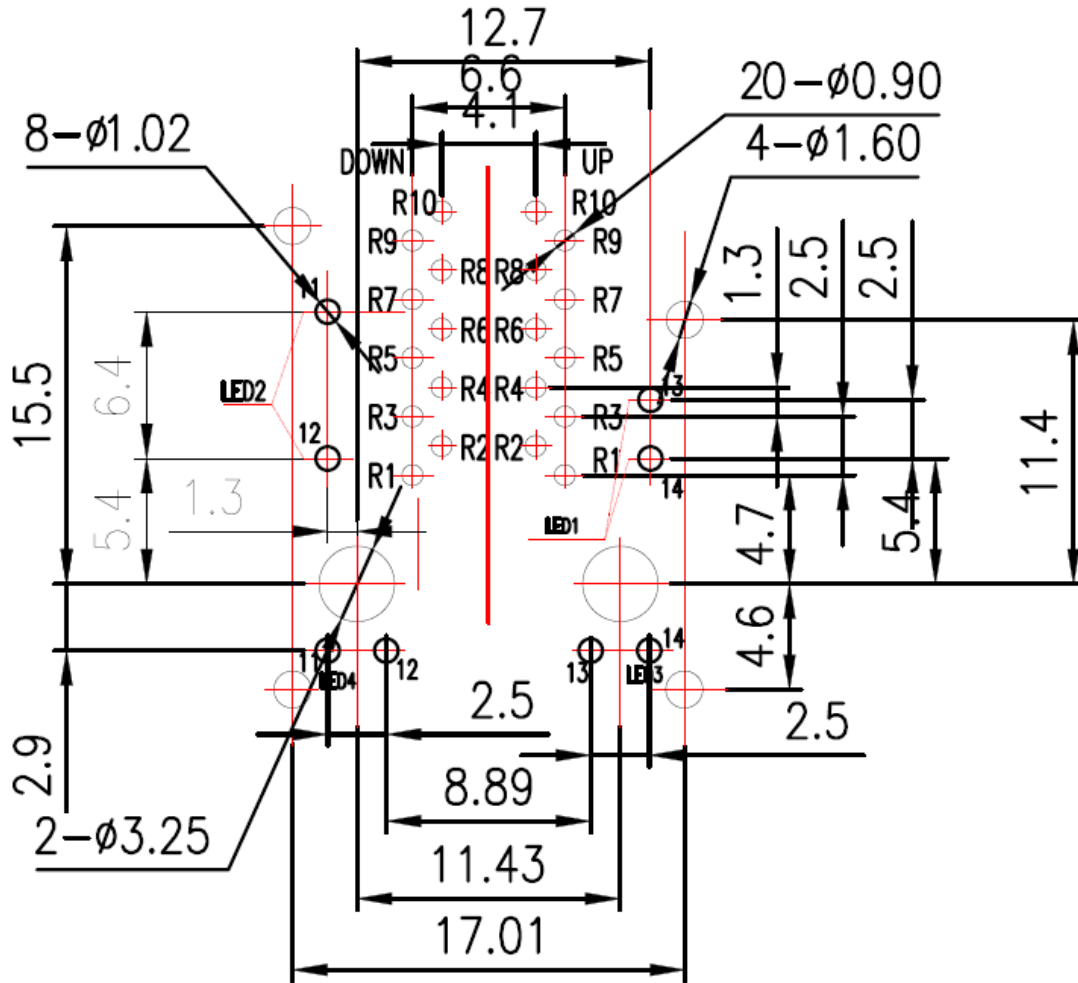


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10-pins (1G, 2.5G and 5GBase-T designs)



