

10 9 8 7 6 5 4 3 2 1

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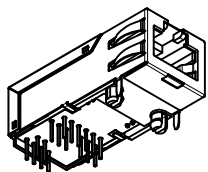
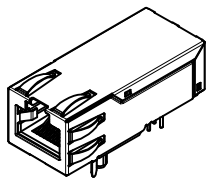
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C

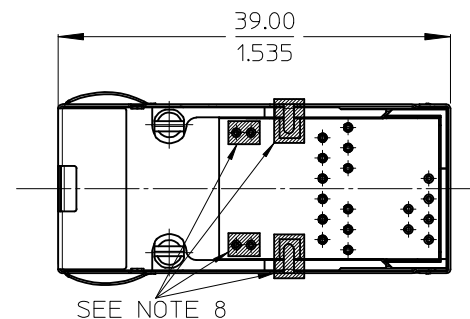
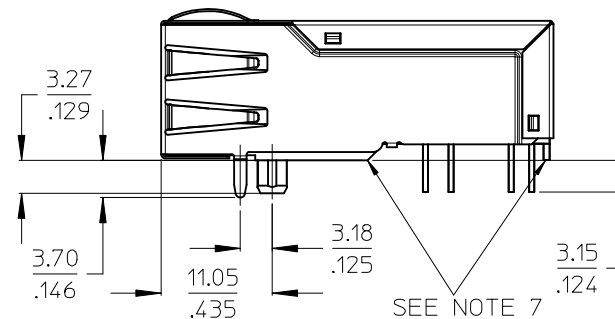
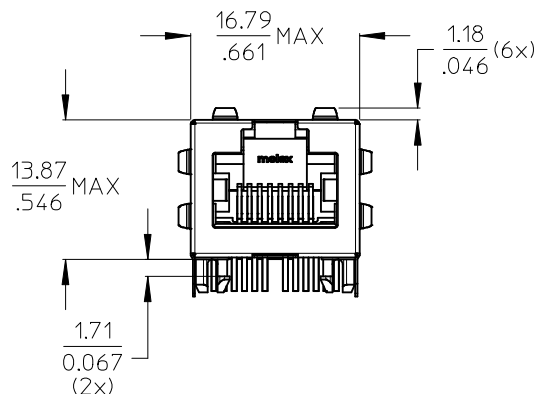
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**PDJack™ GIGABIT SINGLE PORT MAGNETIC JACK WITH
INTEGRATED POWER OVER ETHERNET PLUS POWERED
DEVICE (PD) CONTROLLER AND BRIDGE RECTIFIERS**



SCALE 1:1



NOTES:

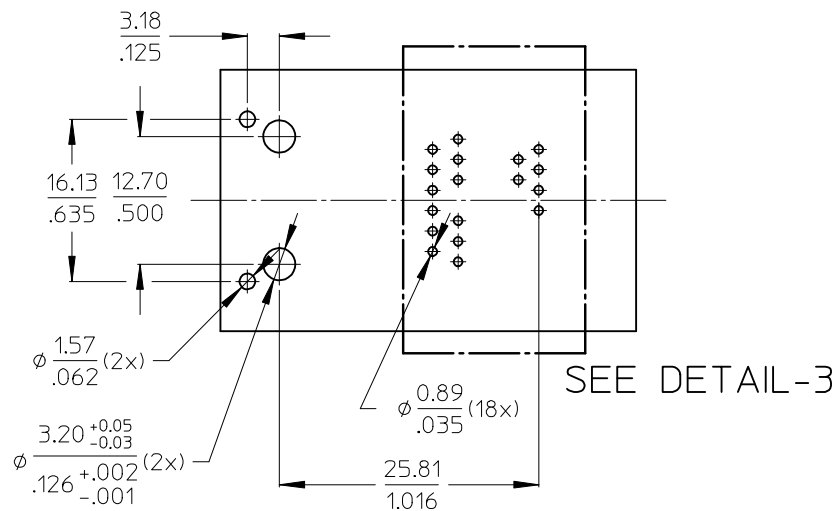
- 1 - SHIELD MATERIAL: STAINLESS STEEL
(GROUND PINS ARE TIN DIPPED)
- 2 - PLASTIC MATERIAL: PBT, BLACK, UL 94V-0
- 3 - EXCEEDS PRODUCT REQUIREMENTS BASED ON
PRODUCT SPECIFICATION PS-85791-001
CONTACTS MATERIAL: PHOSPHOR BRONZE
CONTACT PLATING: GOLD OR GOLD FLASH
OVER PALLADIUM NICKEL
- 4 - MATING INTERFACE ACCORDING TO IEC 60603-7
- 5 - PRODUCT SPECIFICATION: PS-85791-001
- 6 - PACKAGING SPECIFICATION: PK-85759-001
- 7 - STAND OFF TO SYSTEM BOARD
- 8 - STUBBED PINS AND SHIELD LATCHES:
AVOID TO ROUTE TRACES OR
TO PLACE ANY VIAS OR PAD IN THIS AREA
- 9 - RECOMMENDED PCB THICKNESS: 1.6mm / 0.067inch
- 10 - INSCRIPTION MARKED BY LASER:
1st : MOLEX
2st : P/N (SEE BOM)
3rd : DATE CODE(WEEK/YEAR)
UL LOGO (OPTIONAL)

