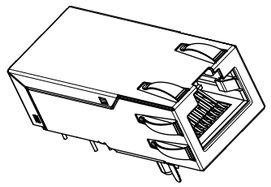
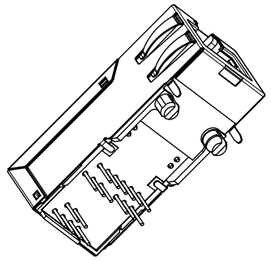
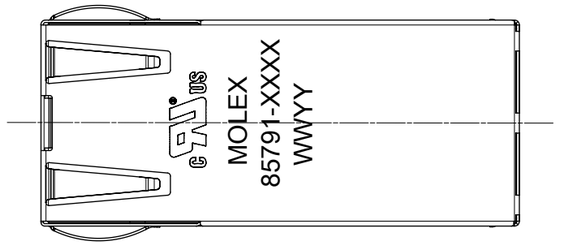
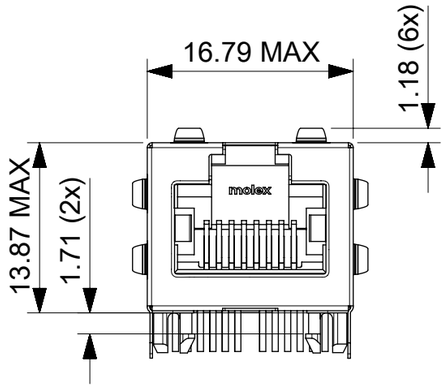
PDJack™ GIGABIT SINGLE PORT MAGNETIC JACK WITH INTEGRATED POWER OVER ETHERNET PLUS POWERED DEVICE (PD) CONTROLLER AND BRIDGE RECTIFIERS



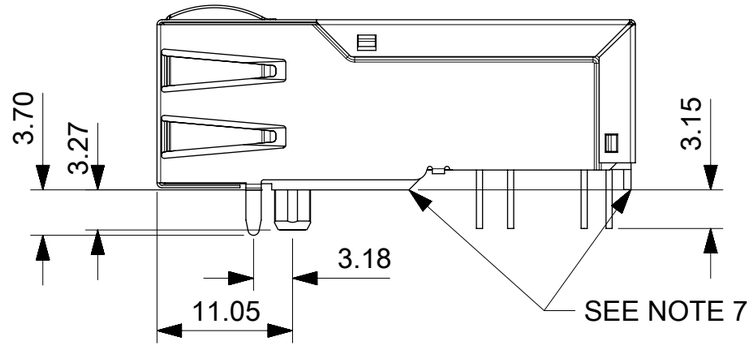


SCALE 1:1

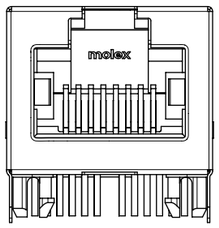


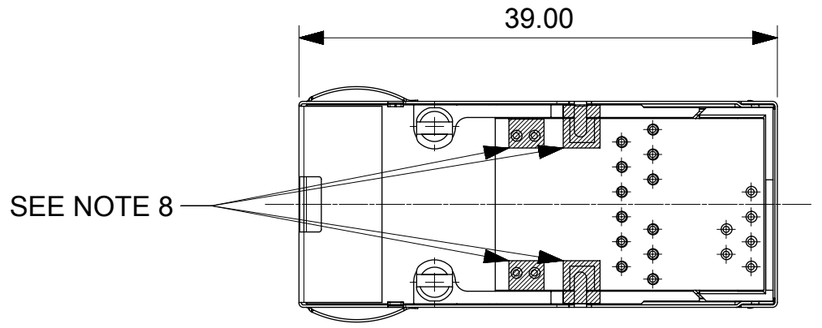


NO SHIELD



NO SHIELD
SPRING VERSION
85791-4420





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)