Component Side View

Dimensions: mm

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



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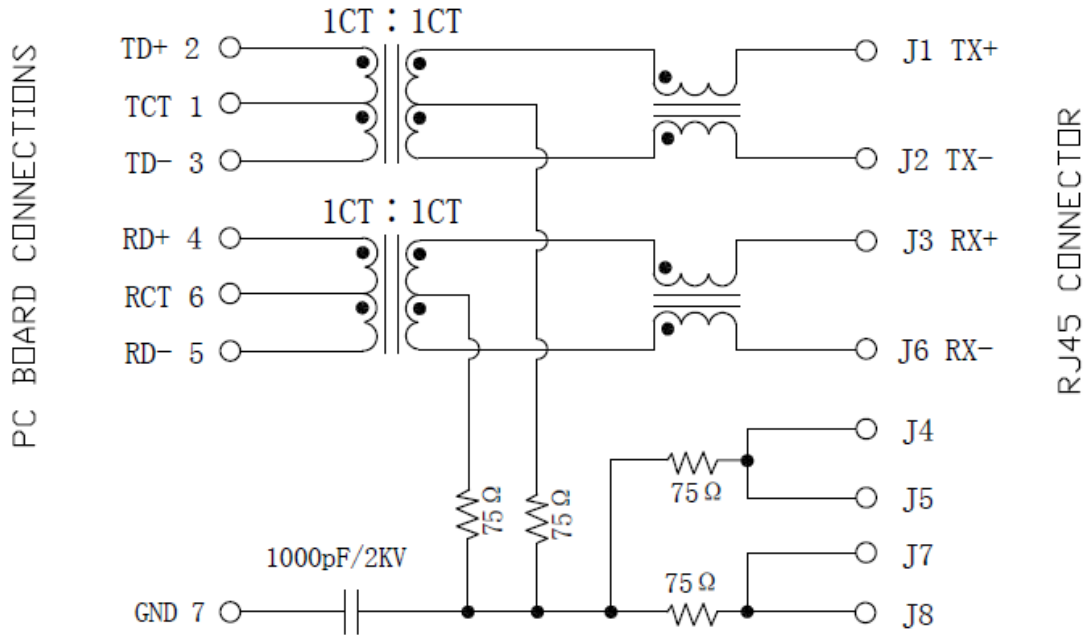
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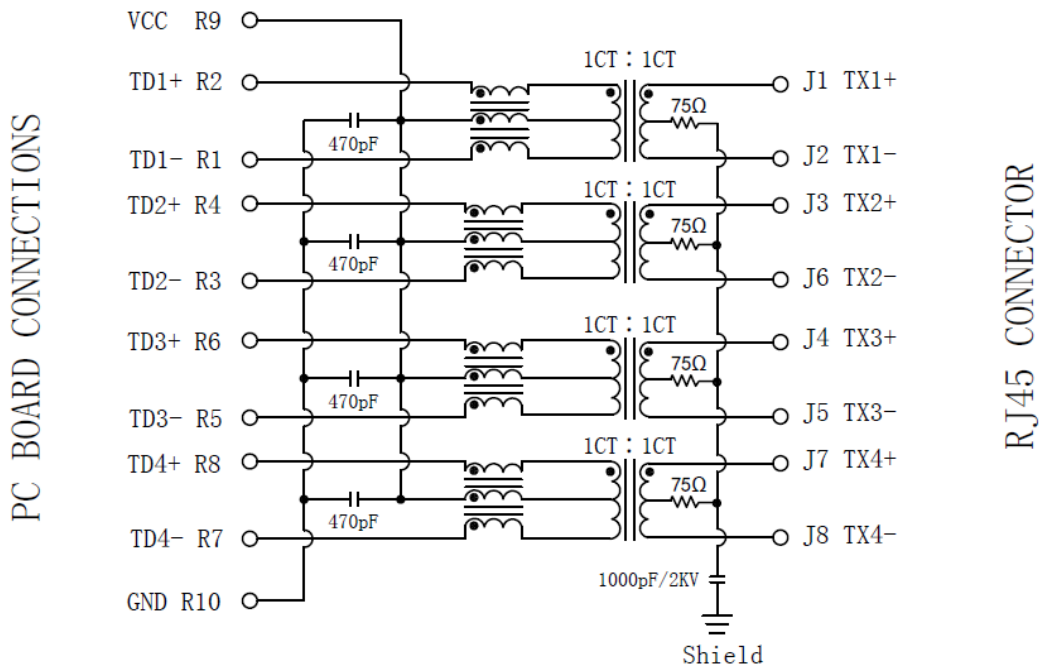
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Schematics

