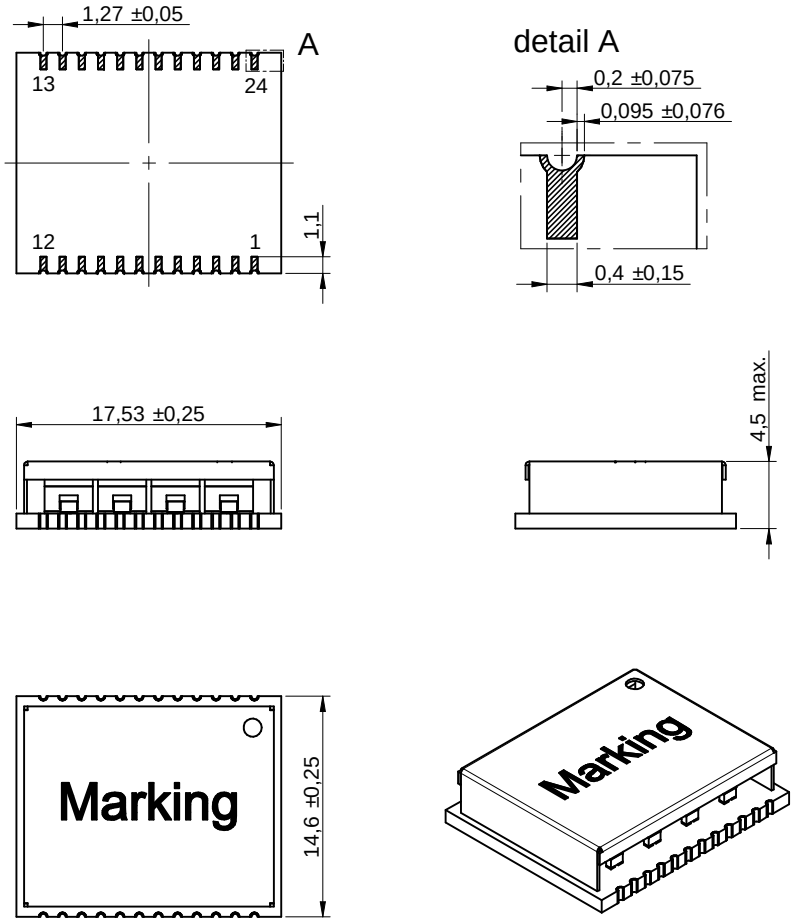
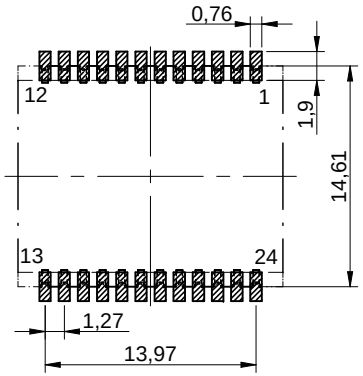
Dimensions: [mm]



Scale - 2:1

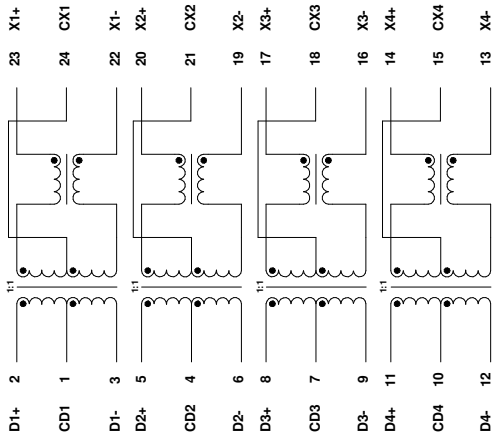
Recommended Land Pattern: [mm]



no vias or traces underneath the component

Scale - 2:1

Schematic:



Product Marking:

Pin 1	•
Marking	749020310 YYWW

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CHECKED	REVISION	DATE (YYYY-MM-DD)	GENERAL TOLERANCE	PROJECTION METHOD
JaB	005.000	2019-09-21	DIN ISO 2768-1m	

DESCRIPTION
WE-LAN AQ 1000 Base-T SMT Transformer

ORDER CODE
749020310

BUSINESS UNIT	STATUS	PAGE
eiSos	Valid	1/7

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Electrical Properties:

