



M12 D-coded 10/100M transformer receptacles



GENERAL INFORMATION

No. of contacts	4 poles
Contact resistance	10 mOhm Max.
Working temperature range	-40°C - +85°C
Termination technology	SMT
Reflow processing temperature	245°C Max.
Total insertion force	10N Max. according to IEC 61076-2-101
Total withdrawal force	15N Max. according to IEC 61076-2-101
Mating cycles	100 mating cycles, according to IEC 61076-2-101
Shock and vibration proof	according to IEC 61076-2-101
RoHS - compliant	Yes
Lead free	Yes
PSL level acc. ECA/IPC/JEDEC J-STD-075	R7

INSULATION MATERIAL

Material	LCP (liquid crystalline polymer)
Color	Black
UL classification	UL94-V0
Material group acc. IEC 60664-1	IIIa (175 ≤ CTI < 400)

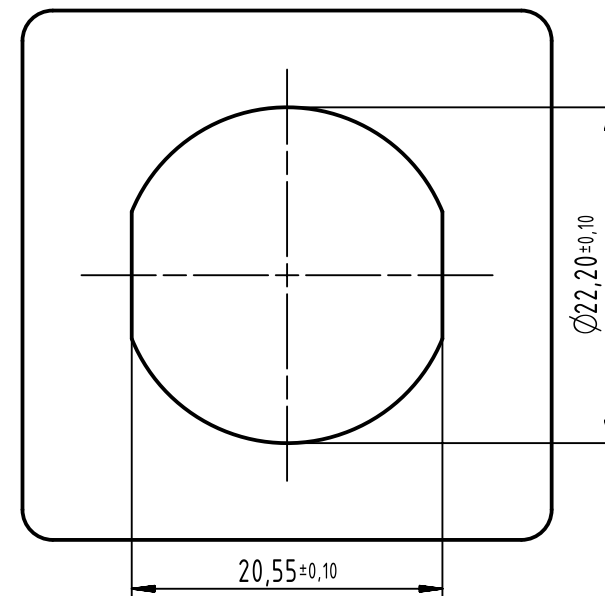
CONTACT MATERIAL

Contact material	Copper alloy
Plating termination zone	Tin
Plating contact sliding side	Gold

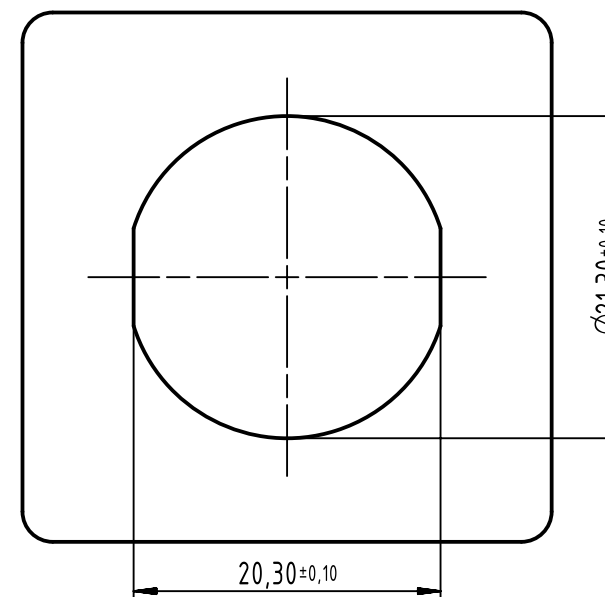
SHIELDING MATERIAL

Shielding material	Copper alloy
Plating	Tin

Recommended Panel cut out



Front mounting use
Detail see drawing 21033012006



Rear mounting use
Detail see drawing 21033012007

	All Dimensions in mm Original Size DIN A3	Scale 1:1			Free size tol.		Ref.	
							Sub.	
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	Department EL PD							
HARTING Electronics GmbH D-32339 Espelkamp		Title M12 transformer receptacles D-coded stra					Doc-Key / ECM-Nr. 100720894/UGD/001/C 500000148100	
		Type DS	Number 21033810101				Rev. C	Page 1/4