A12 (100Base-TX)



547 (1GBase-T)



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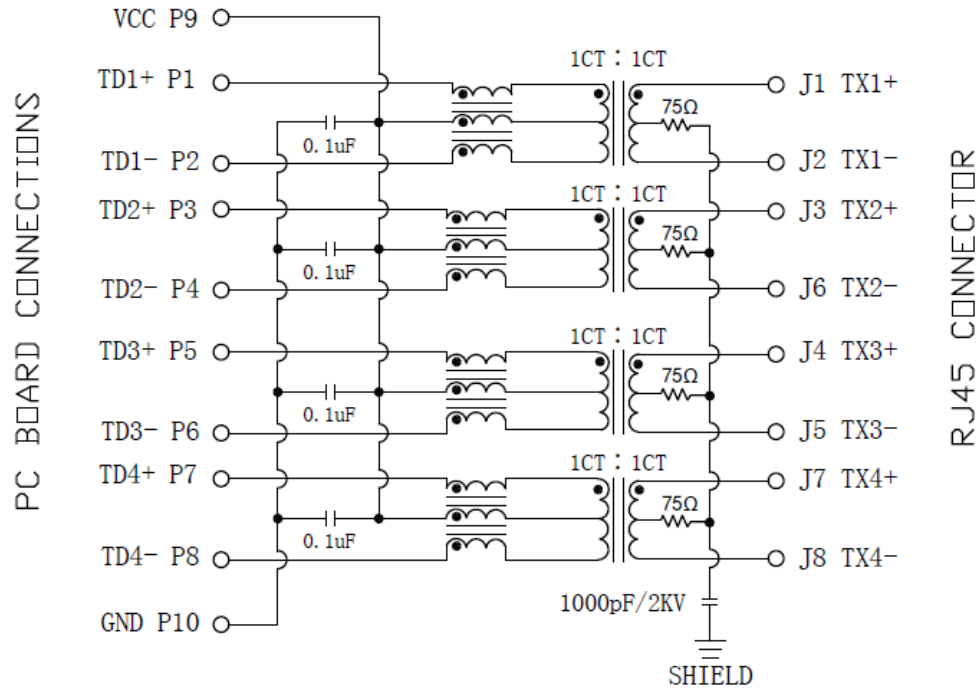


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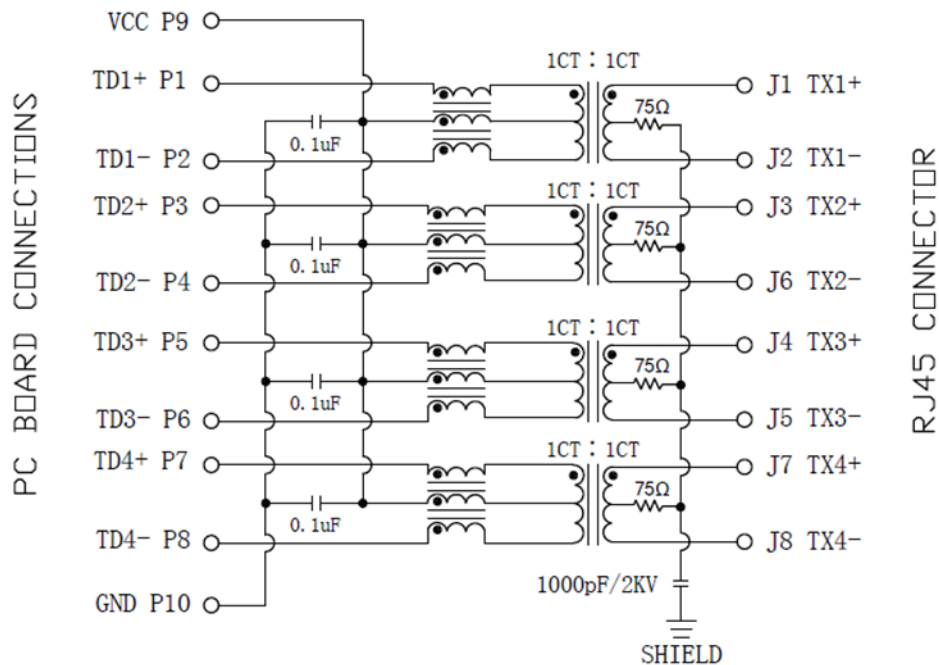


