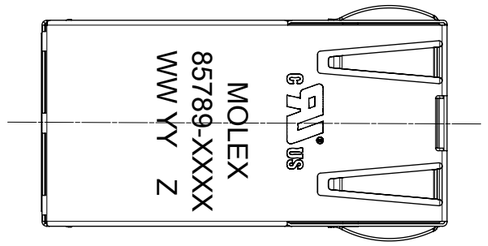
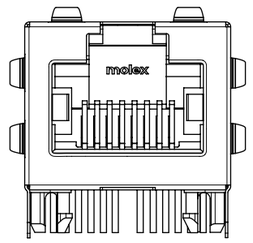
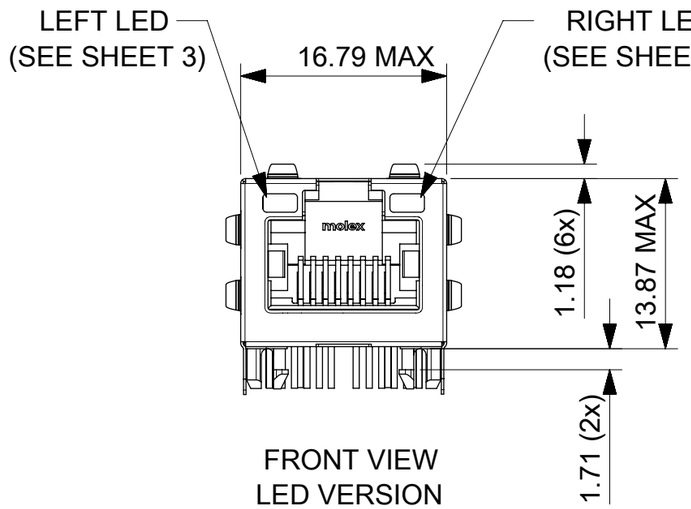
GIGABIT SINGLE PORT MAGNETIC JACK
PoE+ MAGNETICS ACC. TO IEEE802.3at
FOR PSE OR PD APPLICATIONS

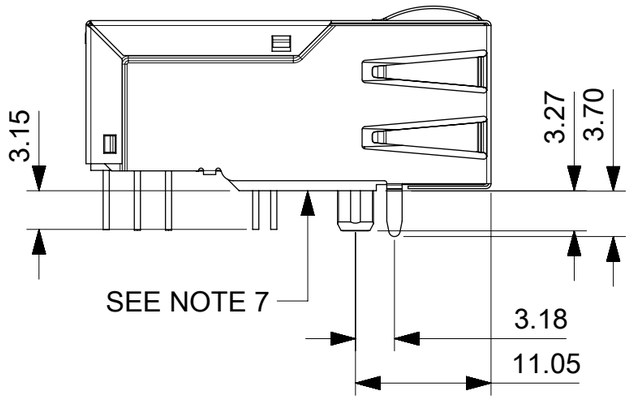


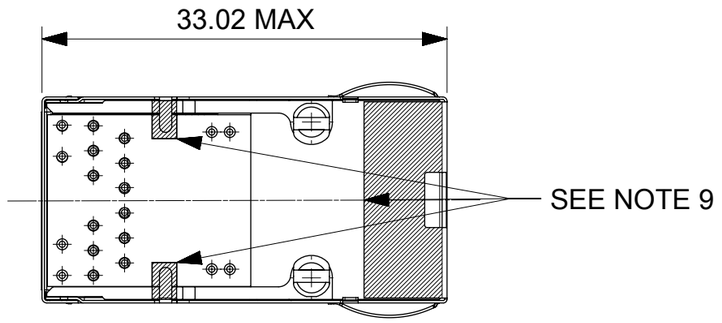


FRONT VIEW
NON LED VERSION
P/N 85789-1020



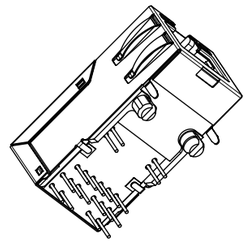
FRONT VIEW
LED VERSION
P/N SEE BOM ON SHEET 3

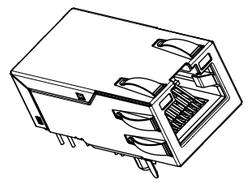




NOTES:
1 - SHIELD MATERIAL: STAINLESS STEEL
(GROUND PINS ARE SOLDER DIPPED)
2 - PLASTIC MATERIAL: PBT, BLACK, UL 94V-0
3 - RJ45 TERMINALS MATERIAL: COPPER ALLOY
CONTACT PLATING: 0.76 MICROMETER GOLD
OVER 1.9 MICROMETER NICKEL
PHY TERMINALS: TIN PLATED
4 - MATING INTERFACE ACCORDING TO IEC 60603-7
5 - PRODUCT SPECIFICATION: PS-85789-001
6 - PACKAGING SPECIFICATION: PK-85759-001
7 - STAND OFF TO SYSTEM BOARD
8 - RECOMMENDED PCB THICKNESS: 1.6mm / 0.067inch
9 - SHIELD AND SHIELD LATCHES: AVOID TO ROUTE
TRACES OR TO PLACE ANY VIAS OR PADS IN
THIS AREA.
10 - INSCRIPTION MARKED BY LASER:
UL LOGO
1st : MOLEX
2st : P/N (SEE BOM)
3rd : DATE CODE(WEEK/YEAR)
Z=> MANUFACTURER CODE