EC DESCRIPTION
EC NO: 102944 2015/09/28
DRWN: MFURKEL
CHK'D: CBRUNS 2016/03/14
APPR:
REV: F

QUALITY SYMBOLS
F = 0
E = 0
D = 0
▼ = 0
C = 0
☒ = 0
■ = 0
B = 0

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: MM
SCALE: 2:1
DRWN BY: MFURKEL
DATE: 2015/06/10
CHK'D BY:
DATE:
APPR BY:
DATE:
DRAWING SIZE: A3
THIRD ANGLE PROJECTION

molex

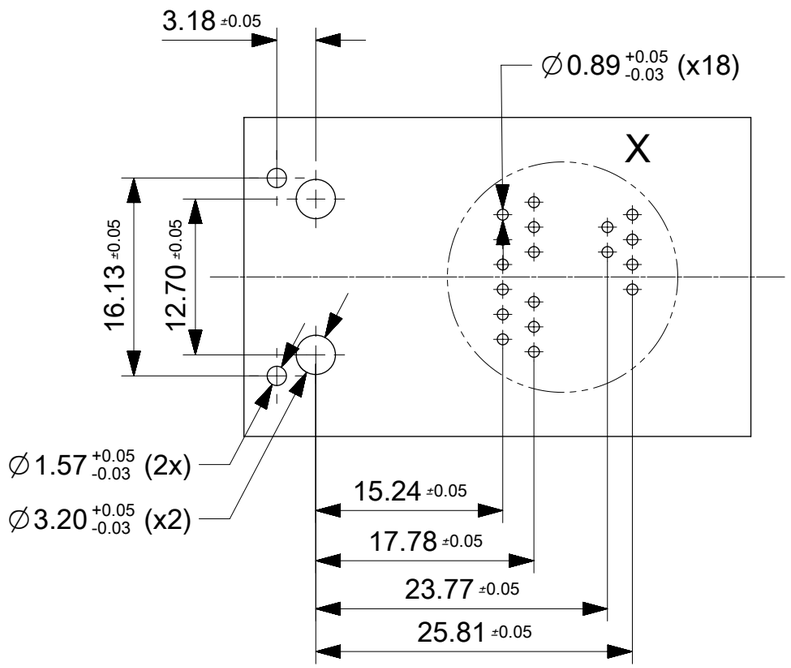
GIGABIT POE PLUS PDJACK (TM) 1X1

PRODUCT CUSTOMER DRAWING

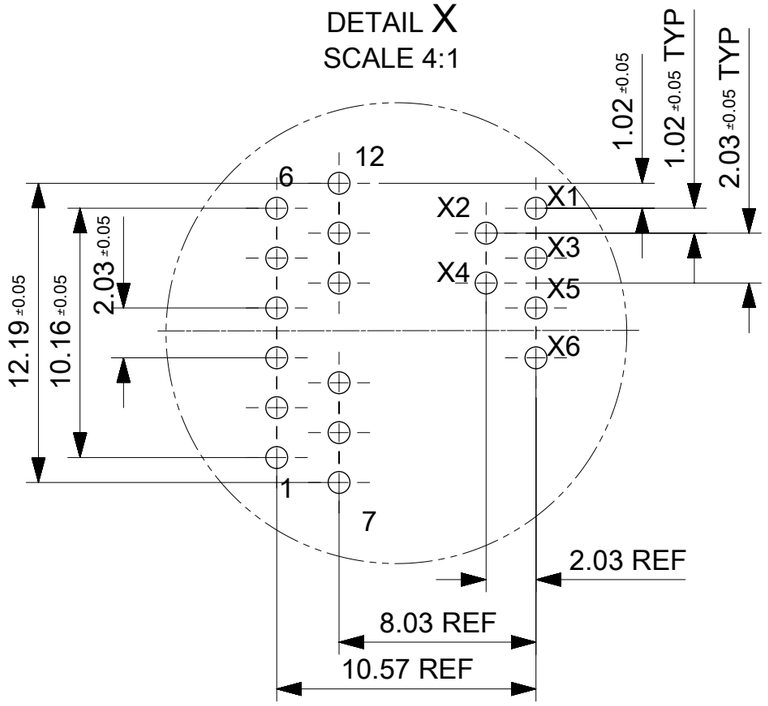
SERIES	MATERIAL NUMBER	CUSTOMER
85791	SEE BOM / SHEET 3	

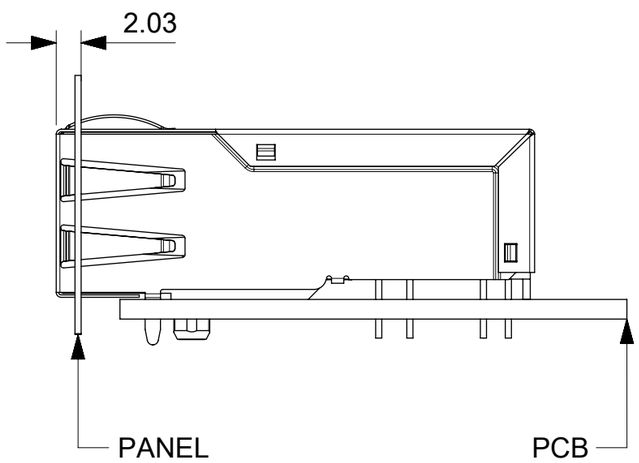
DOCUMENT NUMBER	DOC TYPE	DOC PART	SHEET NUMBER
857910020	PSD	000	1 OF 3

