



# 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)

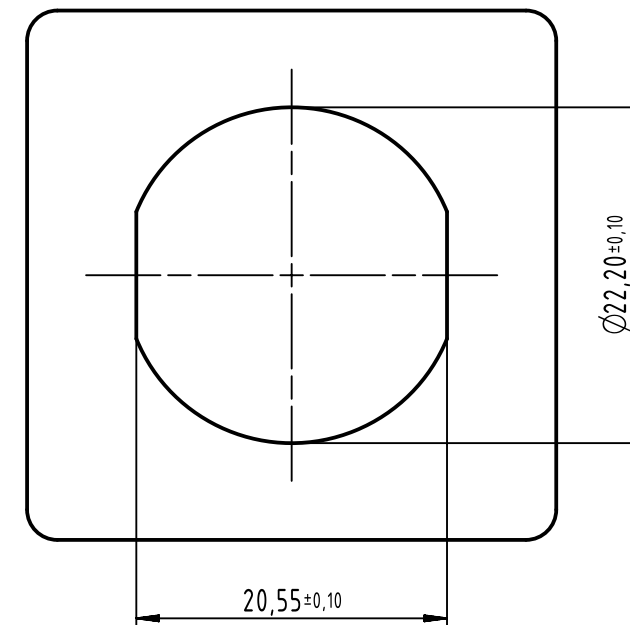
## CONTACT MATERIAL

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

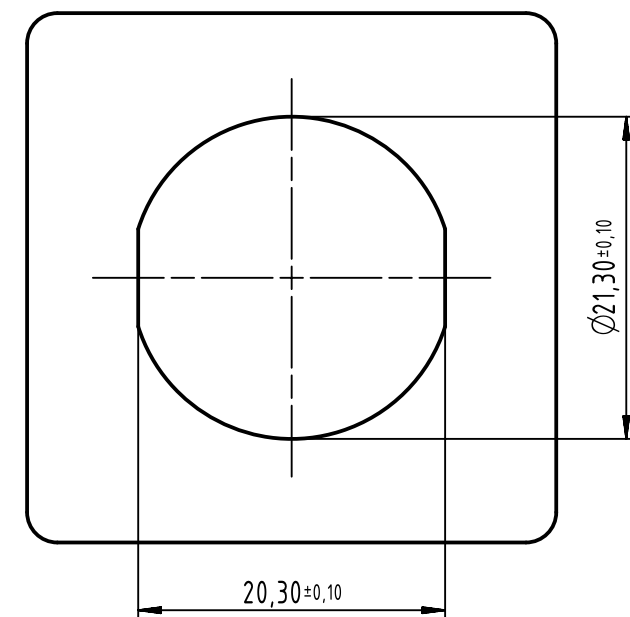