ENTER DESCRIPTION EC NO: MG2011-0056 DRWN: JBADER 2013/02/08 CHKD: MMANGARUDOV 2013/04/05 APPR: SSTEINKE 2014/04/25	DESCRIPTION	QUALITY SYMBOLS ▽=0 ▽=0	GENERAL TOLERANCES (UNLESS SPECIFIED)		DIMENSION STYLE MM ONLY		SCALE 2:1	DESIGN UNITS METRIC	THIRD ANGLE PROJECTION	
				mm	INCH	DRAWN BY	DATE	TITLE GIGABIT POE PLUS PDJACK(TM) 1X1		
			4 PLACES	± ---	± ---	MMANGARUDOV	2012/04/25			
			3 PLACES	± ---	± ---	CHECKED BY	DATE	MOLEX MOLEX INCORPORATED		
			2 PLACES	± 0.25	± ---	JBADER	2012/04/25			
			1 PLACE	± 0.50	± ---	APPROVED BY	DATE			
			ANGULAR ± .5 °		SSTEINKE	2012/06/18	DOCUMENT NO.		SHEET NO.	
DRAFT WHERE APPLICABLE MUST REMAIN WITHIN DIMENSIONS		SEE SHEET 3		SD-85791-002		1 OF 3				
D	REV	THIS DRAWING CONTAINS INFORMATION THAT IS PROPRIETARY TO MOLEX INCORPORATED AND SHOULD NOT BE USED WITHOUT WRITTEN PERMISSION								