SCALE 1:1





EC DESCRIPTION
EC NO: 102890 2015/09/28
DRWN: MFURKEL
CHK'D:
APPR: RSILLER 2016/02/23
REV F

QUALITY SYMBOLS
FA = 0
FC = 0
FD = 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: 2015/06/15
CHK'D BY
DATE
APPR BY
DATE
DRAWING SIZE: A3
THIRD ANGLE PROJECTION

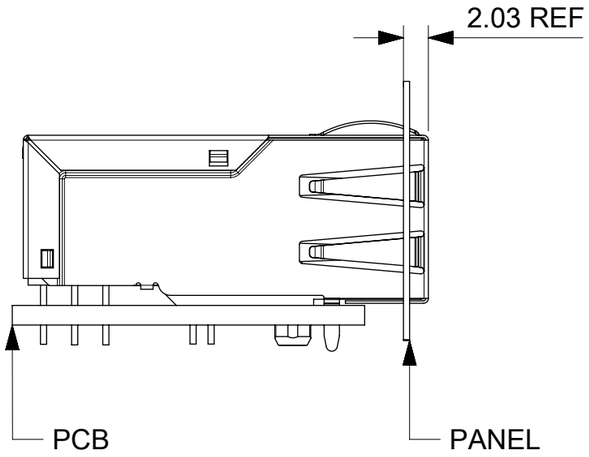
molex

GIGABIT MAGNETIC JACK POE PLUS ENABLED

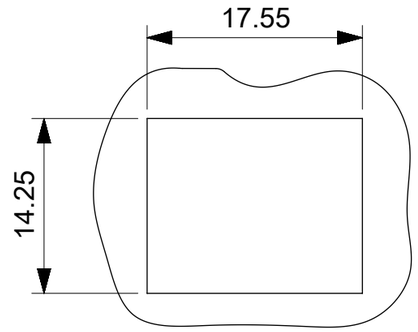
PRODUCT CUSTOMER DRAWING

SERIES	MATERIAL NUMBER	CUSTOMER
85789	SEE BOM/SHEET 3/4	

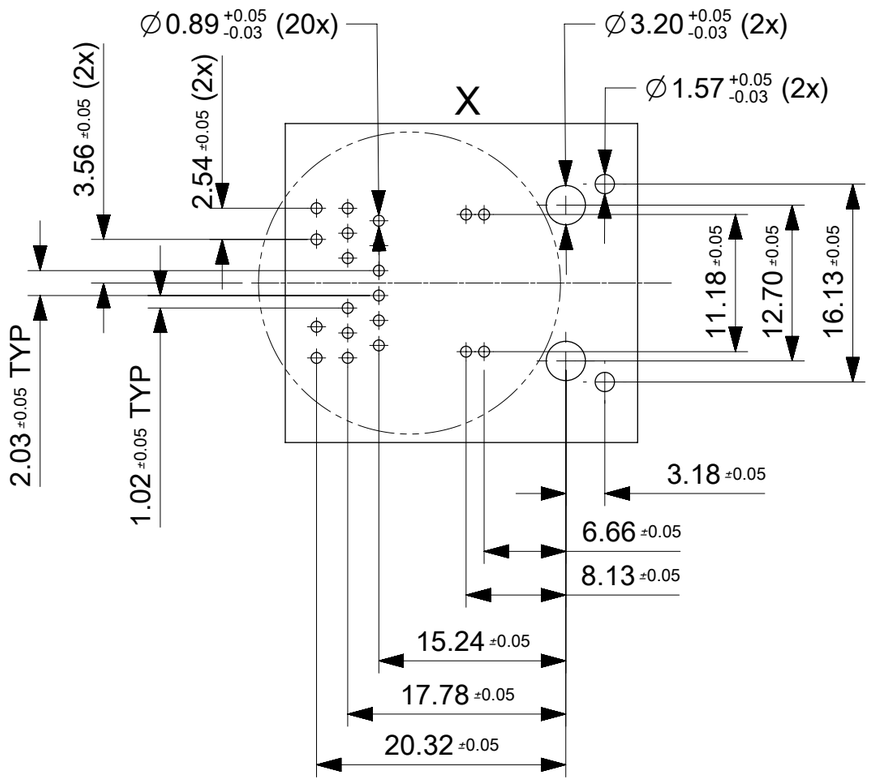
DOCUMENT NUMBER	DOC TYPE	DOC PART	SHEET NUMBER
857891001	PSD	000	1 OF 4



