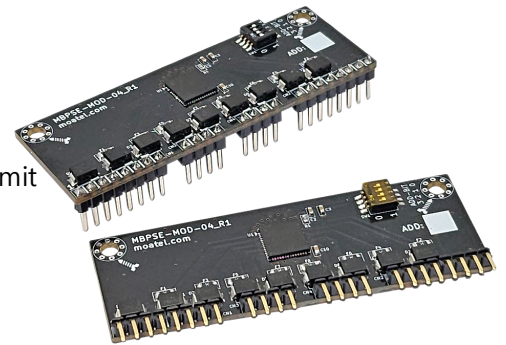


Description

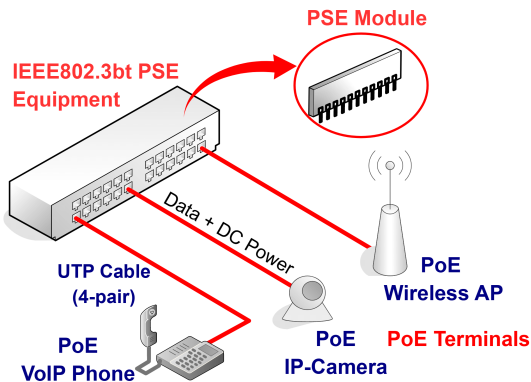
Up to 90W(per Port) 4-Port PSE(Power Sourcing Equipment) Module for IEEE802.3bt Compliant PoE(Power over Ethernet) Application.

Features

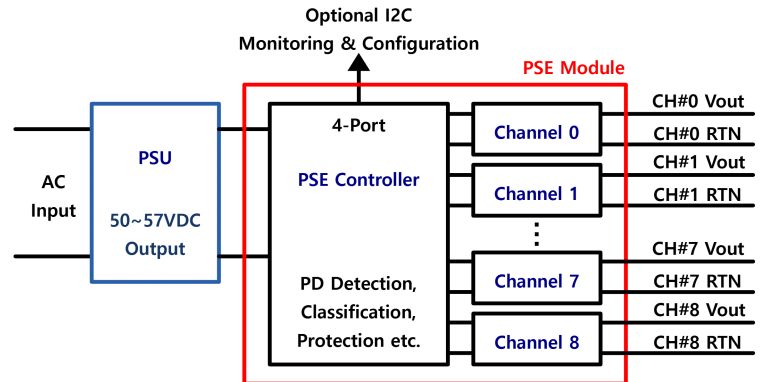
- Fully Supports IEEE802.3bt Compliant (Default : Type4)
- **Configure : 4-port for 4-pair or 8-port for 2-pair**
- Input Voltage Range : 52V to 57V (@ Type4)
- Maximum Output Power per Port : 96W
- Short Circuit, Over-temperature Protection and In-rush Current Limit
- Auto-class discovery
- Single DC Power Supply Voltage Input
- Easy Installation and Low Cost
- RoHS Compliant



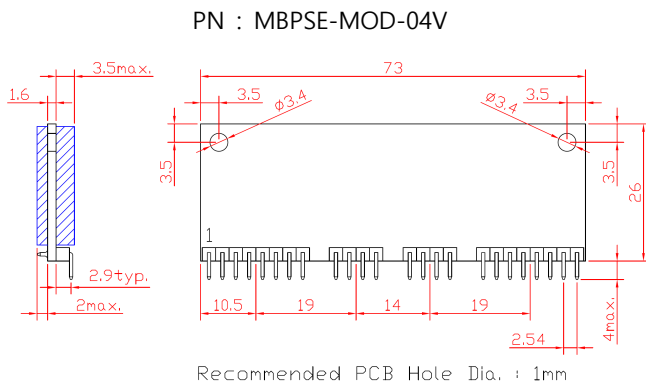
Application Diagram



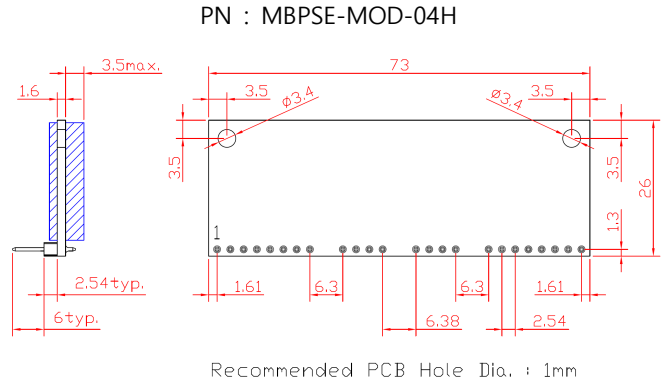
Typical Connection



Outline Drawing (Vertical Type)