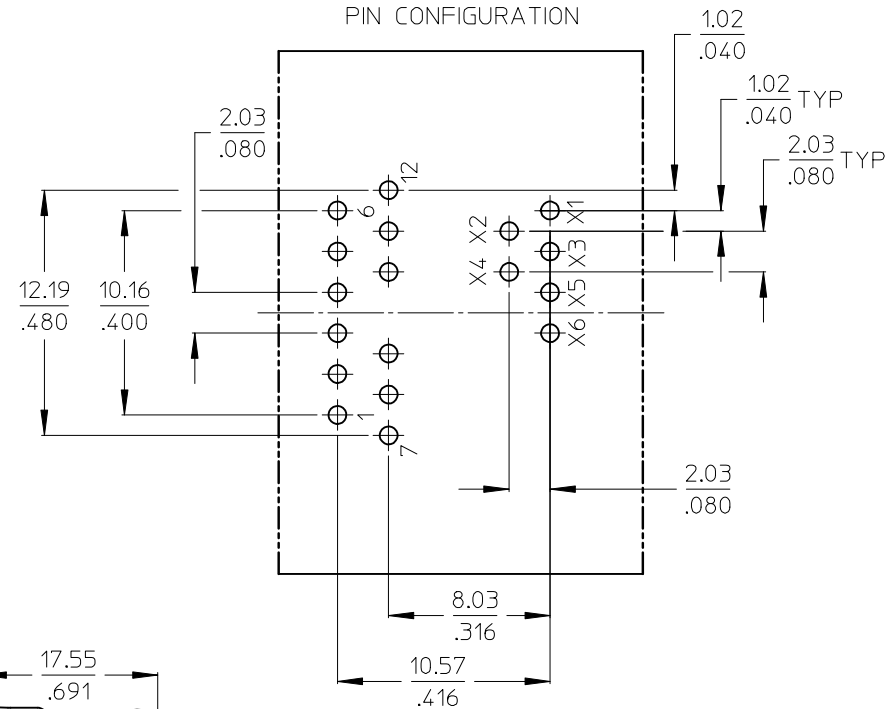
9 8 7 6 5 4 3 2 1

10 9 8 7 6 5 4 3 2 1

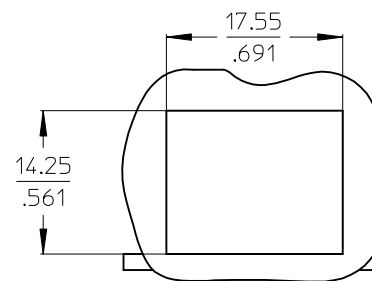
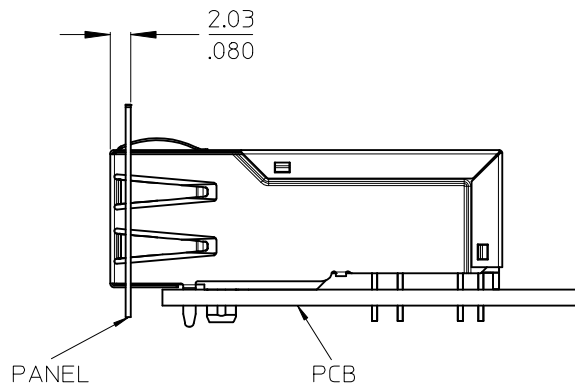
SUGGESTED BOARD LAYOUT - COMPONENT SIDE



PIN CONFIGURATION



DETAIL-3
SCALE 4:1



SUGGESTED PANEL CUTOUT

ENTER DESCRIPTION EC NO: MG2011-0056 DRWN: JBADER 2013/02/08 CHKD: MMANGARUDOV 2013/04/05 APPR: SSTEINKE 2014/04/25			QUALITY SYMBOLS ▽=0 ◻=0	GENERAL TOLERANCES (UNLESS SPECIFIED)		DIMENSION STYLE MM ONLY		SCALE 2:1	DESIGN UNITS METRIC	THIRD ANGLE PROJECTION		
						DRAWN BY DATE		TITLE GIGABIT POE PLUS PDJACK(TM) 1X1				
						MMANGARUDOV 2012/04/25						
						CHECKED BY DATE		MOLEX INCORPORATED				
						JBADER 2012/04/25						
		APPROVED BY DATE		molex		SD-85791-002						
		SSTEINKE 2012/06/18		DOCUMENT NO.							SHEET NO. 2 OF 3	
		ANGULAR ± .5 °		MATERIAL NO.		SEE SHEET 3						
		DRAFT WHERE APPLICABLE MUST REMAIN WITHIN DIMENSIONS		SIZE A3							THIS DRAWING CONTAINS INFORMATION THAT IS PROPRIETARY TO MOLEX INCORPORATED AND SHOULD NOT BE USED WITHOUT WRITTEN PERMISSION	