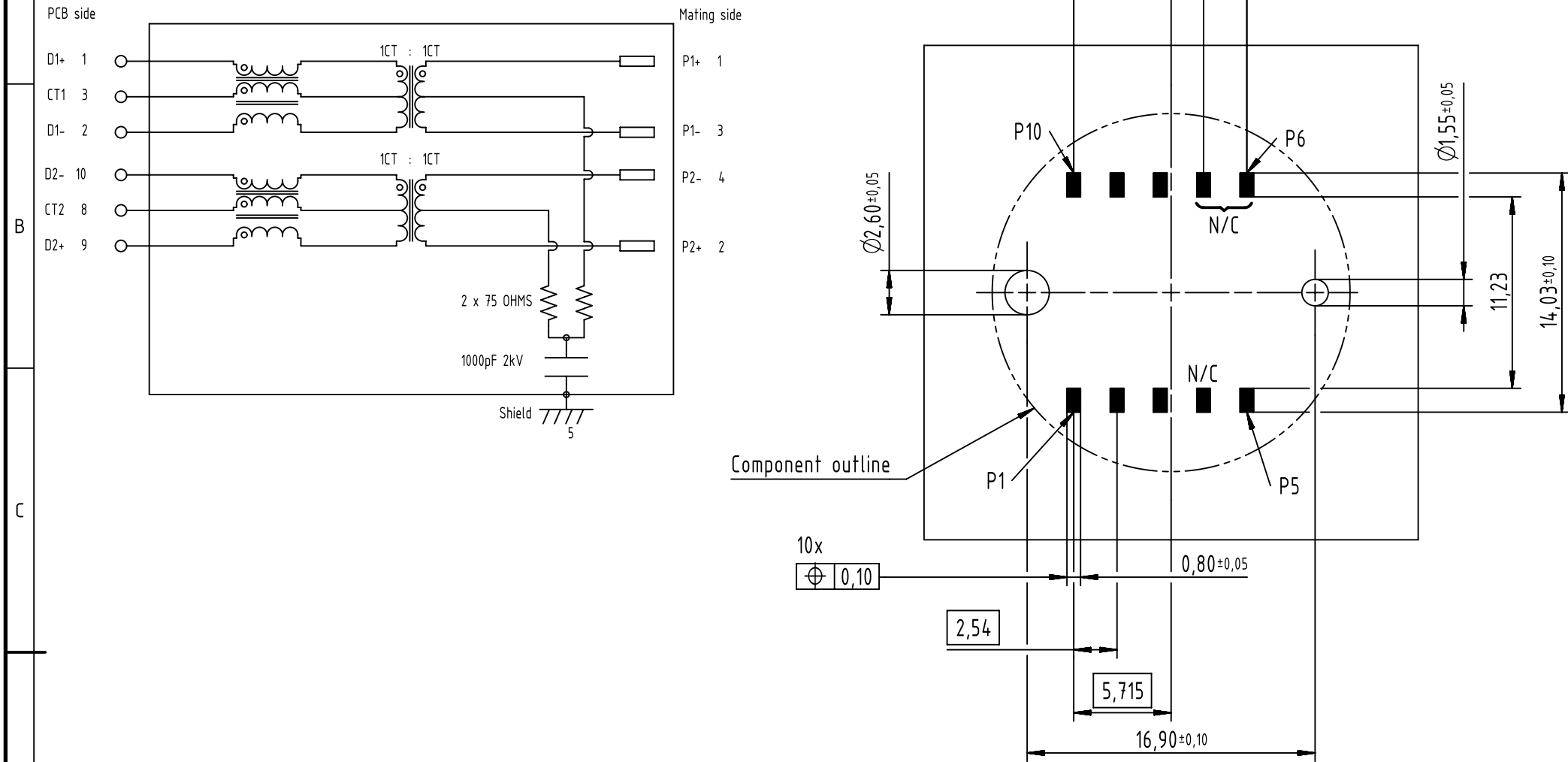
Schematic

Recommended PCB Layout

Electrical Characteristics @+25°C unless otherwise noted
Meets IEEE802.3 specification
RoHS compliant