SUGGESTED PANEL CUTOUT

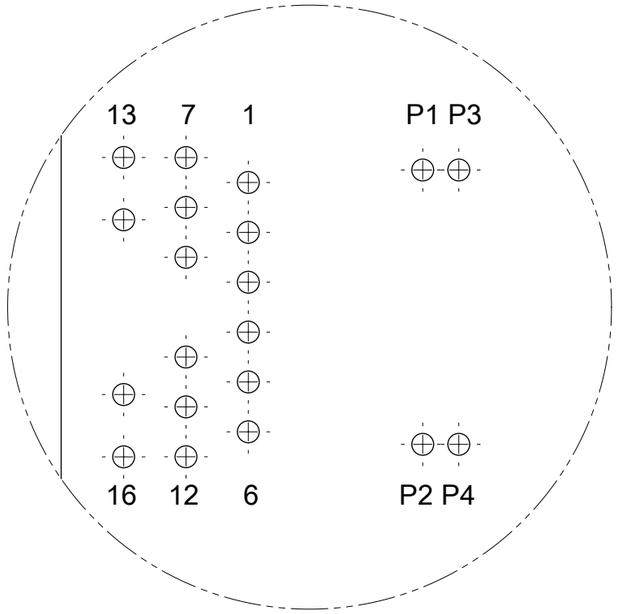


SUGGESTED BOARD LAYOUT- COMPONENT SIDE

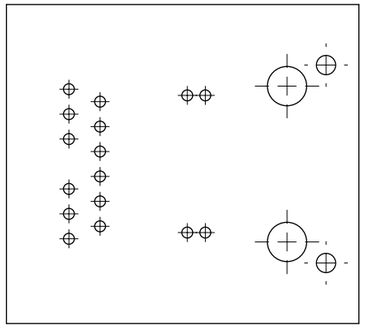


DETAIL X
SCALE 4:1

PIN CONFIGURATION



SUGGESTED BOARD LAYOUT
FOR NON LED VERSION



EC DESCRIPTION
EC NO: 102890 2015/09/28
DRWN: MFURKEL
CHK'D:
APPR: RSILLER 2016/02/23
REV F

QUALITY SYMBOLS
F = 0
E = 0
D = 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: 2015/06/15
CHK'D BY: DATE
APPR BY: DATE
DRAWING SIZE: A3
THIRD ANGLE PROJECTION