## SHIELDING MATERIAL

Shielding material	Copper alloy
Plating	Tin



## Recommended Panel cut out



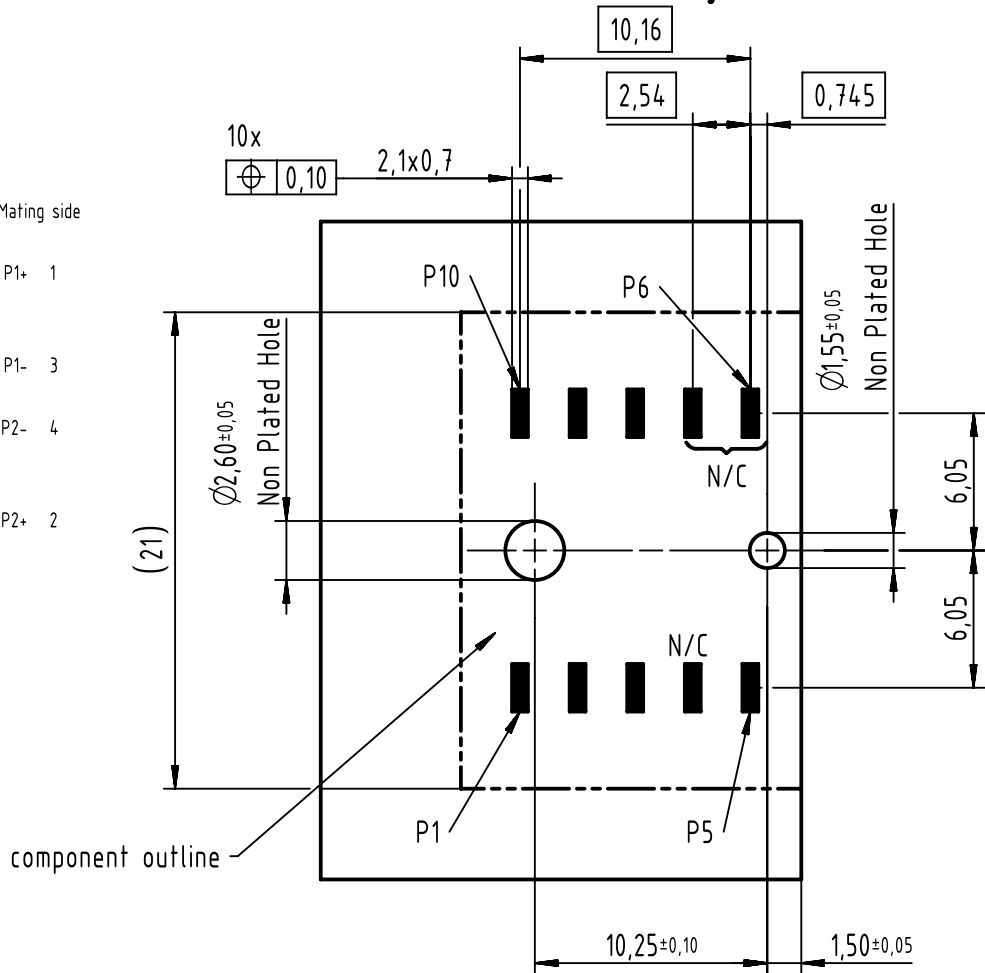
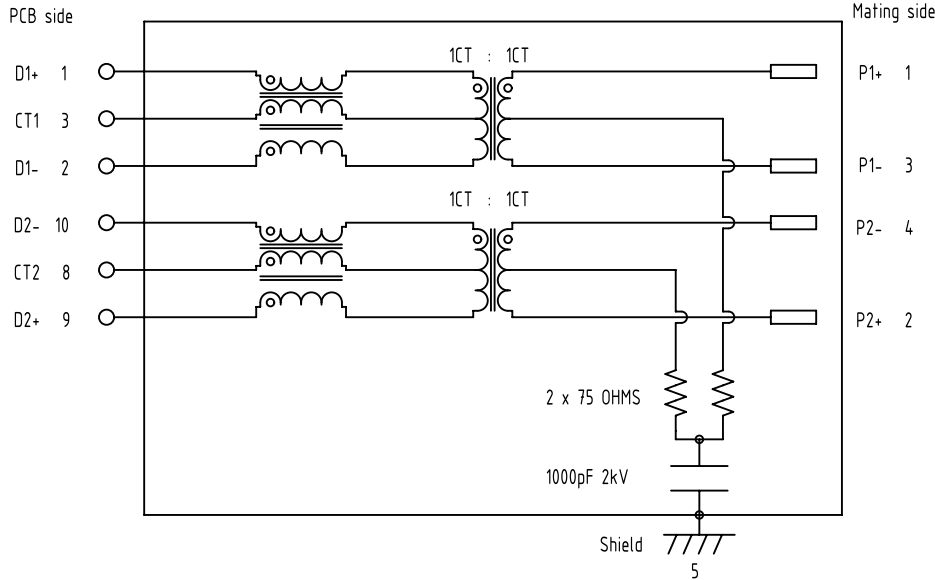
Front mounting use  
Detail see drawing 21033012006