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805 (2.5GBase-T)



811 (5GBase-T)



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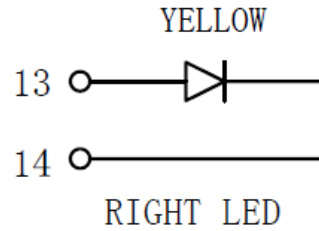
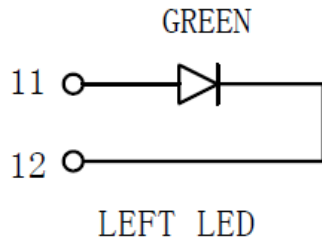
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LED Configuration

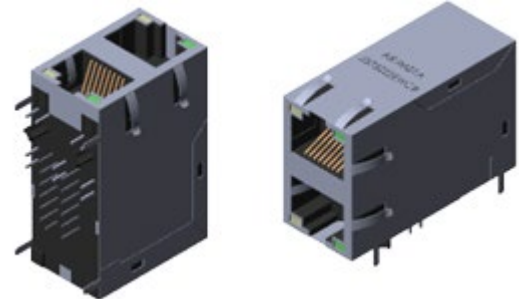
AB (Left: Green – Right: Yellow) :



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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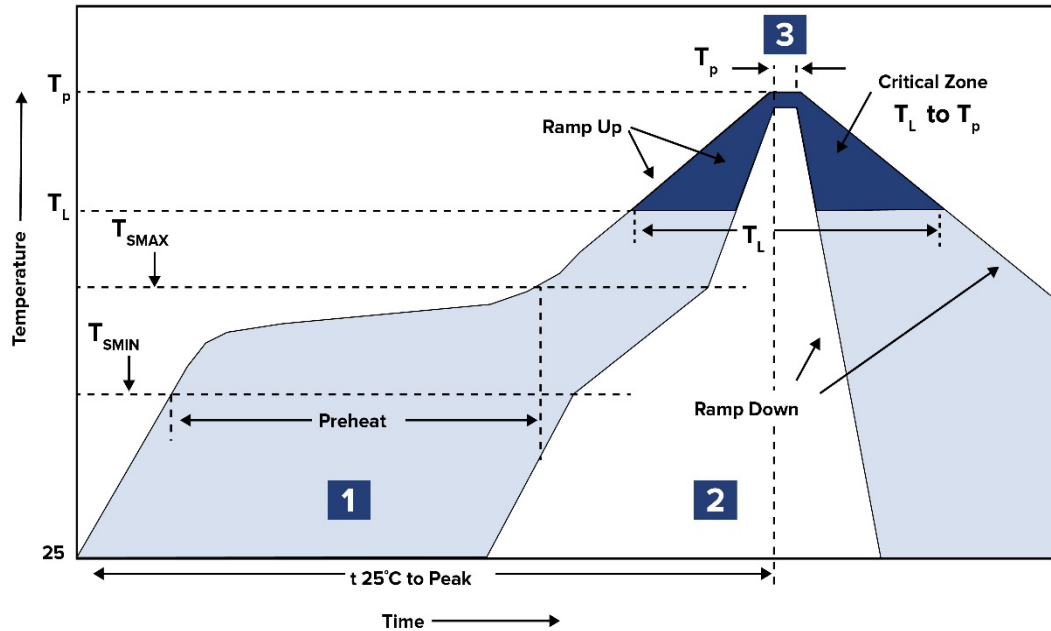


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Wave Soldering Profile



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

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