molex

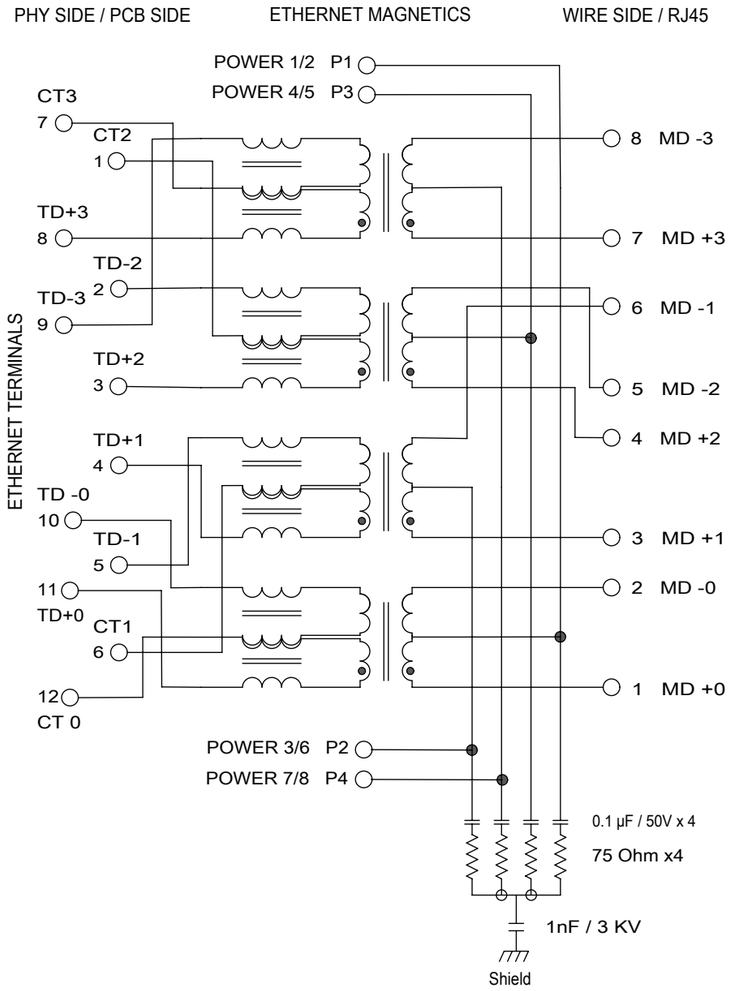
GIGABIT MAGNETIC JACK POE PLUS ENABLED

PRODUCT CUSTOMER DRAWING

SERIES	MATERIAL NUMBER	CUSTOMER
85789	SEE BOM/SHEET 3/4	

DOCUMENT NUMBER	DOC TYPE	DOC PART	SHEET NUMBER
857891001	PSD	000	2 OF 4

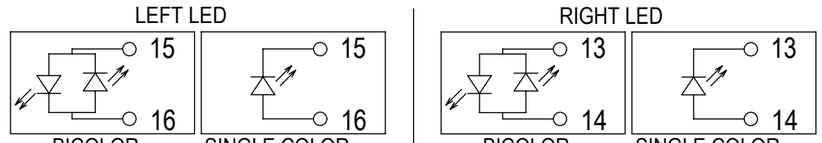
Electrical Specifications @25°C		
Operating temperature (0°C to +70°C)		
Description	VALUE	
OCL POE+TRANSF. 20mA bias (0°C to +70°C)	350µH min.	
OCL NONPOE TRANSF. 8mA bias (0°C to +70°C)	350µH min.	
Turns Ratio	1CT:1CT	
Insertion Loss		
Frequency (MHz)	Limits (dB max.)	Typical Values (dB max.)
1.0-9.9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



PART NUMBER	LED1 POLARITY			LED2 POLARITY		
	LEFT LED			RIGHT LED		
	PIN15	PIN16	COLOR	PIN13	PIN14	COLOR
857891001	-	+	GRN	-	+	GRN
857891003	-	+	GRN	-	+	GRN
	+	-	ORG			
857891006	-	+	GRN	-	+	YW
857891007	-	+	GRN	-	+	GRN
	+	-	YW			
857891012	-	+	YW	-	+	GRN
	+	-	GRN			
857891013	-	+	YW	-	+	YW
	+	-	GRN	+	-	GRN
857891014	-	+	YW	-	+	GRN
857891015	-	+	YW	-	+	GRN
	+	-	GRN			
857891017	-	+	GRN	-	+	YW
	+	-	ORG			
857891020	NON LED					

ADDITIONAL LED COLORS AND CONFIGURATIONS ARE AVAILABLE ON REQUEST

SEE TABLE FOR LED OPTIONS



EC DESCRIPTION
EC NO: 102890 2015/09/28
DRWN: MFURKEL
CHK'D:
APPR: RSILLER 2016/02/23
REV F

QUALITY SYMBOLS
EA = 0
EC = 0
EB = 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: 2015/06/15
CHK'D BY DATE
APPR BY DATE
DRAWING SIZE: A3
THIRD ANGLE PROJECTION

molex

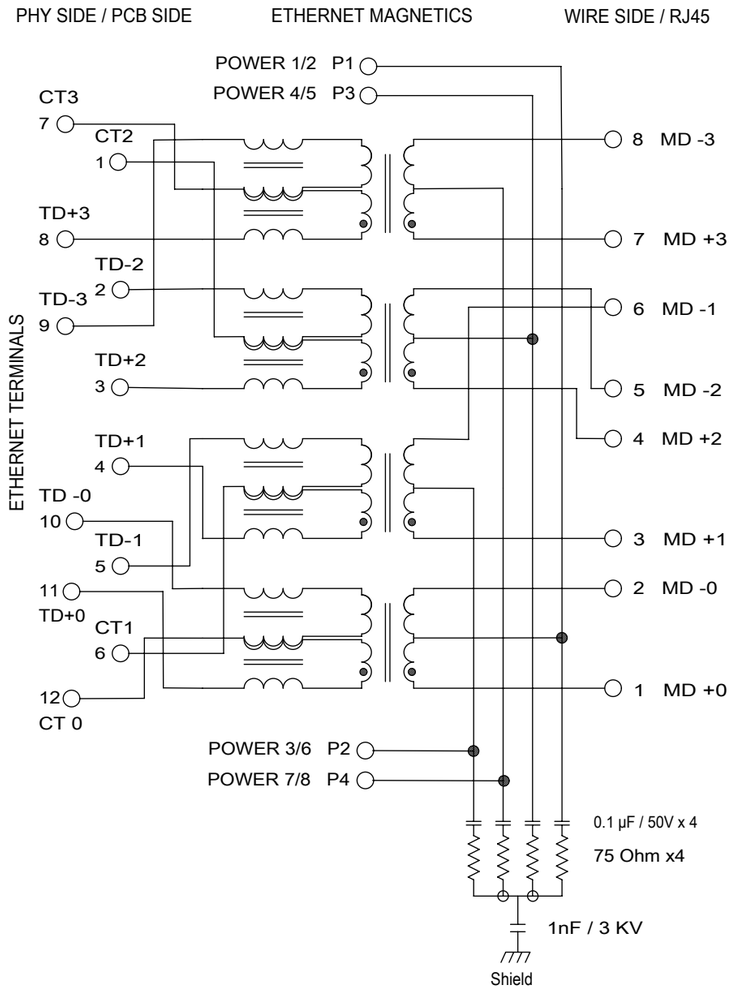
GIGABIT MAGNETIC JACK POE PLUS ENABLED

PRODUCT CUSTOMER DRAWING

SERIES	MATERIAL NUMBER	CUSTOMER
85789	SEE BOM/SHEET 3/4	

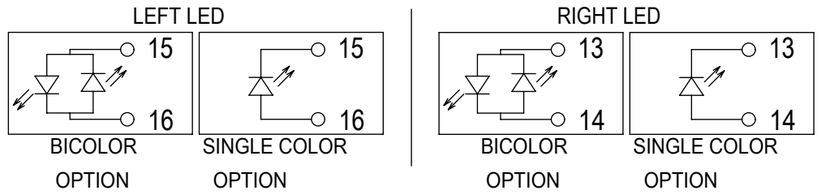
DOCUMENT NUMBER	DOC TYPE	DOC PART	SHEET NUMBER
857891001	PSD	000	3 OF 4