Parameter	Specification/ Limit Values
Operating Temperature	-40°C - +85°C
Turn Ratio (+/- 2%)	1CT : 1CT
OCL	min 350pH @ 100KHz , 100mV with 8mA bias current
Isolation (Input- Output)	2.25kV VDC , for 60sec. min
	f ≤ 100MHz
Insertion Loss	1.3 dB
Return Loss	9 dB
Crosstalk	30 dB
CMRR	30 dB
CDMR	30 dB

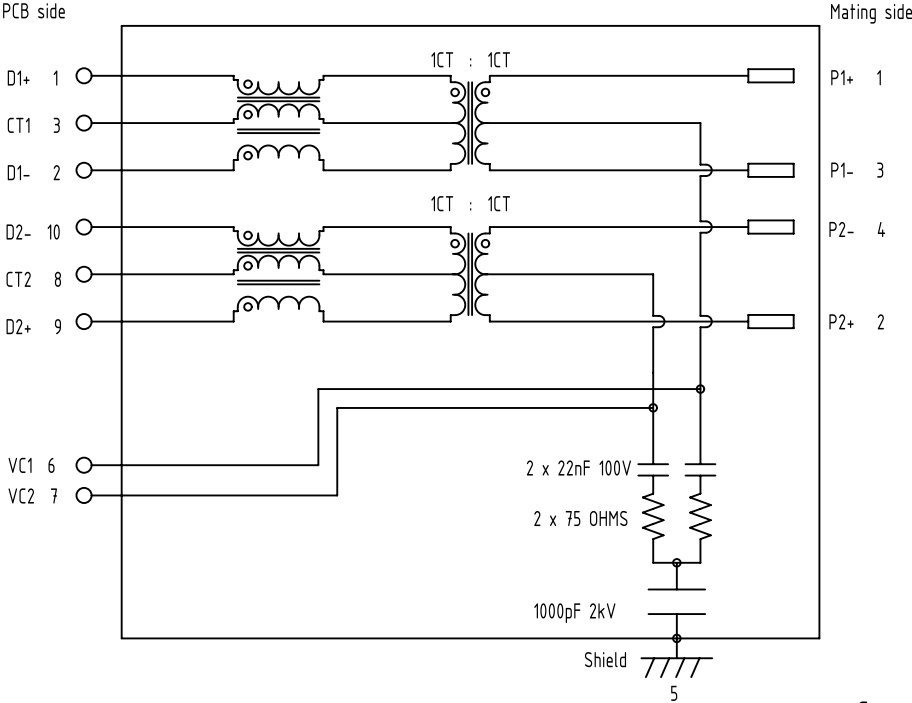
NOTE: 1. f is the frequency in MHz
2. The Product has been tested for DC isolation. HARTING assumes no liability or obligation for AC isolation testing.