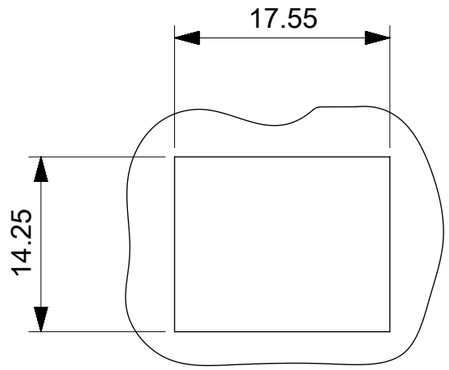
SUGGESTED BOARD LAYOUT - COMPONENT SIDE



PIN CONFIGURATION







SUGGESTED PANEL CUTOUT

EC DESCRIPTION			
EC NO:	102944	2015/09/28	2016/03/14
DRWN:	MFURKEL		
CHK'D:			
APPR:		CBRUNS	
REV	F		

QUALITY SYMBOLS: FA = 0; FC = 0; FB = 0; ▼ = 0; C = 0; ☒ = 0; ■ = 0; = 0

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	MM
SCALE	2:1
DRWN BY	MFURKEL
DATE	2015/06/10
CHK'D BY	
DATE	
APPR BY	
DATE	
DRAWING SIZE	A3
THIRD ANGLE PROJECTION	

molex

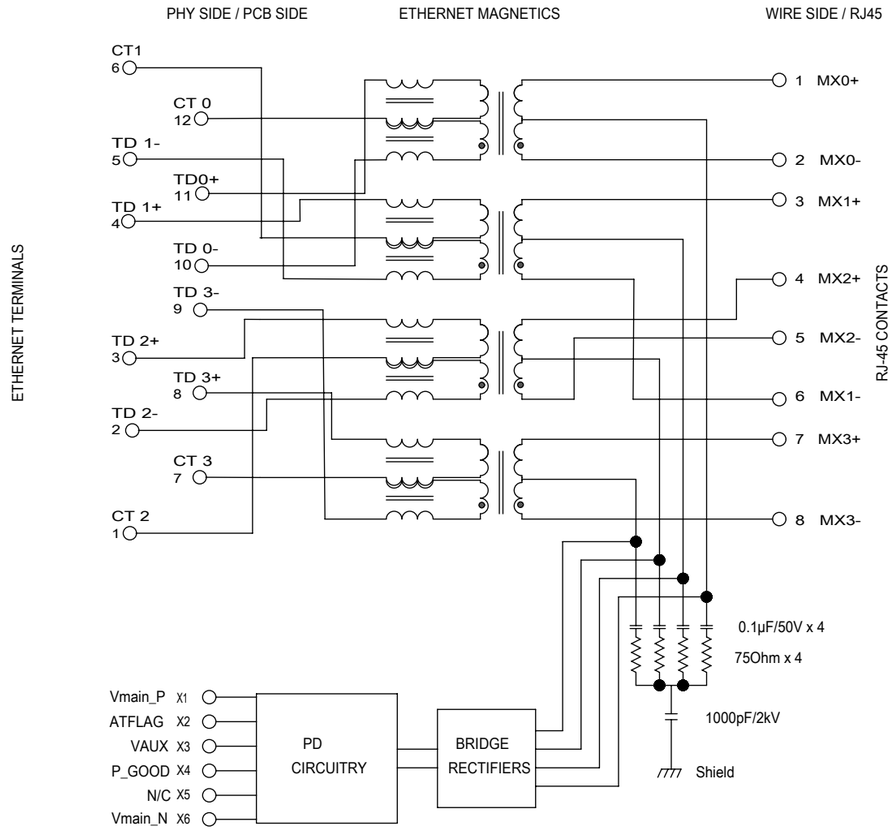
GIGABIT POE PLUS PDJACK (TM) 1X1

PRODUCT CUSTOMER DRAWING

SERIES	MATERIAL NUMBER	CUSTOMER
85791	SEE BOM / SHEET 3	

DOCUMENT NUMBER	DOC TYPE	DOC PART	SHEET NUMBER
857910020	PSD	000	2 OF 3

Electrical Specifications @25°C		
Operating temperature (SEE PART NUMBER)		
Description	VALUE	
OCL POE+TRANSF. 20mA bias	350µH min.	0/70°(0/55°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	