Electrical Specifications @25°C		
Operating temperature (-40°C to +85°C)		
Description	VALUE	
OCL POE+TRANSF. 20mA bias (-40°C to +85°C)	350µH min.	
OCL NONPOE TRANSF. 8mA bias (-40°C to +85°C)	350µH min.	
Turns Ratio	1CT:1CT	
Insertion Loss		
Frequency (MHz)	Limits (dB max.)	Typical Values (dB max.)
1.0-9.9 MHz	0.4+0.1*log(F)	0.5 @ 10MHz
10-49.9 MHz	0.5+0.3*log(F/10)	0.7 @ 50MHz
50-79.9 MHz	1+1.4*log(F/80)	1.0 @ 80MHz
80-100 MHz	1.3+3*log(F/100)	1.3 @ 100MHz
Return Loss		
Frequency (MHz)	Limits (dB min.)	TYPICAL Values (dB min.)
1-9.9 MHz	27dB min.	27 @ 10MHz
10-100 MHz	27-17*log(F/10)	10 @ 100MHz
CMR		
Frequency (MHz)	Limits (dB min.)	TYPICAL Values (dB min.)
1-9.9 MHz	34dB min.	34 @ 10MHz
10-79.9 MHz	27dB min.	27 @ 80MHz
80-199.9 MHz	27-14.5*log(F/80)	21.5 @ 200MHz
200-399.9 MHz	21.5-39*log(F/200)	10 @ 400MHz
400-1000 MHz	10	10 @ 1000MHz
NEXT		
Frequency (MHz)	Limits (dB min.)	TYPICAL Values (dB min.)
1-5.9 MHz	50	50 @ 6MHz
6-49.9 MHz	45-16*log(F/10)	34 @ 50MHz
50-100 MHz	25-30*log(F/100)	25 @ 100MHz
Isolation PHY to Wire side	2.25kVDC/60sec	



PART NUMBER	LED1 POLARITY			LED2 POLARITY		
	LEFT LED			RIGHT LED		
	PIN15	PIN16	COLOR	PIN13	PIN14	COLOR
857893006	-	+	GRN	-	+	YW
857893016	-	+	GRN	-	+	GRN
	+	-	YW			

ADDITIONAL LED COLORS AND CONFIGURATIONS ARE AVAILABLE ON REQUEST



SEE TABLE FOR LED OPTIONS

EC DESCRIPTION
EC NO: 102890 2015/09/28
DRWN: MFURKEL
CHK'D:
APPR: RSILLER 2016/02/23
REV F

QUALITY SYMBOLS
E A = 0
E C = 0
E B = 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: 2015/06/15
CHK'D BY DATE
APPR BY DATE
DRAWING SIZE: A3
THIRD ANGLE PROJECTION

molex

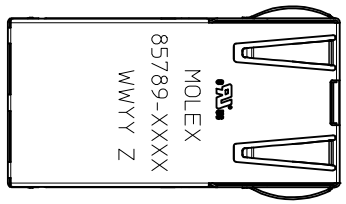
GIGABIT MAGNETIC JACK POE PLUS ENABLED

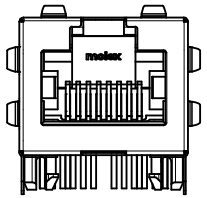
PRODUCT CUSTOMER DRAWING

SERIES	MATERIAL NUMBER	CUSTOMER
85789	SEE BOM/SHEET 3/4	

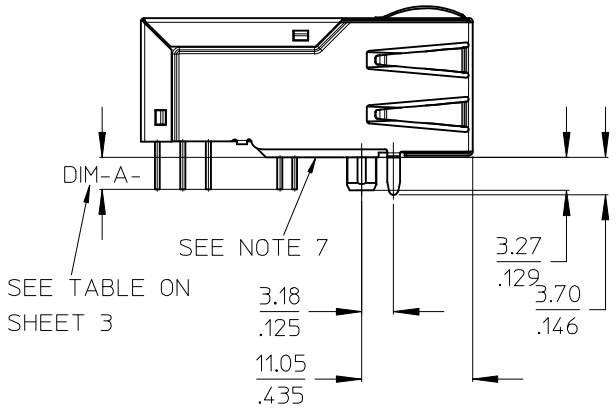
DOCUMENT NUMBER	DOC TYPE	DOC PART	SHEET NUMBER
857891001	PSD	000	4 OF 4