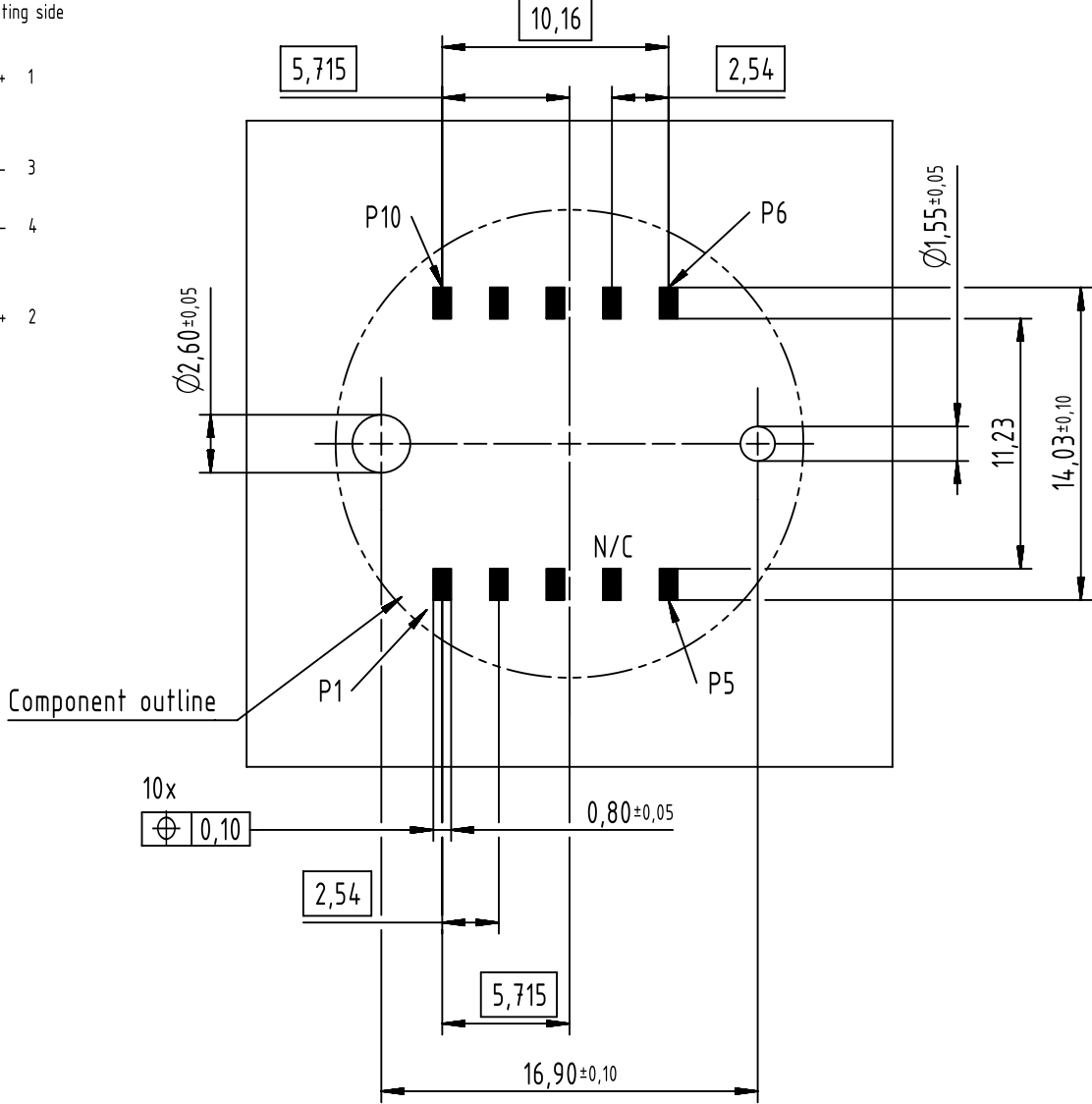
For D-coded without PoE version only
N/C: leave all pins floating. Do not connect to any of the pins to any net

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Schematic



Recommended PCB Layout



Electrical Characteristics @+25°C unless otherwise noted
Meets IEEE802.3 specification
RoHS compliant

Parameter	Specification/ Limit Values
Operating Temperature	-40°C - +85°C
Turn Ratio (+/- 2%)	1CT : 1CT
Current Capacity Pins 1-8/ VC1-VC4	750mA DC
OCL	min 350pH @ 100KHz , 100mV with 8mA bias current
Isolation (Input- Output)	2.25kV VDC , for 60sec. min
	f ≤ 100MHz
Insertion Loss	1.3 dB
Return Loss	9 dB
Crosstalk	30 dB
CMRR	30 dB
CDMR	30 dB

NOTE: 1. f is the frequency in MHz
2. The Product has been tested for DC isolation. HARTING assumes no liability or obligation for AC isolation testing.