F

E

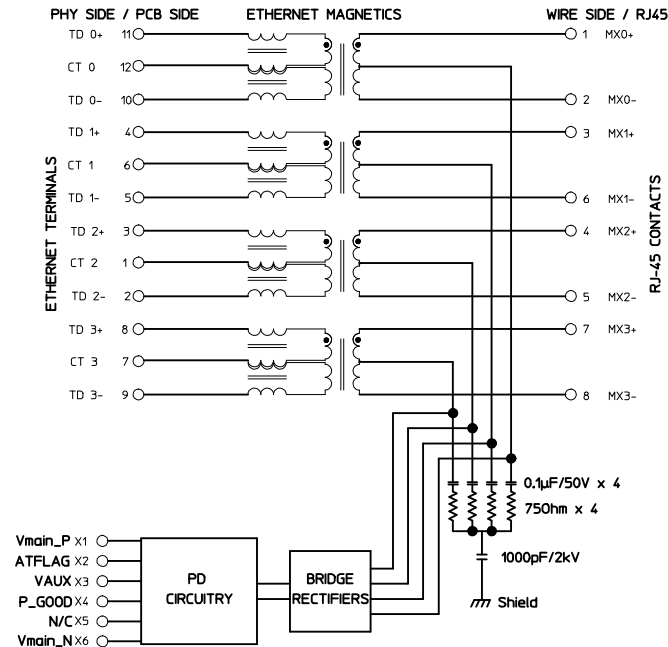
D

C

B

A

Electrical Specifications @25°C		
Operating temperature (SEE PART NUMBER)		
Description	Value	
OCL POE+TRANSF. 20mA bias	350uH min.	0/70°(0/55°C)class4)
Turns Ratio	1CT:1CT	
Insertion Loss		Typical Values (dB max.)
Frequency (MHz)	Limits (dB max.)	0.5 @ 10MHz
1.0-9.9 MHz	0.4+0.1*log(F)	0.7 @ 50MHz
10-49.9 MHz	0.5+0.3*log(F/10)	1.0 @ 80MHz
50-79.9 MHz	1+1.4*log(F/80)	1.3 @ 100MHz
80-100 MHz	1.3+3*log(F/100)	
Return Loss		TYPICAL Values (dB min.)
Frequency (MHz)	Limits (dB min.)	27 @ 10MHz
1-9.9 MHz	27dB min.	10 @ 100MHz
10-100 MHz	27-17*log(F/10)	
CMR		TYPICAL Values (dB min.)
Frequency (MHz)	Limits (dB min.)	34 @ 10MHz
1-9.9 MHz	34dB min.	27 @ 80MHz
10-79.9 MHz	27dB min.	21.5 @ 200MHz
80-199.9 MHz	27-14.5*log(F/80)	10 @ 400MHz
200-399.9 MHz	21.5-39*log(F/200)	10 @ 1000MHz
400-1000 MHz	10	
NEXT		TYPICAL Values (dB min.)
Frequency (MHz)	Limits (dB min.)	50 @ 6MHz
1-5.9 MHz	50	34 @ 50MHz
6-49.9 MHz	45-16*log(F/10)	25 @ 100MHz
50-100 MHz	25-30*log(F/100)	
Isolation PHY to Wire side	2.25kVDC/60sec	



PIN	NAME	FUNCTION
X1	Vmain_P	Output voltage from PDJack(TM)
X2	ATFLAG (LOW)	Indicates 2 Event Classification was detected. Indicates PoE+ power levels available (Class 4 devices only)
X3	VAUX	Nominal voltage of 10.5V. Used as a startup supply for an external DC/DC controller.
X4	P_GOOD (LOW)	Indicates power good status
X5	N/C	
X6	Vmain_N	Vmain reference

PART NUMBER	CONNECTOR CONFIGURATION	CLASS / MAX POWER	OPERATING TEMPERATURE
85791-0020	GIGABIT POE PLUS PDJack(TM)-ICM	0 / 13W	0°C TO +70°C
85791-1020	GIGABIT POE PLUS PDJack(TM)-ICM	1 / 3,84W	0°C TO +70°C
85791-2020	GIGABIT POE PLUS PDJack(TM)-ICM	2 / 6,49W	0°C TO +70°C
85791-3020	GIGABIT POE PLUS PDJack(TM)-ICM	3 / 13W	0°C TO +70°C
85791-4020	GIGABIT POE PLUS PDJack(TM)-ICM	4 / 25,5W	0°C TO +55°C

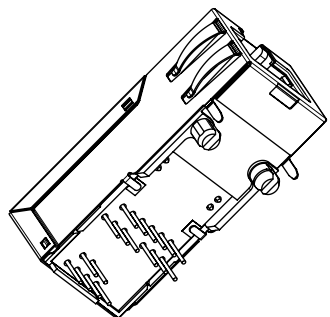
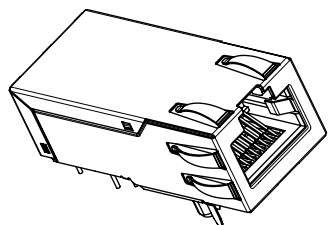
ENTER DESCRIPTION	REV
EC NO: MG2011-0056 DRWN:JBADER 2013/02/08 CHKD:MMANGARUDOV 2013/04/05 APPR:SSTEINKE 2014/04/25	D

QUALITY SYMBOLS
▽=0 ▽=0

GENERAL TOLERANCES (UNLESS SPECIFIED)
mm INCH
4 PLACES ± --- ± ---
3 PLACES ± --- ± ---
2 PLACES ± 0.25 ± ---
1 PLACE ± 0.50 ± ---
ANGULAR ± .5 °
DRAFT WHERE APPLICABLE MUST REMAIN WITHIN DIMENSIONS

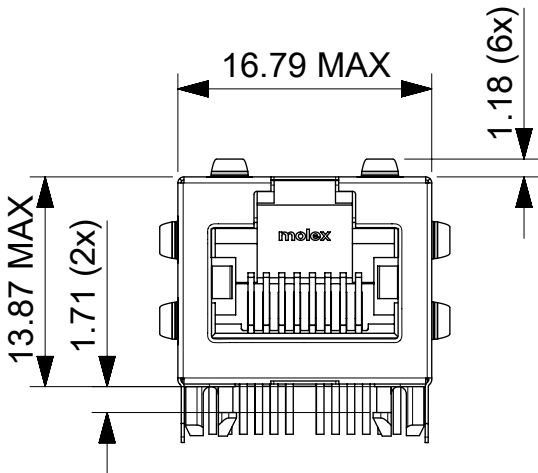
DIMENSION STYLE	SCALE	DESIGN UNITS
MM ONLY	5:1	METRIC
DRAWN BY	DATE	TITLE
MMANGARUDOV	2012/04/25	GIGABIT POE PLUS PDJACK(TM) 1X1
CHECKED BY	DATE	
JBADER	2012/04/25	
APPROVED BY	DATE	
SSTEINKE	2012/06/18	
MATERIAL NO.		
SEE BOM		