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

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

EC DESCRIPTION 2015/09/28 2016/03/14
EC NO: 102944 DRWN: MFURKEL CHK'D: CBRUNS APPR:
REV F

QUALITY SYMBOLS
E = 0
E = 0
E = 0
▼ = 0
C = 0
☒ = 0
■ = 0
= 0

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: MM
SCALE: 5:1
DRWN BY: MFURKEL DATE: 2015/06/10
CHK'D BY DATE
APPR BY DATE
DRAWING SIZE: A3
THIRD ANGLE PROJECTION

molex

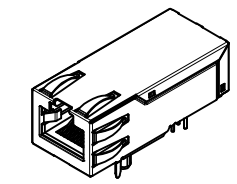
GIGABIT POE PLUS PDJACK (TM) 1X1

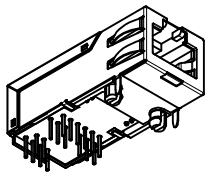
PRODUCT CUSTOMER DRAWING

SERIES	MATERIAL NUMBER	CUSTOMER
85791	SEE BOM / SHEET 3	

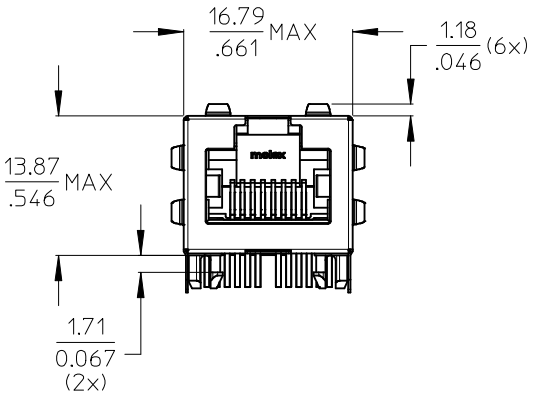
DOCUMENT NUMBER	DOC TYPE	DOC PART	SHEET NUMBER
857910020	PSD	000	3 OF 3

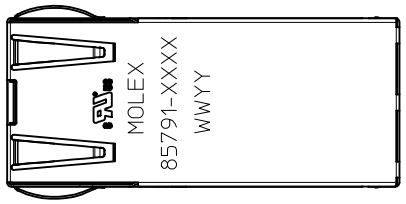
PDJack™ GIGABIT SINGLE PORT MAGNETIC JACK WITH INTEGRATED POWER OVER ETHERNET PLUS POWERED DEVICE (PD) CONTROLLER AND BRIDGE RECTIFIERS

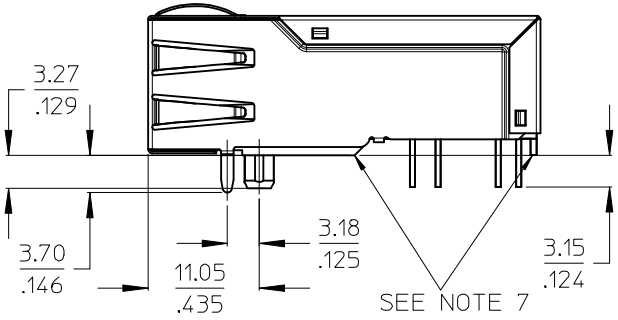


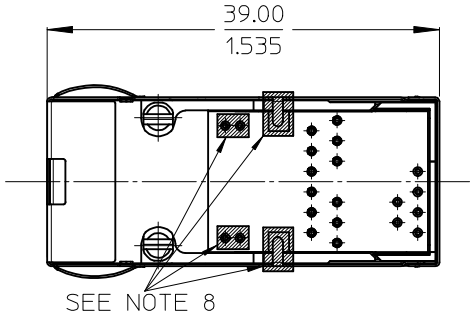


SCALE 1:1









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 2013/02/08
DRWN: JBADER 2013/04/05
CH'KD: MMANGARUDOV 2014/04/25
APPR: SSTEINKE
DESCRIPTION
D
REV