Properties		Test conditions	Value	Unit	Tol.
Inductance	L	100 kHz/ 100 mV @ 0 mA DC bias	350	µH	min.
DC Resistance 1	$R_{DC\,1}$	100 kHz/ 100 mV (D side)	4500	mΩ	max.
DC Resistance 2	$R_{DC\,2}$	100 kHz/ 100 mV (X side)	6000	mΩ	max.
Insertion Loss	IL	1-100 MHz	-1.1	dB	max.
Return Loss	RL	1-30 MHz @ 100 Ω	-18	dB	min.
Return Loss	RL	30-60 MHz @ 100 Ω	-12	dB	min.
Return Loss	RL	60-80 MHz @ 100 Ω	-12	dB	min.
Return Loss	RL	80-100 MHz @ 100 Ω	-10	dB	min.
Differential to Common Mode Rejection Ratio	DCMR	1-60 MHz	-35	dB	min.
Differential to Common Mode Rejection Ratio	DCMR	60-100 MHz	-30	dB	min.
Crosstalk	CT	1-100 MHz	-35	dB	min.
Insulation Test Voltage	V_T	1 min.	1500	V (RMS)	

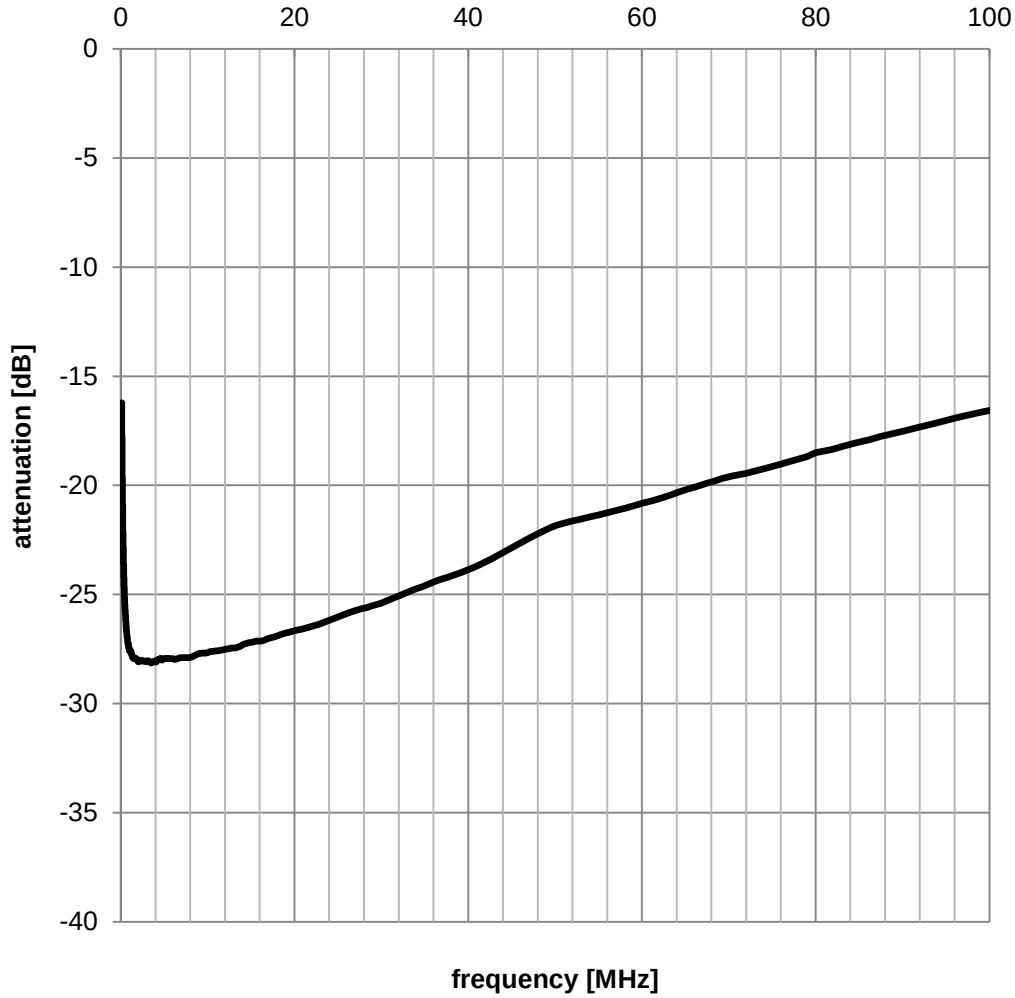
General Information:

It is recommended that the temperature of the component does not exceed +85°C under worst case conditions	
Operating Temperature	-40 up to +85 °C
Storage Conditions (in original packaging)	< 40 °C ; < 75 % RH
Moisture Sensitivity Level (MSL)	1
Test conditions of Electrical Properties: +20 °C, 33 % RH if not specified differently	

Certification:

RoHS Approval	Compliant [2011/65/EU&2015/863]
REACh Approval	Conform or declared [(EC)1907/2006]
Halogen Free	Conform [JEDEC JS709B]
Halogen Free	Conform [IEC 61249-2-21]

Typical Return Loss:



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JaB	005.000	2019-09-21	DIN ISO 2768-1m	

DESCRIPTION
WE-LAN AQ 1000 Base-T SMT Transformer

ORDER CODE
749020310

BUSINESS UNIT	STATUS	PAGE
eiSos	Valid	2/7

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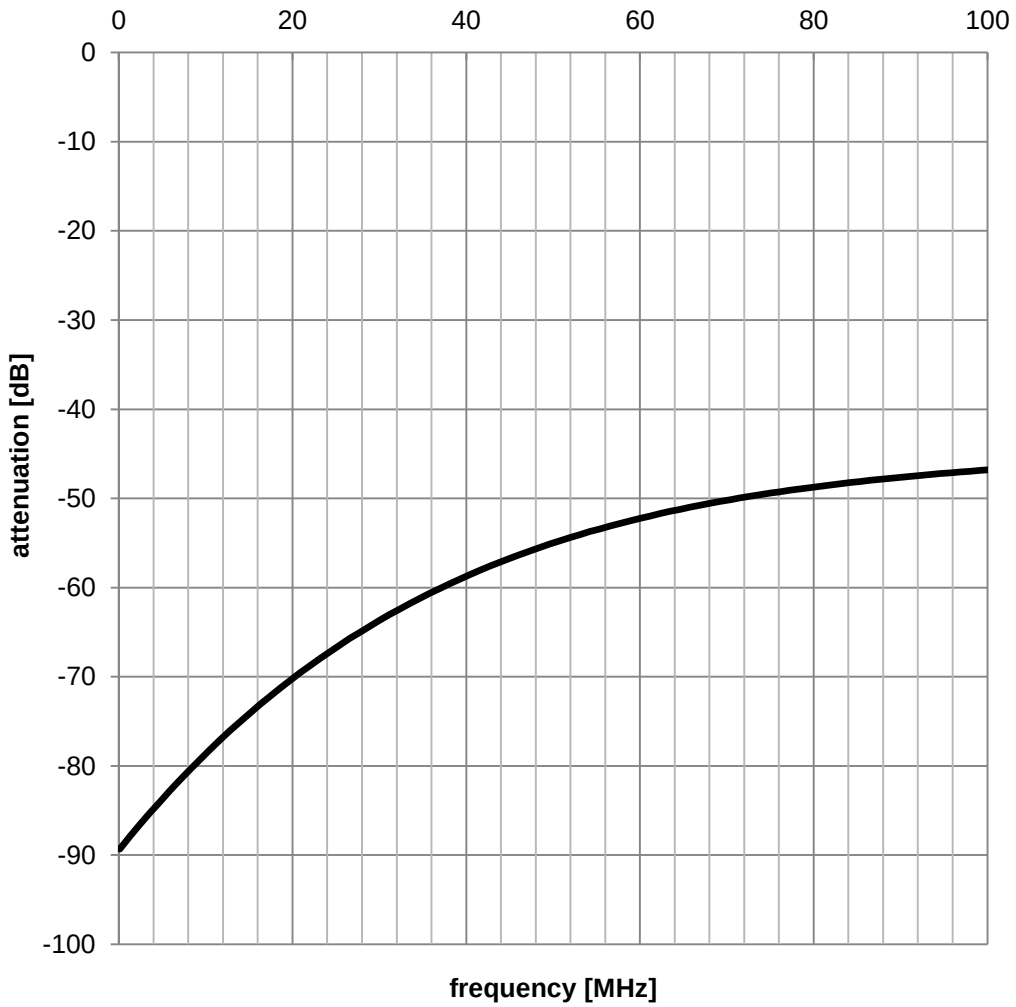
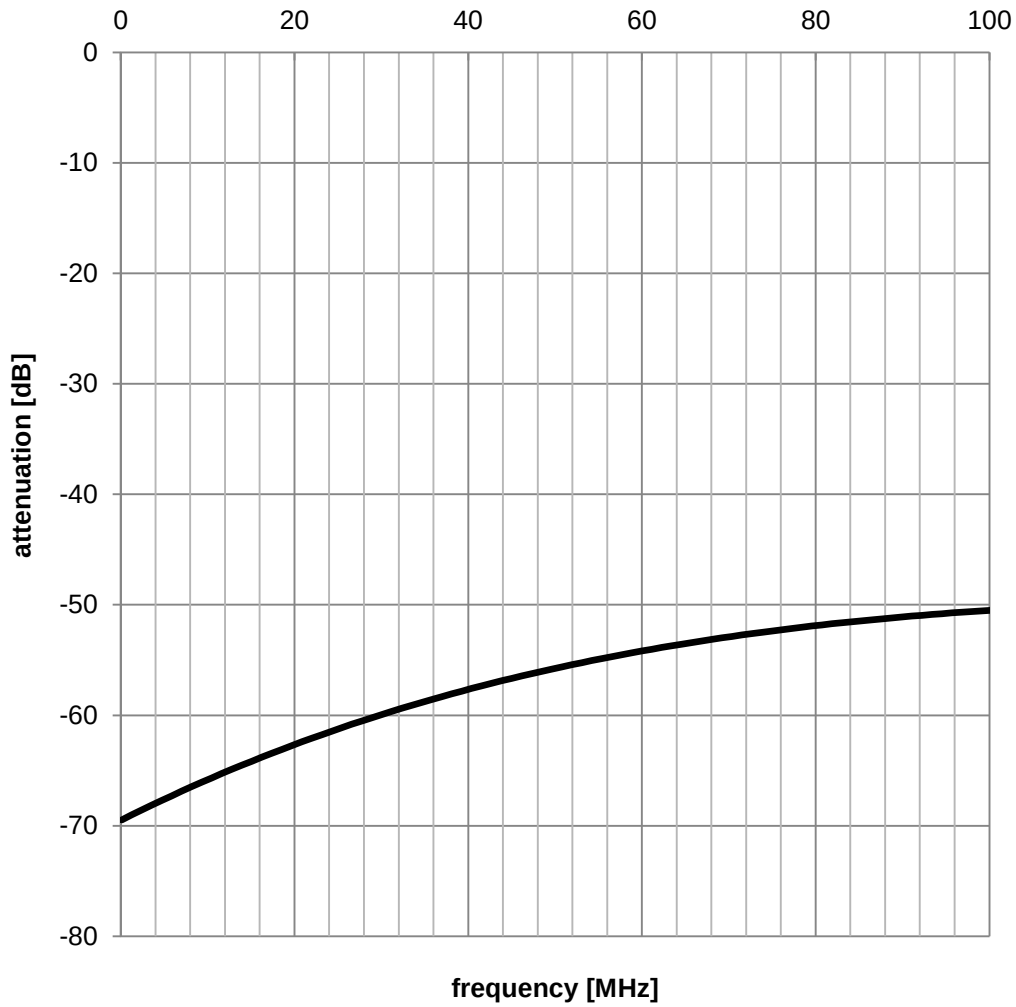
Typical Common Mode Rejection:



Typical Crosstalk:



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JaB	005.000	2019-09-21	DIN ISO 2768-1m	