MOLEX INCORPORATED	DOCUMENT NO.	SHEET NO.
SD-85791-002	3 OF 3	
THIS DRAWING CONTAINS INFORMATION THAT IS PROPRIETARY TO MOLEX INCORPORATED AND SHOULD NOT BE USED WITHOUT WRITTEN PERMISSION		

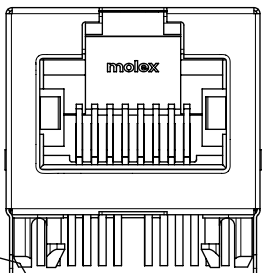


SCALE 1:1

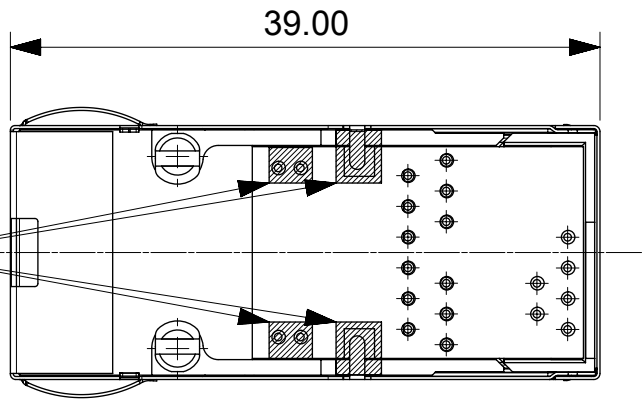
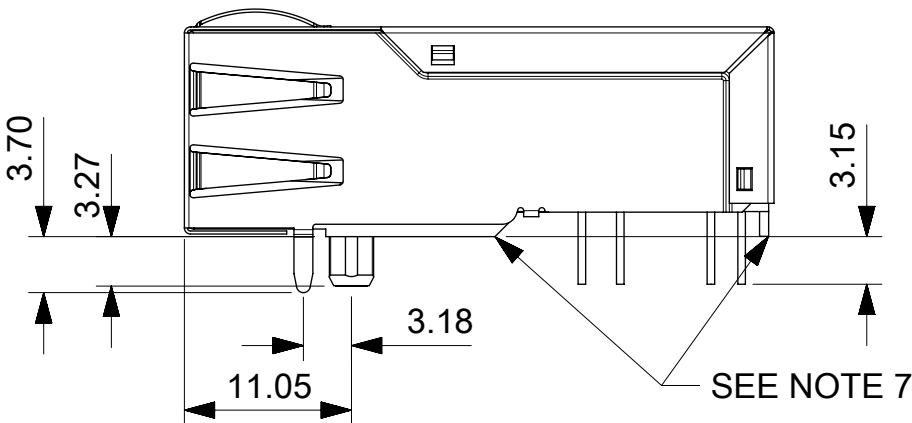
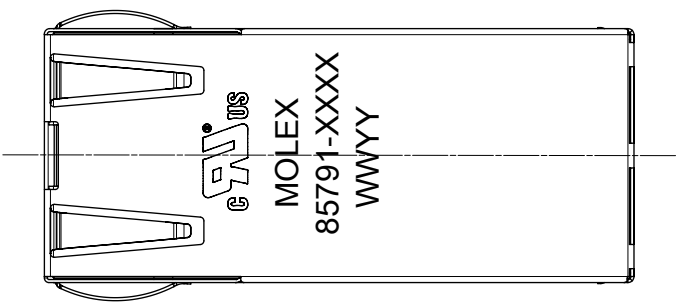
PDJack™ GIGABIT SINGLE PORT MAGNETIC JACK WITH
INTEGRATED POWER OVER ETHERNET PLUS POWERED
DEVICE (PD) CONTROLLER AND BRIDGE RECTIFIERS