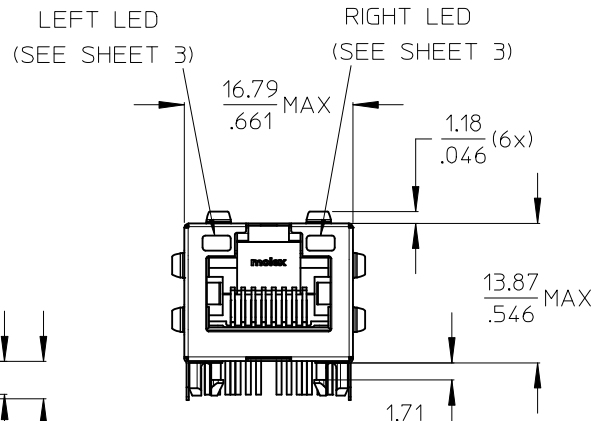
GIGABIT SINGLE PORT MAGNETIC JACK
PoE+ MAGNETICS ACC. TO IEEE802.3at
FOR PSE OR PD APPLICATIONS



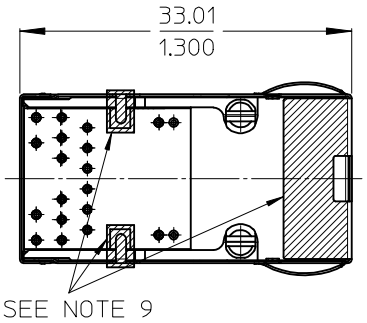


FRONT VIEW
NON LED VERSION
P/N SEE BOM ON SHEET 3

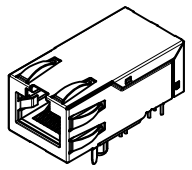




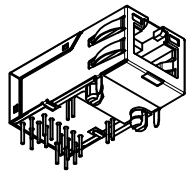
FRONT VIEW
LED VERSION
P/N SEE BOM ON SHEET 3



NOTES:
1 - SHIELD MATERIAL: STAINLESS STEEL
(GROUND PINS ARE SOLDER DIPPED)
2 - PLASTIC MATERIAL: PBT, BLACK, UL 94V-0
3 - TERMINALS MATERIAL: PHOSPOR BRONZE
RJ45 CONTACTS PLATING: 0.76 MICROMETER GOLD
OVER 1.9 MICROMETER NICKEL ON MATING AREA
SOLDER TERMINALS: 3 MICROMETER TIN
4 - MATING INTERFACE ACCORDING TO IEC 60603-7
5 - PRODUCT SPECIFICATION: PS-85789-001
6 - PACKAGING SPECIFICATION: PK-85759-001
7 - STAND OFF TO SYSTEM BOARD
8 - RECOMMENDED PCB THICKNESS: 1.6mm / 0.067inch
9 - SHIELD AND SHIELD LATCHES: AVOID TO ROUTE
TRACES OR TO PLACE ANY VIAS OR PADS IN THIS AREA.
10 - INSCRIPTION MARKED BY LASER:
UL LOGO
1st : MOLEX
2st : P/N (SEE BOM)
3rd : DATE CODE(WEEK/YEAR)
Z=> MANUFACTURER CODE



NON LED VERSION
SCALE 1:1



LED VERSION
SCALE 1:1

NOTES UPDATE
EC NO: DESCRIPTION
DRWN:MMANGARUDOV 2014/11/28
CHKD:DBYRNES 2014/12/05
APPR:SSTEINKE 2014/12/22
REV B

QUALITY SYMBOLS
▼=0
Ⓒ=0

GENERAL TOLERANCES (UNLESS SPECIFIED)

	mm	INCH
4 PLACES	± ---	± ---
3 PLACES	± ---	± .010
2 PLACES	± 0.25	± .020
1 PLACE	± 0.5	± ---
0 PLACE	±	±
ANGULAR ± .5 °		

DRAFT WHERE APPLICABLE MUST REMAIN WITHIN DIMENSIONS

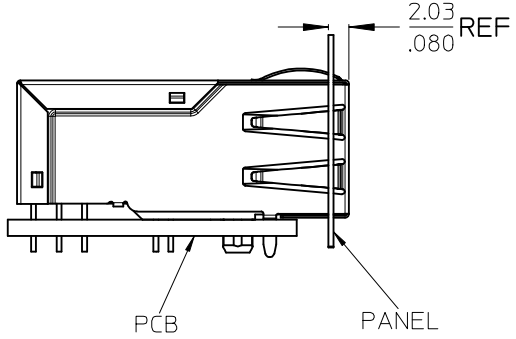
DIMENSION STYLE: MM/IN
SCALE: 2:1
DESIGN UNITS: METRIC
THIRD ANGLE PROJECTION

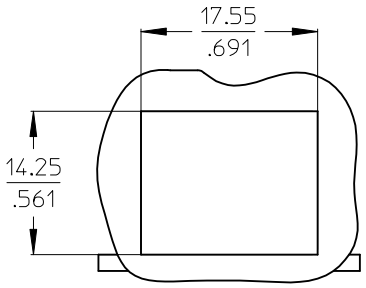
DRAWN BY: JBADER DATE: 2014/04/25
CHECKED BY: MMANGARUDOV DATE: 2014/05/05
APPROVED BY: SSTEINKE DATE: 2014/06/11
MATERIAL NO.: SEE SHEET 3