QUALITY SYMBOLS
▼=0
Ⓒ=0

GENERAL TOLERANCES (UNLESS SPECIFIED)

	mm	INCH
4 PLACES	± ---	± ---
3 PLACES	± ---	± ---
2 PLACES	± 0.25	± ---
1 PLACE	± 0.50	± ---
ANGULAR ± .5 °		

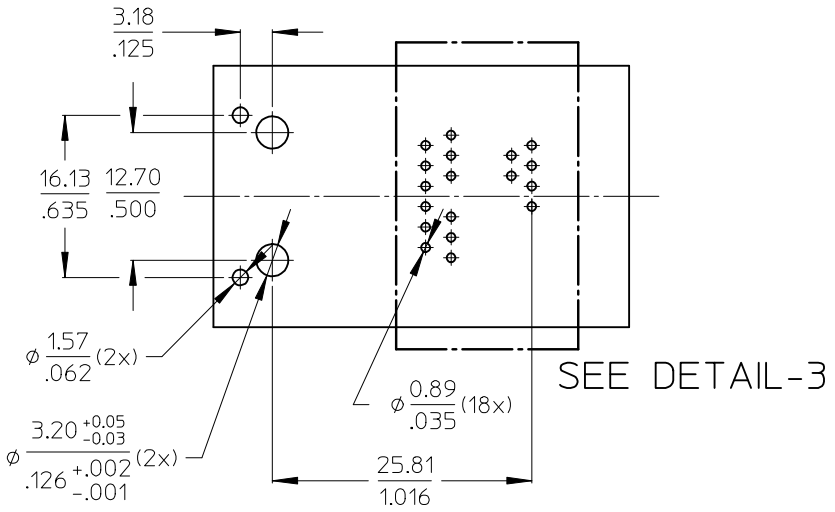
DRAFT WHERE APPLICABLE MUST REMAIN WITHIN DIMENSIONS

DIMENSION STYLE: MM ONLY
SCALE: 2:1
DESIGN UNITS: METRIC
THIRD ANGLE PROJECTION

DRAWN BY: MMANGARUDOV DATE: 2012/04/25
CHECKED BY: JBADER DATE: 2012/04/25
APPROVED BY: SSTEINKE DATE: 2012/06/18
MATERIAL NO.: SEE SHEET 3

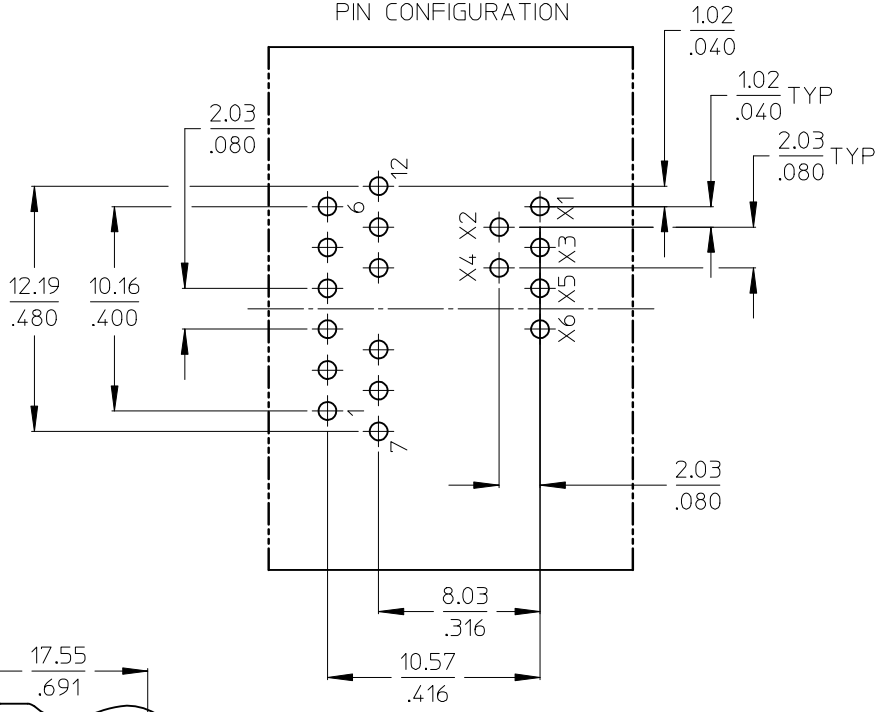
TITLE: GIGABIT POE PLUS PDJACK(TM) 1X1
MOLEX INCORPORATED
DOCUMENT NO.: SD-85791-002
SHEET NO.: 1 OF 3
SIZE: A3