NO SHIELD
SPRING VERSION
85791-4420



PRE-RELEASE
REFERENCE
USE ONLY



- NOTES:
- 1 - SHIELD MATERIAL: STAINLESS STEEL
(GROUND PINS ARE TIN DIPPED)
 - 2 - PLASTIC MATERIAL: PBT, BLACK, UL 94V-0
 - 3 - RJ45 TERMINALS MATERIAL: COPPER ALLOY
CONTACT PLATING: 0.76 MICROMETER GOLD
OVER 1.9 MICROMETER NICKEL
PHY TERMINALS: TIN PLATED
 - 4 - MATING INTERFACE ACCORDING TO IEC 60603-7
 - 5 - PRODUCT SPECIFICATION: PS-85791-001
 - 6 - PACKAGING SPECIFICATION: PK-85759-001
 - 7 - STAND OFF TO SYSTEM BOARD
 - 8 - STUBBED PINS AND SHIELD LATCHES:
AVOID TO ROUTE TRACES OR
TO PLACE ANY VIAS OR PAD IN THIS AREA
 - 9 - RECOMMENDED PCB THICKNESS: 1.6mm
 - 10 - INSCRIPTION MARKED BY LASER:
UL LOGO
1st : MOLEX
2st : P/N (SEE BOM)
3rd : DATE CODE(WEEK/YEAR)

THIS DRAWING CONTAINS INFORMATION THAT IS PROPRIETARY TO MOLEX INCORPORATED AND SHOULD NOT BE USED WITHOUT WRITTEN PERMISSION												
EC DESCRIPTION EC NO: 102944 DRWN: MFURKEL CHK'D: APPR: F	2015/09/28	QUALITY SYMBOLS	GENERAL TOLERANCES (UNLESS SPECIFIED)		DIMENSION UNITS		SCALE		molex			
					MM		2:1					
			= 0	ANGULAR TOL ± 0.5 °		DRWN BY		DATE		GIGABIT POE PLUS PDJACK (TM) 1X1		
			= 0			MFURKEL		2015/06/10				
			= 0	CHK'D BY		DATE						
			= 0	APPR BY		DATE						
				4 PLACES	±	DRAWING SIZE		THIRD ANGLE PROJECTION		PRODUCT CUSTOMER DRAWING		
				3 PLACES	±					SERIES	MATERIAL NUMBER	CUSTOMER
			= 0	2 PLACES	± 0.25					85791	SEE BOM / SHEET 3	
			= 0	1 PLACE	± 0.5	A3				DOCUMENT NUMBER		DOC TYPE
	= 0	0 PLACES	±	857910020						PSD	000	1 OF 3
	= 0	DRAFT WHERE APPLICABLE MUST REMAIN WITHIN DIMENSIONS										

Technical drawing of a mechanical part with dimensions and tolerances. The drawing includes a top view and a side view. The top view shows a rectangular part with a central circular feature and a smaller circular feature. The side view shows the profile of the part with a central circular feature and a smaller circular feature. The dimensions and tolerances are as follows:

- Top view dimensions:
 - Horizontal dimensions: 3.18 ± 0.05 , 15.24 ± 0.05 , 17.78 ± 0.05 , 23.77 ± 0.05 , 25.81 ± 0.05
 - Vertical dimensions: 16.13 ± 0.05 , 12.70 ± 0.05
- Side view dimensions:
 - Horizontal dimensions: 15.24 ± 0.05 , 17.78 ± 0.05 , 23.77 ± 0.05 , 25.81 ± 0.05
- Feature specifications:
 - Central circular feature: $\varnothing 0.89^{+0.05}_{-0.03}$ (x18)
 - Smaller circular feature: $\varnothing 1.57^{+0.05}_{-0.03}$ (2x)
 - Another smaller circular feature: $\varnothing 3.20^{+0.05}_{-0.03}$ (x2)