TITLE: GIGABIT MAGNETIC JACK
POE PLUS ENABLED 1X1

molex

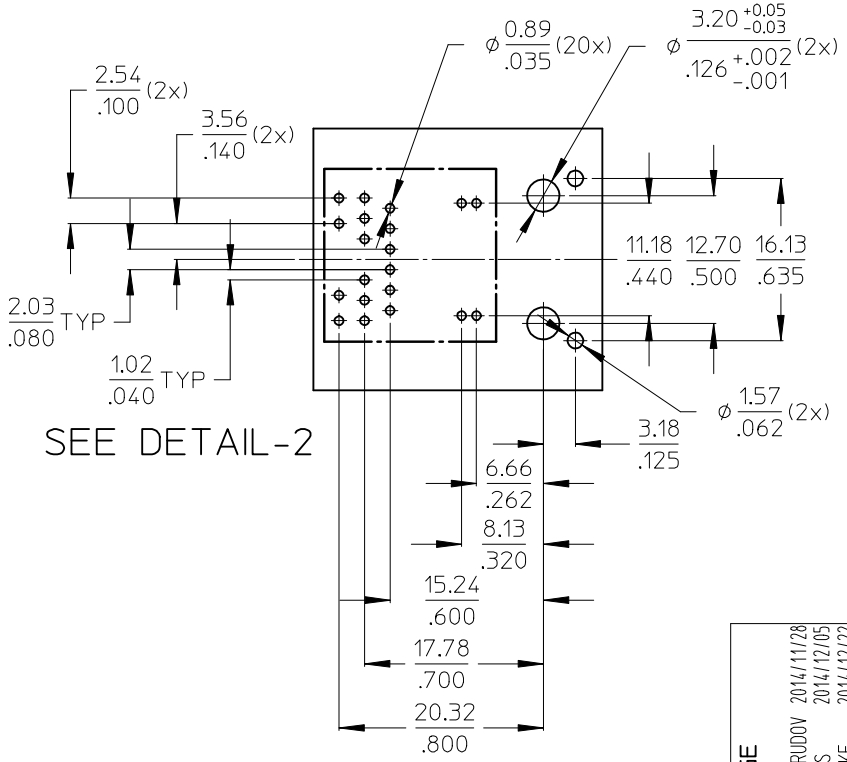
DOCUMENT NO.: SD-85789-401
SHEET NO.: 1 OF 3
SIZE: A3





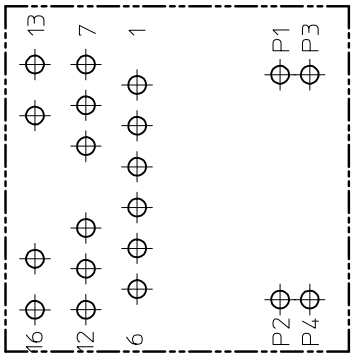
SUGGESTED PANEL CUTOUT

SUGGESTED BOARD LAYOUT - COMPONENT SIDE



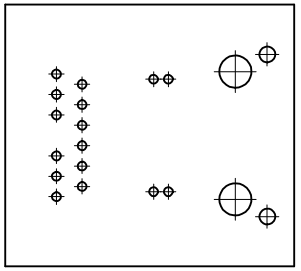
SEE DETAIL-2

PIN CONFIGUARTION



DETAIL-2
SCALE 4:1

SUGGESTED BOARD LAYOUT
NON LED VERSION



NO CHANGE
EC NO:
DRWN:MMANGARUDOV 2014/11/28
CH'KD:DBYRNES 2014/12/05
APPR:SSTEINKE 2014/12/22
DESCRIPTION
REV
B

QUALITY SYMBOLS
▼=0
Ⓒ=0

GENERAL TOLERANCES (UNLESS SPECIFIED)	mm	INCH
4 PLACES	± ---	± ---
3 PLACES	± ---	± .010
2 PLACES	± 0.25	± .020
1 PLACE	± 0.5	± ---
0 PLACE	±	±
ANGULAR ± .5 °		

DRAFT WHERE APPLICABLE MUST REMAIN WITHIN DIMENSIONS

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

DRAWN BY: JBADER DATE: 2014/04/25
CHECKED BY: MMANGARUDOV DATE: 2014/05/05
APPROVED BY: SSTEINKE DATE: 2014/06/11
MATERIAL NO.: SEE SHEET 3