SUGGESTED BOARD LAYOUT - COMPONENT SIDE

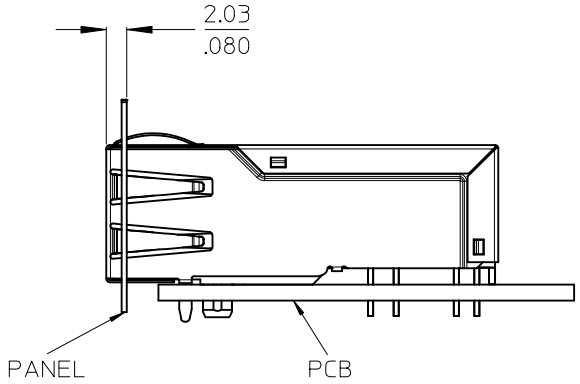


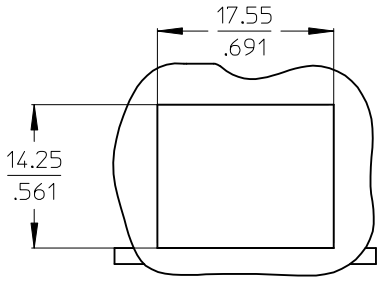
SEE DETAIL-3

PIN CONFIGURATION



DETAIL-3
SCALE 4:1





SUGGESTED PANEL CUTOUT

ENTER DESCRIPTION
EC NO: MG2011-0056 2013/02/08
DRWN: JBADER 2013/04/05
CH'KD: MMANGARUDOV 2014/04/25
APPR: SSTEINKE
DESCRIPTION
REV
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: MM ONLY
SCALE: 2:1
DESIGN UNITS: METRIC
THIRD ANGLE PROJECTION

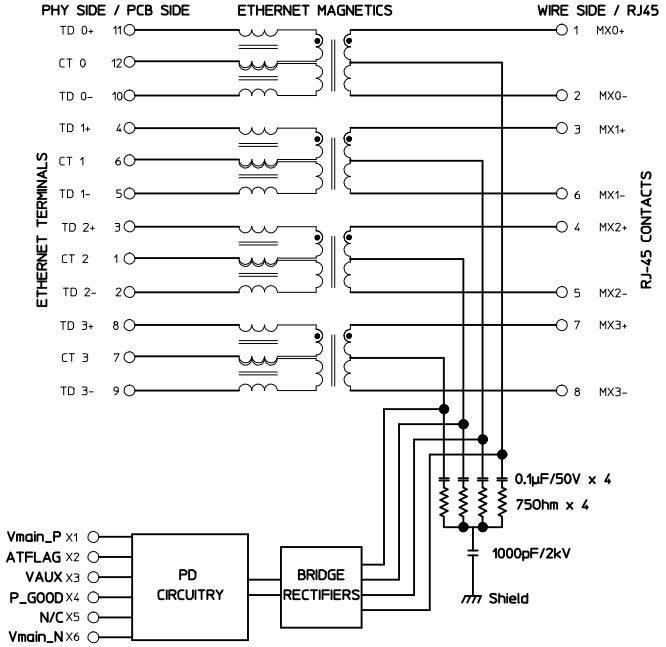
DRAWN BY: MMANGARUDOV DATE: 2012/04/25
CHECKED BY: JBADER DATE: 2012/04/25
APPROVED BY: SSTEINKE DATE: 2012/06/18

TITLE: GIGABIT POE PLUS PDJACK(TM) 1X1

MOLEX INCORPORATED

MATERIAL NO.: SEE SHEET 3
DOCUMENT NO.: SD-85791-002
SHEET NO.: 2 OF 3
SIZE: A3

Electrical Specifications @25°C		
Operating temperature (SEE PART NUMBER)		
Description	Value	
OCL POE+TRANSF. 20mA bias	350µH min.	0/70°(0/55°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
EC NO: MG2011-0056 2013/02/08
DRWN: JBADER 2013/04/05
CH'KD: MMANGARUDOV 2014/04/25
APPR: SSTEINKE
DESCRIPTION
D
REV

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: MM ONLY
SCALE: 5:1
DESIGN UNITS: METRIC
THIRD ANGLE PROJECTION

DRAWN BY: MMANGARUDOV DATE: 2012/04/25
CHECKED BY: JBADER DATE: 2012/04/25
APPROVED BY: SSTEINKE DATE: 2012/06/18
MATERIAL NO.: SEE BOM

TITLE: GIGABIT POE PLUS PDJACK(TM) 1X1
MOLEX INCORPORATED
DOCUMENT NO.: SD-85791-002
SHEET NO.: 3 OF 3
SIZE: A3