DETAIL X
SCALE 4:1

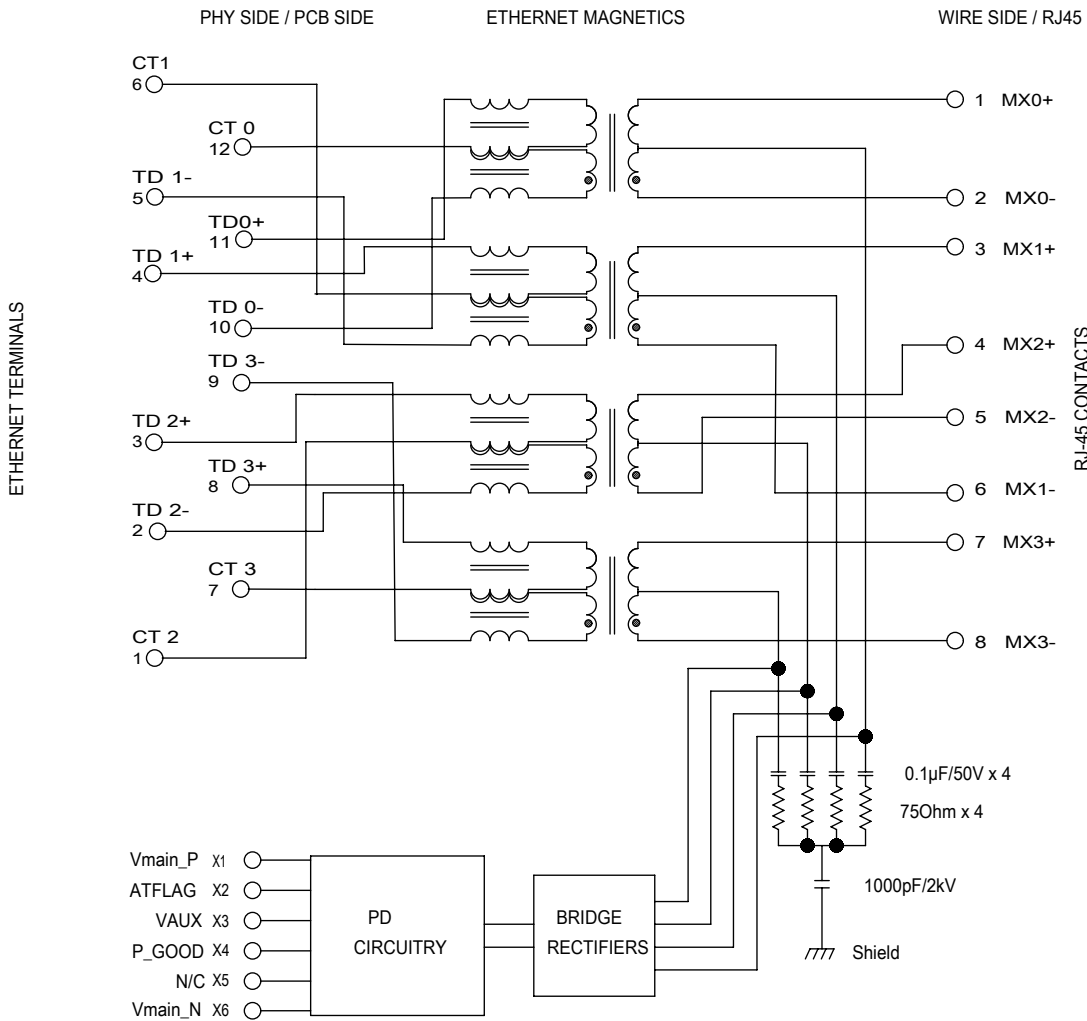
12.19 ± 0.05
10.16 ± 0.05
2.03 ± 0.05
1.02 ± 0.05
1.02 ± 0.05 TYP
2.03 ± 0.05 TYP
2.03 REF
8.03 REF
10.57 REF



PRE-RELEASE
REFERENCE
USE ONLY

THIS DRAWING CONTAINS INFORMATION THAT IS PROPRIETARY TO MOLEX INCORPORATED AND SHOULD NOT BE USED WITHOUT WRITTEN PERMISSION																
EC DESCRIPTION EC NO: 102944 DRWN: MFURKEL CHK'D: APPR:	2015/09/28	QUALITY SYMBOLS	GENERAL TOLERANCES (UNLESS SPECIFIED)		DIMENSION UNITS		SCALE		molex GIGABIT POE PLUS PDJACK (TM) 1X1							
		MM			2:1											
		= 0	ANGULAR TOL ± 0.5 °		DRWN BY		DATE									
		= 0			MFURKEL		2015/06/10									
		= 0	4 PLACES	±	CHK'D BY		DATE		PRODUCT CUSTOMER DRAWING							
		= 0	3 PLACES	±	APPR BY		DATE									
		= 0	2 PLACES	± 0.25	DRAWING SIZE		THIRD ANGLE PROJECTION								SERIES	
		= 0	1 PLACE	± 0.5					85791		SEE BOM / SHEET 3					
		= 0	0 PLACES	±					DOCUMENT NUMBER		DOC TYPE		DOC PART		SHEET NUMBER	
		= 0	DRAFT WHERE APPLICABLE MUST REMAIN WITHIN DIMENSIONS		A3				857910020		PSD		000		2 OF 3	
= 0																