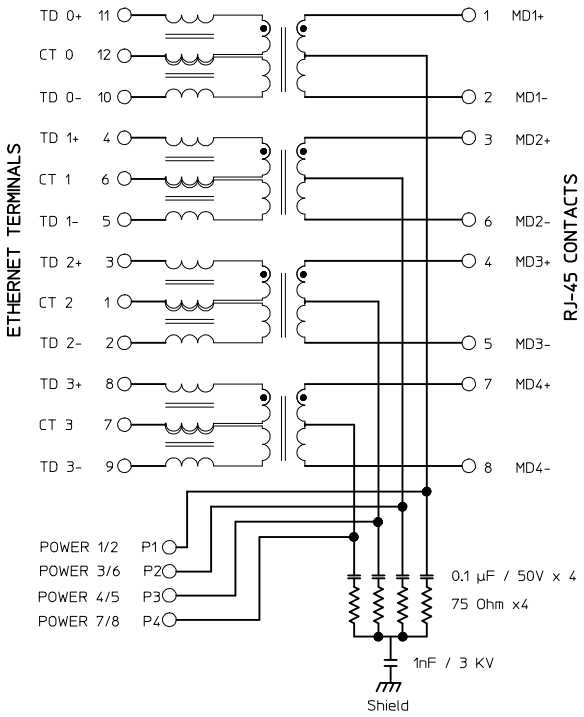
TITLE: GIGABIT MAGNETIC JACK
POE PLUS ENABLED 1X1

molex

DOCUMENT NO.: SD-85789-401
SHEET NO.: 2 OF 3
SIZE: A3

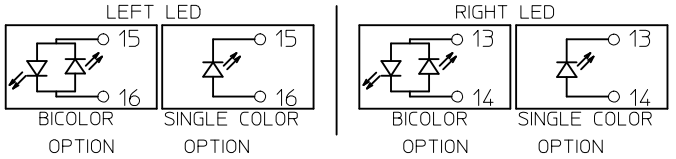
Electrical Specifications @25°C		
Operating temperature (-40°C to +85°C)		
Description	Value	
OCL POE+TRANSF. 20mA bias (-40°C to +85°C)	350µH min.	
OCL NONPOE TRANSF. 8mA bias (-40°C to +85°C)	350µH min.	
Turns Ratio	1CT:1CT	
Insertion Loss		
Frequency (MHz)	Limits (dB max.)	Typical Values (dB max.)
1.0-9.9 MHz	0.4+0.1*log(F)	0.5 @ 10MHz
10-49.9 MHz	0.5+0.3*log(F/10)	0.7 @ 50MHz
50-79.9 MHz	1+1.4*log(F/80)	1.0 @ 80MHz
80-100 MHz	1.3+3*log(F/100)	1.3 @ 100MHz
Return Loss		
Frequency (MHz)	Limits (dB min.)	TYPICAL Values (dB min.)
1-9.9 MHz	27dB min.	27 @ 10MHz
10-100 MHz	27-17*log(F/10)	10 @ 100MHz
CMR		
Frequency (MHz)	Limits (dB min.)	TYPICAL Values (dB min.)
1-9.9 MHz	34dB min.	34 @ 10MHz
10-79.9 MHz	27dB min.	27 @ 80MHz
80-199.9 MHz	27-14.5*log(F/80)	21.5 @ 200MHz
200-399.9 MHz	21.5-39*log(F/200)	10 @ 400MHz
400-1000 MHz	10	10 @ 1000MHz
NEXT		
Frequency (MHz)	Limits (dB min.)	TYPICAL Values (dB min.)
1-5.9 MHz	50	50 @ 6MHz
6-49.9 MHz	45-16*log(F/10)	34 @ 50MHz
50-100 MHz	25-30*log(F/100)	25 @ 100MHz
Isolation PHY to Wire side	2.25kVDC/60sec	

PHY SIDE / PCB SIDE ETHERNET MAGNETICS WIRE SIDE / RJ45



PART NUMBER	DIM-A-SHEET 1	LED1 POLARITY LEFT LED PIN15	LED1 POLARITY LEFT LED PIN16	LED1 POLARITY LEFT LED COLOR	LED2 POLARITY RIGHT LED PIN13	LED2 POLARITY RIGHT LED PIN14	LED2 POLARITY RIGHT LED COLOR
85789-4008	2.50mm	-	+	GREEN	-	+	GREEN
		+	-	YELLOW	+	-	YELLOW
85789-4020	2.50mm	NON LED					

ADDITIONAL LED COLORS AND CONFIGURATIONS ARE AVAILABLE ON REQUEST



SEE TABLE FOR LED OPTIONS

BOM UPDATE
EC NO:
DRWN:MMANGARUDOV 2014/11/28
CH'KD:DBYRNES 2014/12/05
APPR:SSTEINKE 2014/12/22
DESCRIPTION
B
REV

QUALITY SYMBOLS
▼=0
Ⓒ=0

GENERAL TOLERANCES (UNLESS SPECIFIED)	mm	INCH
4 PLACES	± ---	± ---
3 PLACES	± ---	± .010
2 PLACES	± 0.25	± .020
1 PLACE	± 0.5	± ---
0 PLACE	±	±
ANGULAR ± .5 °		

DRAFT WHERE APPLICABLE MUST REMAIN WITHIN DIMENSIONS

DIMENSION STYLE: MM/IN
SCALE: 5:1
DESIGN UNITS: METRIC
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