Rear mounting use  
Detail see drawing 21033012007

		All Dimensions in mm		Scale 1:1	Free size tol.	Ref.	
		Original Size DIN A3				Sub.	
	All rights reserved		Created by 402664	Inspected by ZENGO	Standardisation 302077	Date 2021-03-15	State Final Release
	Department EL PD						
HARTING  D-32339 Espelkamp		Title M12 transformer receptacles D-coded angled,SMT					Doc-Key / ECM-Nr. 100723279/UGD/001/E 500000191093
		Type DS	Number 21033810201				Rev. E

## 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 350μH @ 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.

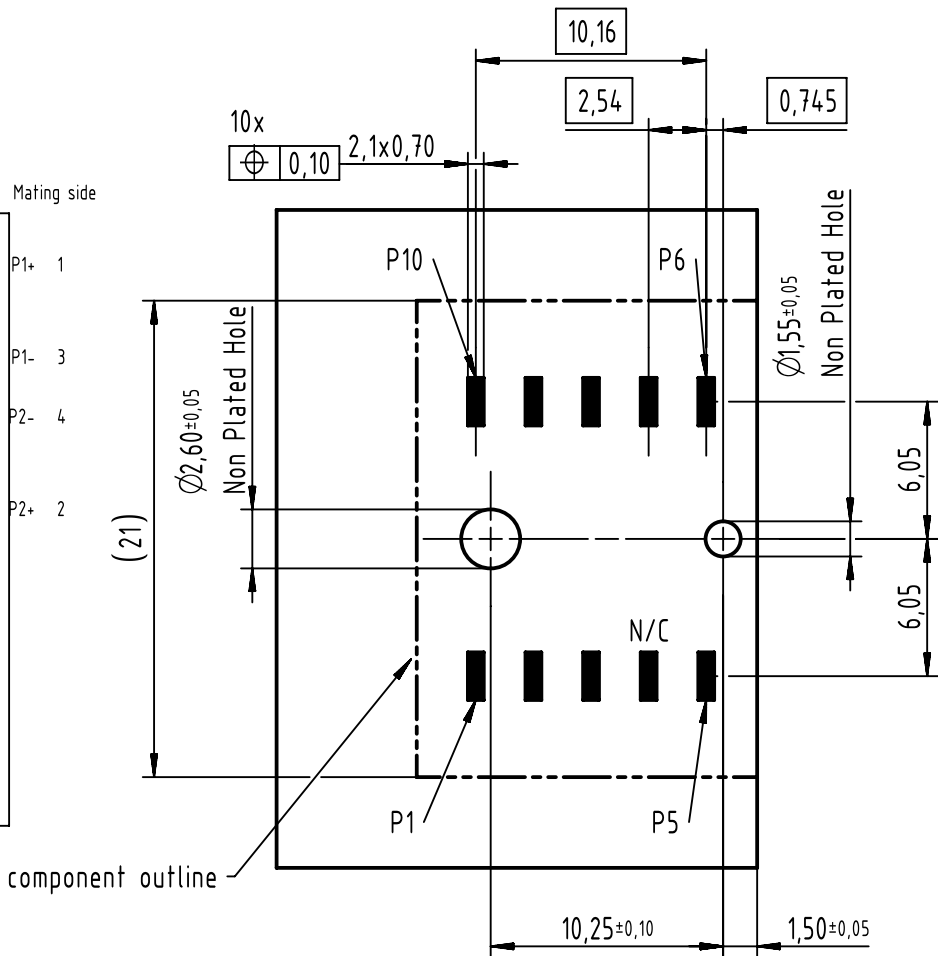
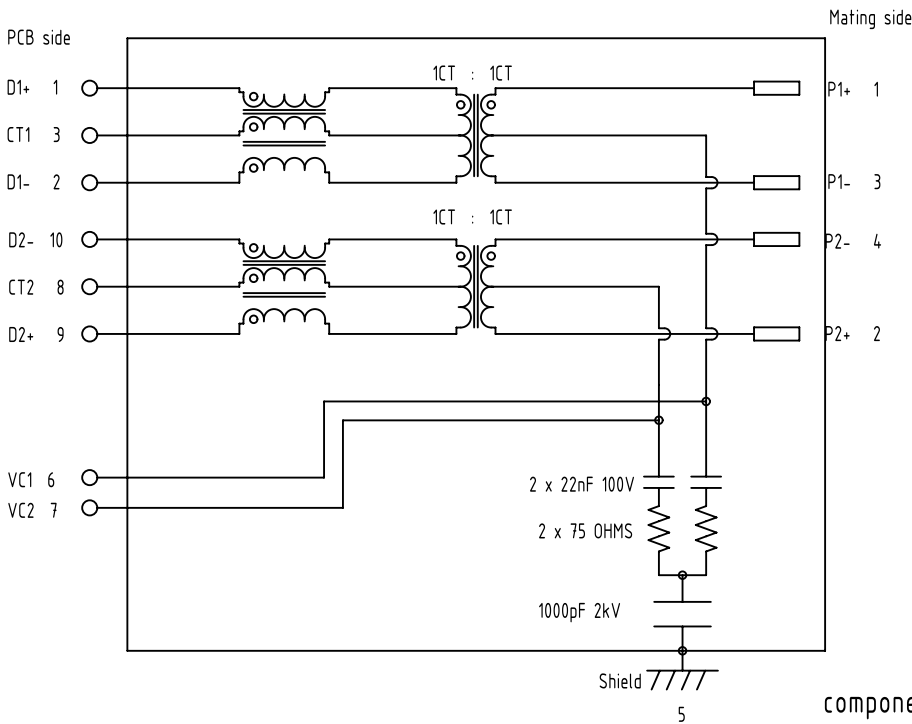
For D-coded without PoE version only