For D-coded with PoE+ version only
N/C: leave all pins floating. Do not connect to any of the pins to any net

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TAPE LAYOUT & PACKAGING

RECOMMENDATION FOR SOLDER PROCESSING

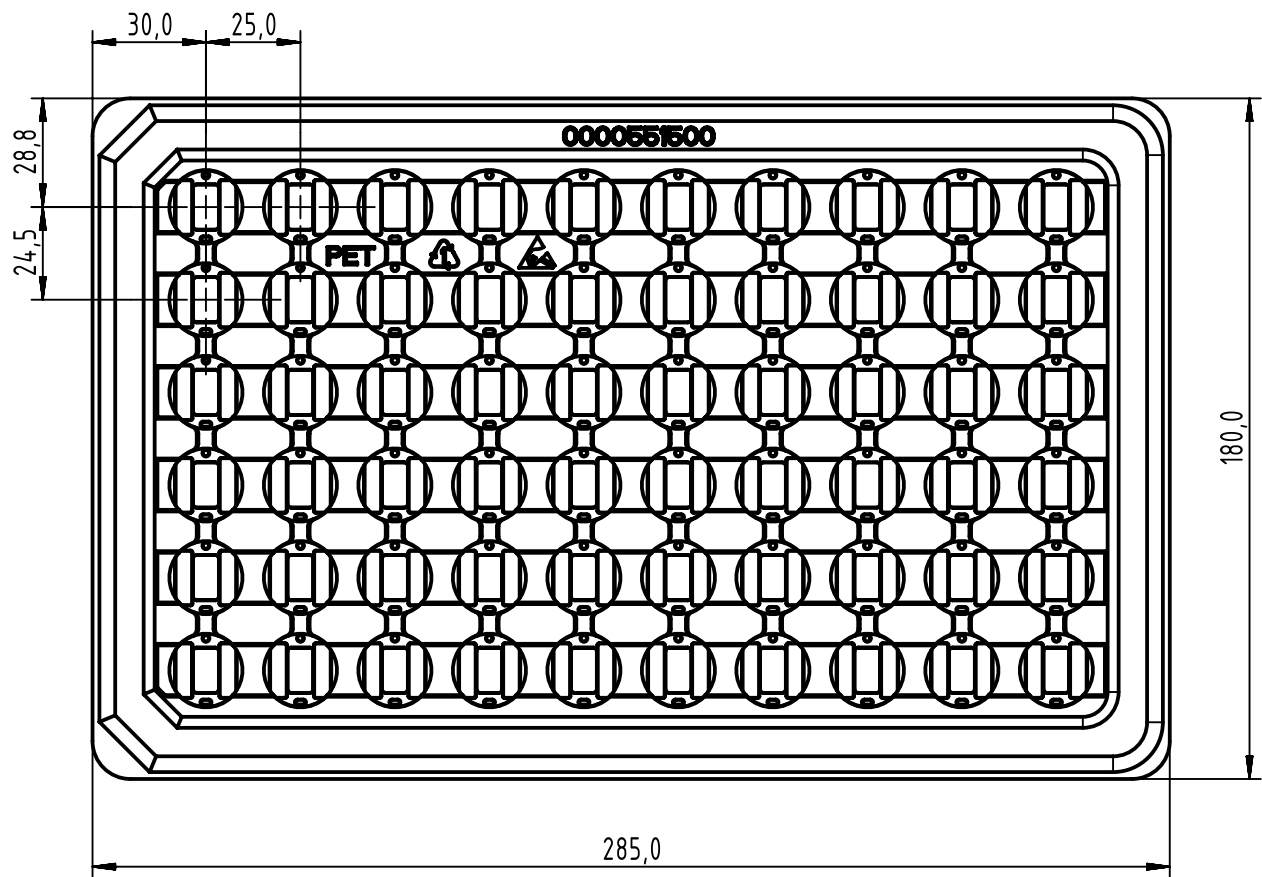
1. Solder paste recommendation
The M12 transformer receptacles connector are solderable with eataablished lead free SAC/SnNi solder but also leaded solder

2. PCB pad plating
The M12 transformer receptacles connector are solderable on lead-free pad surfaces like HAL,NiAu,Immersion Sn.