9	8	7	6
Electrical Specifications @25°C			
Operating temperature (SEE PART NUMBER)			
Description	VALUE		
OCL POE+TRANSF. 20mA bias	350µH min.	0/70°(0/55°CClass4)	
Turns Ratio	1CT:1CT		
Insertion Loss		Typical Values (dB max.)	
Frequency (MHz)	Limits (dB max.)	0.5 @ 10MHz	
1.0-9.9 MHz	0.4+0.1*log(F)	0.7 @ 50MHz	
10-49.9 MHz	0.5+0.3*log(F/10)	1.0 @ 80MHz	
50-79.9 MHz	1+1.4*log(F/80)	1.3 @ 100MHz	
80-100 MHz	1.3+3*log(F/100)		
Return Loss		TYPICAL Values (dB min.)	
Frequency (MHz)	Limits (dB min.)	27 @ 10MHz	
1-9.9 MHz	27dB min.	10 @ 100MHz	
10-100 MHz	27-17*log(F/10)		
CMR		TYPICAL Values (dB min.)	
Frequency (MHz)	Limits (dB min.)	34 @ 10MHz	
1-9.9 MHz	34dB min.	27 @ 80MHz	
10-79.9 MHz	27dB min.	21.5 @ 200MHz	
80-199.9 MHz	27-14.5*log(F/80)	10 @ 400MHz	
200-399.9 MHz	21.5-39*log(F/200)	10 @ 1000MHz	
400-1000 MHz	10		
NEXT		TYPICAL Values (dB min.)	
Frequency (MHz)	Limits (dB min.)	50 @ 6MHz	
1-5.9 MHz	50	34 @ 50MHz	
6-49.9 MHz	45-16*log(F/10)	25 @ 100MHz	
50-100 MHz	25-30*log(F/100)		
Isolation PHY to Wire side	2.25kVDC/60sec		



PIN	NAME	FUNCTION
X1	Vmain_P	Output voltage from PDIack(TM)
X2	ATFLAG (LOW)	Indicates 2 Event Classification was detected. Indicates PoE+ power levels available (Class 4 devices only)
X3	VAUX	Nominal voltage of 10.5V. Used as a startup supply for an external DC/DC controller.
X4	P_GOOD (LOW)	Indicates power good status
X5	N/C	
X6	Vmain_N	Vmain reference

PART NUMBER	CONNECTOR CONFIGURATION	CLASS / MAX POWER	OPERATING TEMPERATURE
857910020	GIGABIT POE PLUS PDIack(TM)-ICM	0 / 13W	0°C TO +70°C
857911020	GIGABIT POE PLUS PDIack(TM)-ICM	1 / 3,84W	0°C TO +70°C
857912020	GIGABIT POE PLUS PDIack(TM)-ICM	2 / 6,49W	0°C TO +70°C
857913020	GIGABIT POE PLUS PDIack(TM)-ICM	3 / 13W	0°C TO +70°C
857914020	GIGABIT POE PLUS PDIack(TM)-ICM	4 / 25,5W	0°C TO +55°C
857914420	GIGABIT POE PLUS PDIack(TM)-ICM NO SHIELD SPRINGS / PAGE 1	4 / 25,5W	0°C TO +55°C

PRE-RELEASE
REFERENCE
USE ONLY

THIS DRAWING CONTAINS INFORMATION THAT IS PROPRIETARY TO MOLEX INCORPORATED AND SHOULD NOT BE USED WITHOUT WRITTEN PERMISSION																			
EC DESCRIPTION EC NO: 102944 DRWN: MFURKEL CHK'D: APPR:		2015/09/28		QUALITY SYMBOLS		GENERAL TOLERANCES (UNLESS SPECIFIED) ANGULAR TOL ± 0.5 ° 4 PLACES ± 3 PLACES ± 2 PLACES ± 0.25 1 PLACE ± 0.5 0 PLACES ± DRAFT WHERE APPLICABLE MUST REMAIN WITHIN DIMENSIONS		DIMENSION UNITS		SCALE		molex GIGABIT POE PLUS PDJACK (TM) 1X1							
				MM				5:1											
				DRWN BY				DATE											
										MFURKEL		2015/06/10							
										CHK'D BY		DATE							
										APPR BY		DATE		PRODUCT CUSTOMER DRAWING					
										SERIES		MATERIAL NUMBER				CUSTOMER			
										85791		SEE BOM / SHEET 3							
										DOCUMENT NUMBER				DOC TYPE		DOC PART		SHEET NUMBER	
				857910020				PSD		000		3 OF 3							