DESCRIPTION
WE-LAN AQ 1000 Base-T SMT Transformer

ORDER CODE
749020310

BUSINESS UNIT	STATUS	PAGE
eiSos	Valid	3/7

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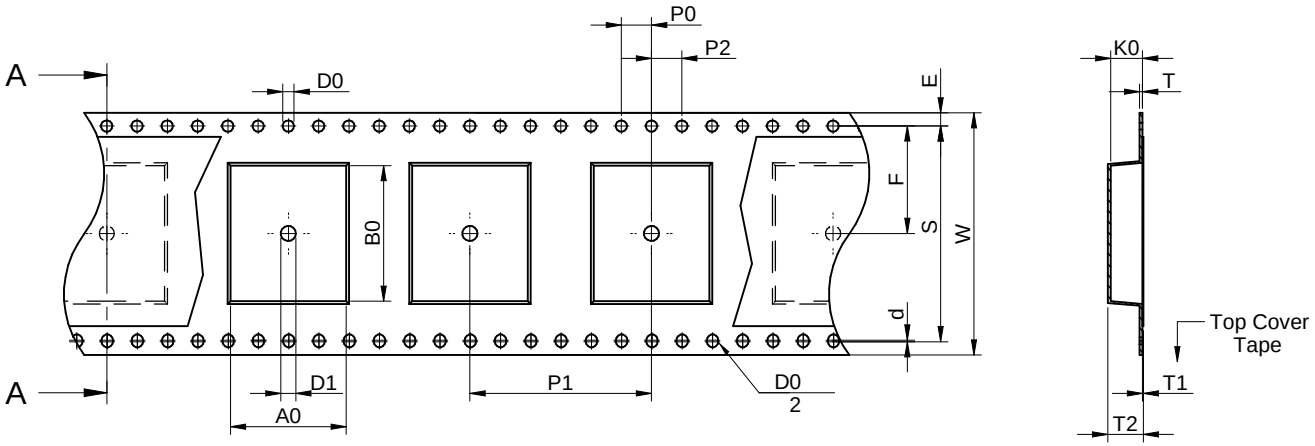
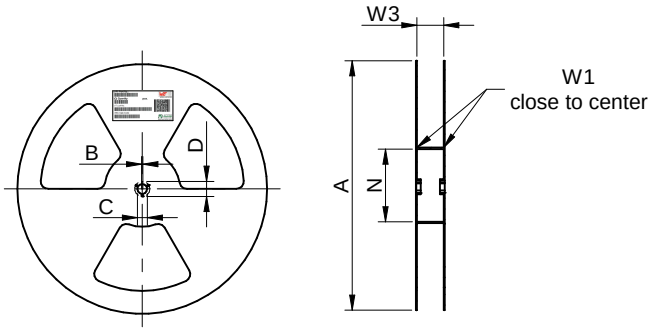
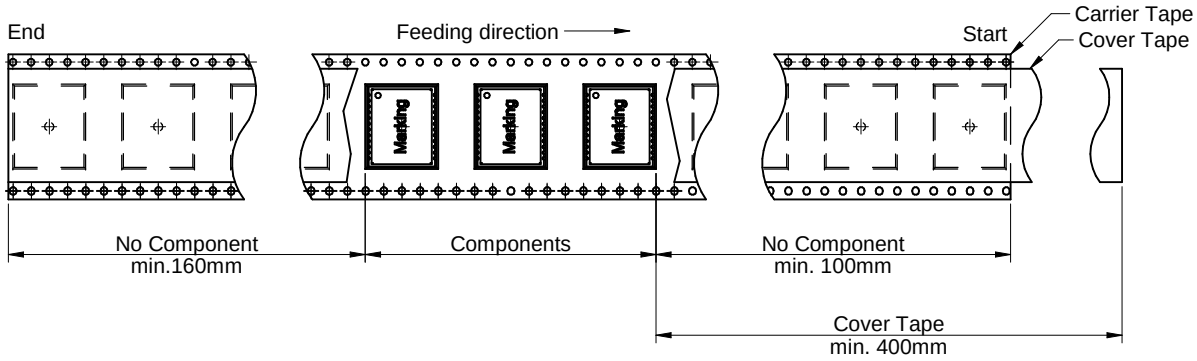
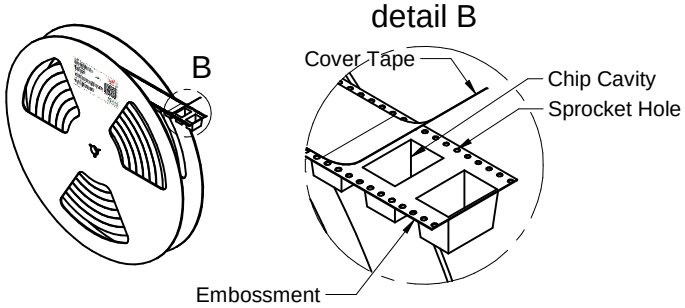
Packaging Specification - Tape and Reel: [mm]