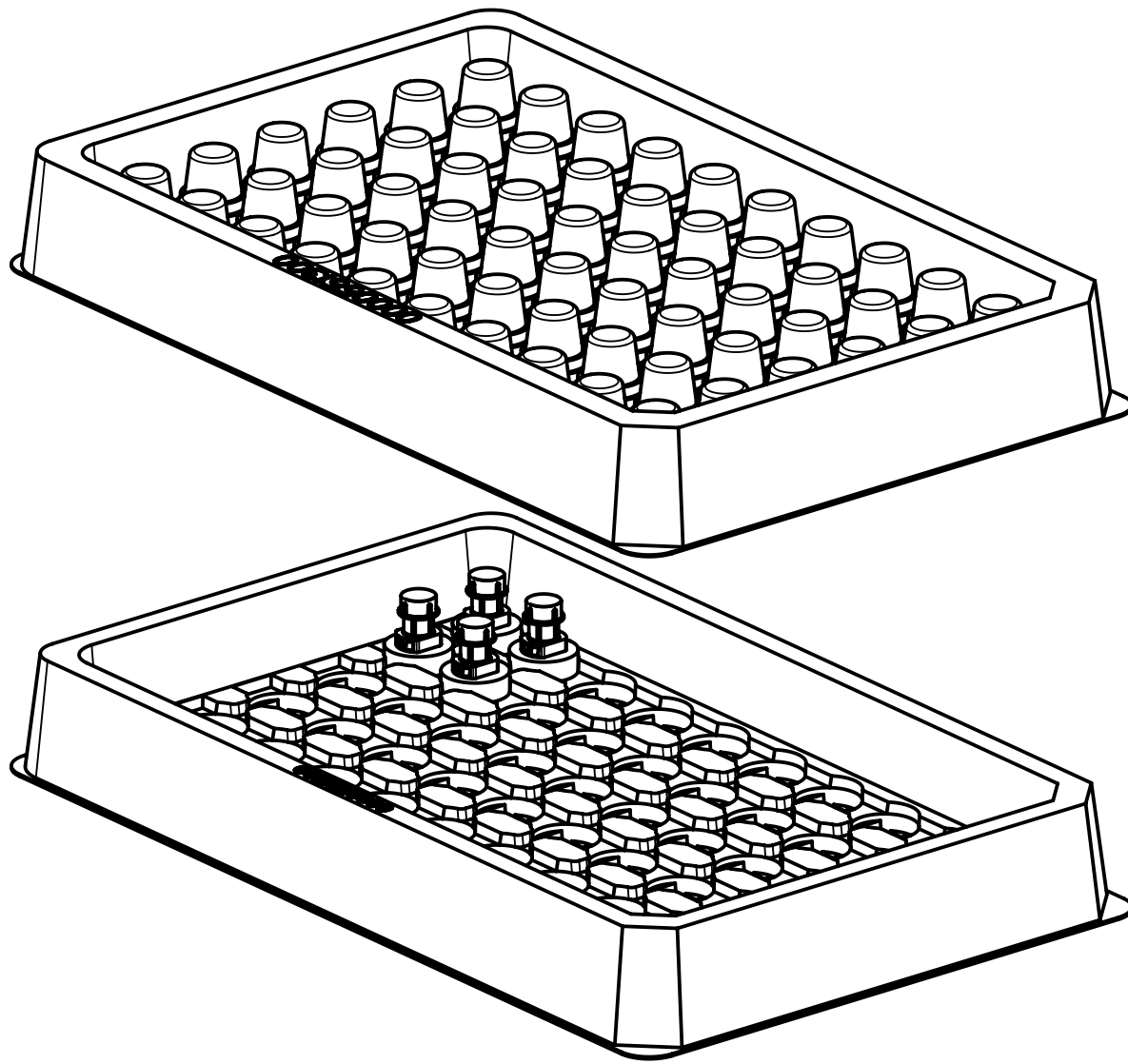
3. Stencil recommendation
The size of the solder stencil apertures is depending on the thickness of the stencil.
In general, the thinner stencils will need larger apertures to result in the required volume of solder paste.
The minimum required solder paste volume for the signal pins is 0,114mm³,For example, this can be achieved with the following stencil data :

Single pin			
Stencil thickness	PCB pad size	proposal stencil aperture size	calculated solder paste volume
120 µm	1,4 x 0,8 mm	1,32 x 0,72 mm	0,114 mm³

HARD TRAY LAYOUT & PACKAGING



APPLICATION INFORMATION



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