N/C: leave all pins floating. Do not connect to any of the pins to any net

 All Dimensions in mm Original Size DIN A3		Scale 2:1		Free size tol.		Ref.	
						Sub.	
 All rights reserved Department EL PD		Created by 402664		Inspected by ZENGD		Standardisation 302077	
						Date 2021-03-15	
						State Final Release	
HARTING D-32339 Espelkamp		Title M12 transformer receptacles D-coded angled,SMT					Doc-Key / ECM-Nr. 100723279/UGD/001/E 500000191093
		Type DS	Number 21033810201				Rev. E
							Page 2/4

Recommended PCB layout

Schematic

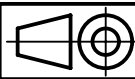


Electrical Characteristics @+25°C unless otherwise noted  
Meets IEEE802.3 specification  
RoHS compliant

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 350µH @ 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



All rights reserved  
Department EL PD

All Dimensions in mm  
Original Size DIN A3

Scale  
2:1

Free size tol.

Created by  
402664

Inspected by  
ZENGO

Standardisation  
302077

Date  
2021-03-15

State  
Final Release

Title  
M12 transformer receptacles D-coded angled,SMT

Doc-Key / ECM-Nr.  
100723279/UGD/001/E  
500000191093

Type  
DS

Number  
21033810201

Rev.  
E

Page  
3/4

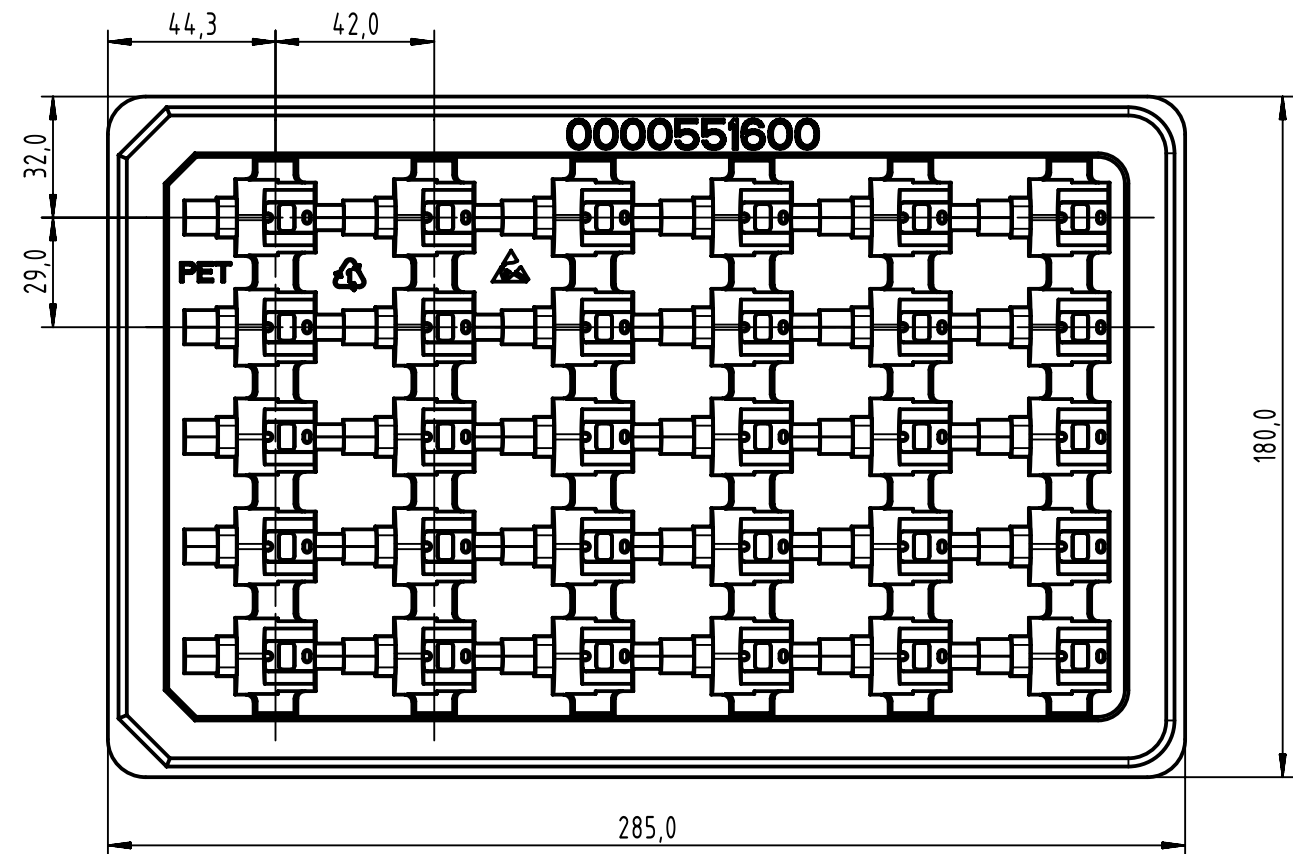
TAPE LAYOUT & PACKAGING

RECOMMENDATION FOR SOLDER PROCESSING

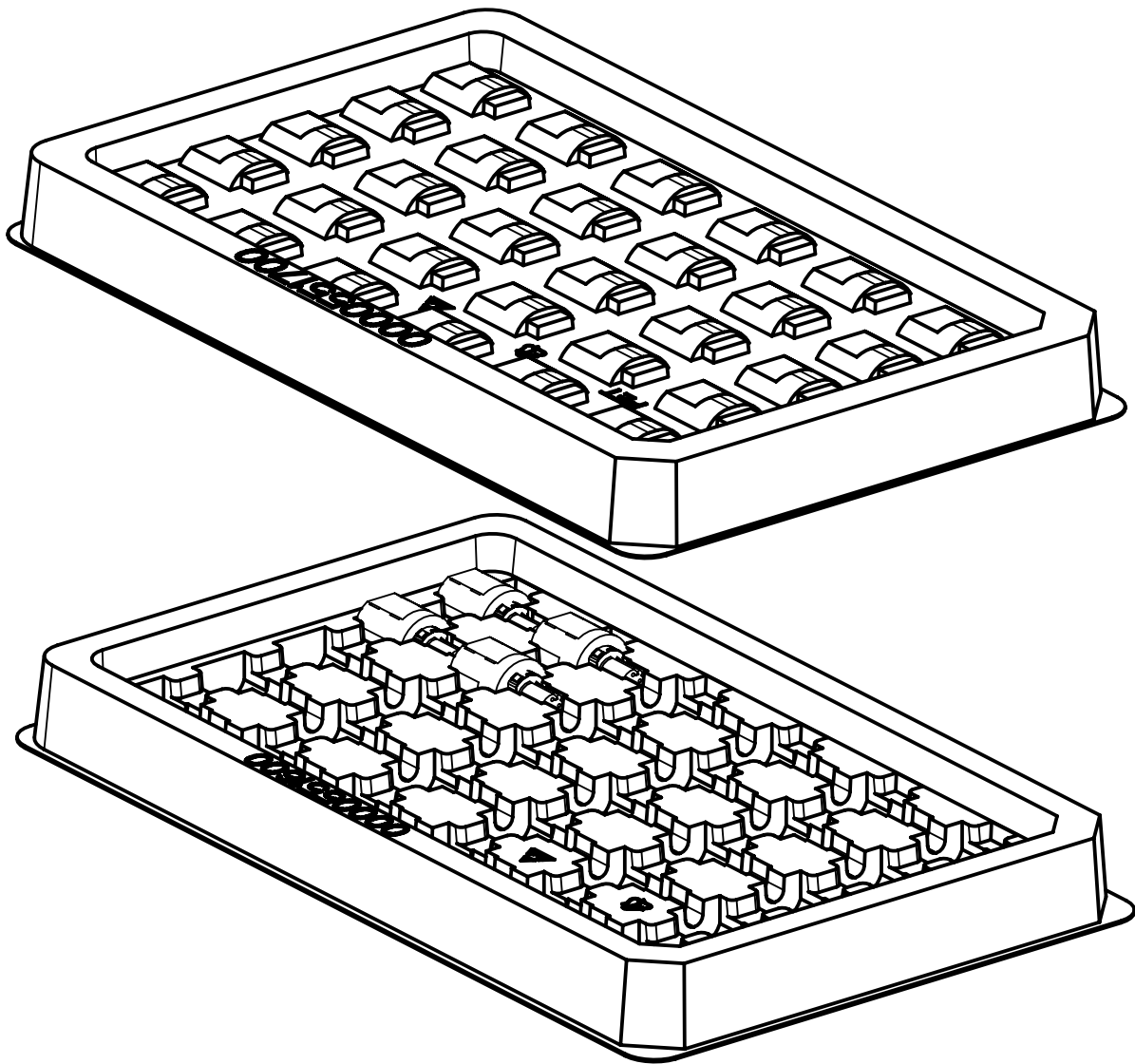
1. PCB pad plating
- The M12 transformer receptacle connectors are solderable on lead-free pad surfaces like HAL,NiAu,Immersion Sn.
2. Stencil recommendation
- The size of the solder stencil apertures is depending on the thickness of the stencil.
- In general, thinner stencils will need larger apertures to result in the required volume of solder paste.
- The minimum required solder paste volume for the signal pins is 0,160mm<sup>3</sup>,For example, this can be achieved with the following stencil data :



Stencil thickness	Single pin		
	PCB pad size	proposal stencil aperture size	calculated solder paste volume
120 µm	2,1 x 0,7 mm	2,05 x 0,65 mm	0,160 mm <sup>3</sup>

HARD TRAY LAYOUT & PACKAGING



APPLICATION INFORMATION



		All Dimensions in mm Original Size DIN A3		Scale 1:1		Free size tol.		Ref.							
								Sub.							
		All rights reserved Department EL PD		Created by 402664		Inspected by ZENGO		Standardisation 302077		Date 2021-03-15		State Final Release			
				Title M12 transformer receptacles D-coded angled,SMT								Doc-Key / ECM-Nr. 100723279/UGD/001/E 500000191093			
HARTING D-32339 Espelkamp				Type DS		Number 21033810201						Rev. E		Page 4/4	

# Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

HARTING:

[21033814421](#) [21033814420](#) [21033814422](#)