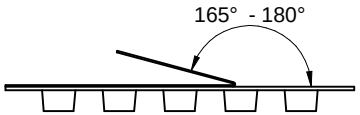




packaging is reffered to the international standard IEC 60286-3:2013

	Tape Type	A0 (mm)	B0 (mm)	W (mm)	T (mm)	T1 (mm)	T2 (mm)	K0 (mm)	P0 (mm)	P1 (mm)	P2 (mm)	D0 (mm)	D0 / 2 (mm)	D1 (mm)	d (mm)	E (mm)	S (mm)	F (mm)	Material	Qty. (pcs.)
Tolerance		±0,1	±0,1	±0,3	±0,05	ref.	±0,1	±0,1	±0,1	±0,1	±0,1	+0,1/ -0,0	+0,05/ -0,0	min.	±0,05	±0,1	±0,1	±0,1		
Value	3	15,30	17,93	32	0,40	0,10	5,60	4,80	4,00	24,00	2,00	1,50	0,75	2	0,20	1,75	28,40	14,20	Polystyrene	400

	A (mm)	B (mm)	C (mm)	D (mm)	N (mm)	W1 (mm)	W2 (mm)	W3 (mm)	W3 (mm)	Material
Tolerance	± 2,0	min.	min.	min.	min.	+ 2,0	max.	min.	max.	
Value	330,00	1,50	12,80	20,20	80	32,40	38,40	31,90	35,40	Polystyrene



		Pull-of force
Tape width	32 mm	0,1 N - 1,3 N

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JaB	005.000	2019-09-21	DIN ISO 2768-1m	

DESCRIPTION
WE-LAN AQ 1000 Base-T SMT Transformer

ORDER CODE
749020310

BUSINESS UNIT	STATUS	PAGE
eiSos	Valid	4/7

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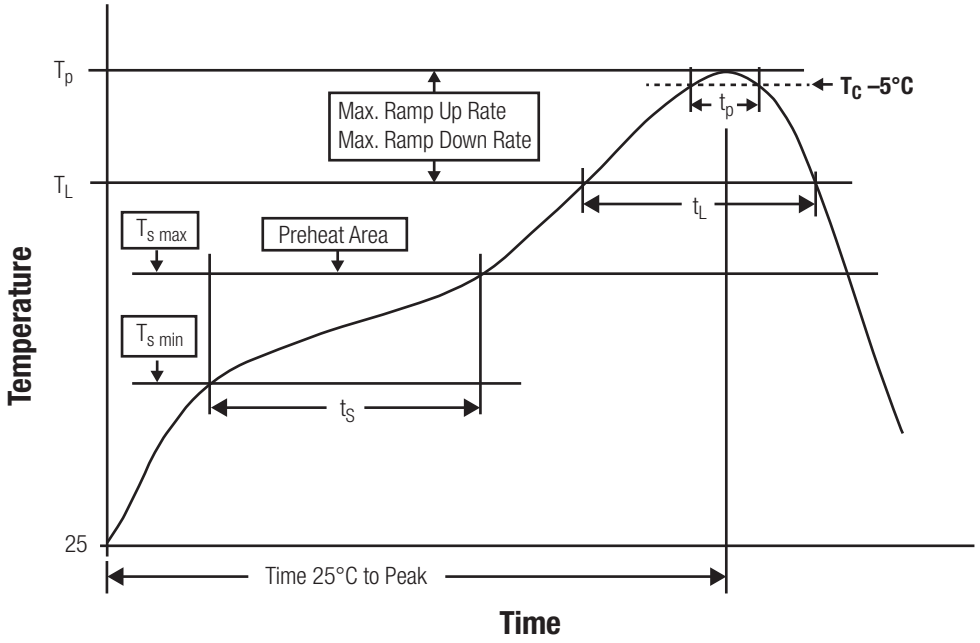
Classification Reflow Profile for SMT components:



Classification Reflow Soldering Profile:

Profile Feature		Value
Preheat Temperature Min	$T_{s\ min}$	150 °C
Preheat Temperature Max	$T_{s\ max}$	200 °C
Preheat Time t_s from $T_{s\ min}$ to $T_{s\ max}$	t_s	60 - 120 seconds
Ramp-up Rate (T_L to T_P)		3 °C/ second max.
Liquidous Temperature	T_L	217 °C
Time t_L maintained above T_L	t_L	60 - 150 seconds
Peak package body temperature	T_p	$T_p \leq T_c$, see Table below
Time within 5°C of actual peak temperature	t_p	20 - 30 seconds
Ramp-down Rate (T_P to T_L)		6 °C/ second max.
Time 25°C to peak temperature		8 minutes max.

refer to IPC/ JEDEC J-STD-020E

Package Classification Reflow Temperature (T_C):

Properties	Volume mm³ <350	Volume mm³ 350-2000	Volume mm³ >2000
PB-Free Assembly I Package Thickness < 1.6 mm	260 °C	260 °C	260 °C
PB-Free Assembly I Package Thickness 1.6 mm - 2.5 mm	260 °C	250 °C	245 °C
PB-Free Assembly I Package Thickness > 2.5 mm	250 °C	245 °C	245 °C

refer to IPC/ JEDEC J-STD-020E

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CHECKED	REVISION	DATE (YYYY-MM-DD)	GENERAL TOLERANCE	PROJECTION METHOD
JaB	005.000	2019-09-21	DIN ISO 2768-1m	

DESCRIPTION
WE-LAN AQ 1000 Base-T SMT Transformer

ORDER CODE
749020310

BUSINESS UNIT	STATUS	PAGE
eiSos	Valid	5/7

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Cautions and Warnings:

The following conditions apply to all goods within the product series of WE-LAN AQ of Würth Elektronik eiSos GmbH Co. KG:

General:

- This electronic component is designed and developed with the intention for use in general electronic equipment.
- Würth Elektronik must be asked for written approval (following the PPAP procedure) before incorporating the components into any equipment in fields such as military, aerospace, aviation, nuclear control, submarine, transportation (automotive control, train control, ship control), transportation signal, disaster prevention, medical, public information network etc. where higher safety and reliability are especially required and/or if there is the possibility of direct damage or human injury.
- Electronic components that will be used in safety-critical or high-reliability applications, should be pre-evaluated by the customer.
- The component is designed and manufactured to be used within the datasheet specified values. If the usage and operation conditions specified in the datasheet are not met, the wire insulation may be damaged or dissolved.
- Do not drop or impact the components, the component may be damaged.
- Würth Elektronik products are qualified according to international standards, which are listed in each product reliability report. Würth Elektronik does not guarantee any customer qualified product characteristics beyond Würth Elektroniks' specifications, for its validity and sustainability over time.
- The customer is responsible for the functionality of their own products. All technical specifications for standard products also apply to customer specific products.

Product specific:

Soldering:

- The solder profile must comply with the technical product specifications. All other profiles will void the warranty.
- All other soldering methods are at the customers' own risk.
- Strong forces which may affect the coplanarity of the components' electrical connection with the PCB (i.e. pins), can damage the part, resulting in avoid of the warranty.

Cleaning and Washing:

- Washing agents used during the production to clean the customer application might damage or change the characteristics of the wire insulation, marking or plating. Washing agents may have a negative effect on the long-term functionality of the product.
- Using a brush during the cleaning process could break the wire due to its small diameter. Therefore, we do not recommend using a brush during the PCB cleaning process.

Potting:

- If the product is potted in the costumer application, the potting material might shrink or expand during and after hardening. Shrinking could lead to an incomplete seal, allowing contaminants into the core. Expansion could damage the components. We recommend a manual inspection after potting to avoid these effects.

Storage Conditions:

- A storage of Würth Electronik products for longer than 12 months is not recommended. Within other effects, the terminals may suffer degradation, resulting in bad solderability. Therefore, all products shall be used within the period of 12 months based on the day of shipment.
- Do not expose the components to direct sunlight.
- The storage conditions in the original packaging are defined according to DIN EN 61760-2.
- The storage conditions stated in the original packaging apply to the storage time and not to the transportation time of the components.

Handling:

- Violation of the technical product specifications such as exceeding the nominal rated current will void the warranty.
- Applying currents with audio-frequency signals might result in audible noise due to the magnetostrictive material properties.
- The temperature rise of the component must be taken into consideration. The operating temperature is comprised of ambient temperature and temperature rise of the component.The operating temperature of the component shall not exceed the maximum temperature specified.

These cautions and warnings comply with the state of the scientific and technical knowledge and are believed to be accurate and reliable. However, no responsibility is assumed for inaccuracies or incompleteness:

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JaB	005.000	2019-09-21	DIN ISO 2768-1m	

DESCRIPTION
WE-LAN AQ 1000 Base-T SMT Transformer

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BUSINESS UNIT	STATUS	PAGE
eiSos	Valid	6/7

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