Outline Drawing (Horizontal Type)



<Notice>

- Dimensions are nominal (±0.25mm) & in mm

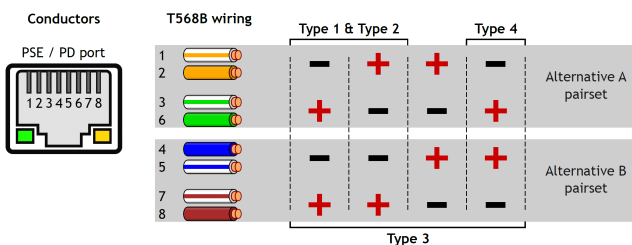
<Notice>

- Dimensions are nominal (±0.25mm) & in mm
 - Fix-Hole (3.4-pi) : User can connect to AGND(PSU) with stand-off in case of using the horizontal type.

Pin Assignment

Pin #	Name	Description
1,2	AGND	Input (-) : This input pin connects to the negative(-) output of the PSU.
3,4	VIN+	Input (+) : This input pin connects to the positive(+) output of the PSU.
5	RTN_0	CH#0 Return : This pin provides the PSE ground return of CH#0 and connects to the center tap of 1&2(RJ45#1).
6	Vout_0	CH#0 Output : This pin provides the positive PSE output of CH#0 and connects to the center tap of 3&6(RJ45#1). Internally shorted with VIN+.
7	Vout_1	CH#1 Output : This pin provides the positive PSE output of CH#1 and connects to the center tap of 4&5(RJ45#1). Internally shorted with VIN+.
8	RTN_1	CH#1 Return : This pin provides the PSE ground return of CH#1 and connects to the center tap of 7&8(RJ45#1).
9	RTN_2	CH#2 Return : This pin provides the PSE ground return of CH#2 and connects to the center tap of 1&2(RJ45#2).
10	Vout_2	CH#2 Output : This pin provides the positive PSE output of CH#2 and connects to the center tap of 3&6(RJ45#2). Internally shorted with VIN+.
11	Vout_3	CH#3 Output : This pin provides the positive PSE output of CH#3 and connects to the center tap of 4&5(RJ45#2). Internally shorted with VIN+.
12	RTN_3	CH#3 Return : This pin provides the PSE ground return of CH#3 and connects to the center tap of 7&8(RJ45#2).
13	RTN_4	CH#4 Return : This pin provides the PSE ground return of CH#4 and connects to the center tap of 1&2(RJ45#3).
14	Vout_4	CH#4 Output : This pin provides the positive PSE output of CH#4 and connects to the center tap of 3&6(RJ45#3). Internally shorted with VIN+.
15	Vout_5	CH#5 Output : This pin provides the positive PSE output of CH#5 and connects to the center tap of 4&5(RJ45#3). Internally shorted with VIN+.
16	RTN_5	CH#5 Return : This pin provides the PSE ground return of CH#5 and connects to the center tap of 7&8(RJ45#3).
17	RTN_6	CH#6 Return : This pin provides the PSE ground return of CH#6 and connects to the center tap of 1&2(RJ45#4).
18	Vout_6	CH#6 Output : This pin provides the positive PSE output of CH#6 and connects to the center tap of 3&6(RJ45#4). Internally shorted with VIN+.
19	Vout_7	CH#7 Output : This pin provides the positive PSE output of CH#7 and connects to the center tap of 4&5(RJ45#4). Internally shorted with VIN+.
20	RTN_7	CH#7 Return : This pin provides the PSE ground return of CH#7 and connects to the center tap of 7&8(RJ45#4).
21	AGND	Input (-) : This input pin connects to the negative(-) output of the PSU.
22	SDAO	SDA Output : This pin provides I ² C serial data output to the external MCU. (It can be connected with SDAI pin through external circuit .)
23	SDAI	SDA Input : This pin is provided I ² C serial data input from the external MCU. (It can be connected with SDAO pin through external circuit .)
24	SCL	SCL Input : This pin is provided I ² C clock input from the external MCU.

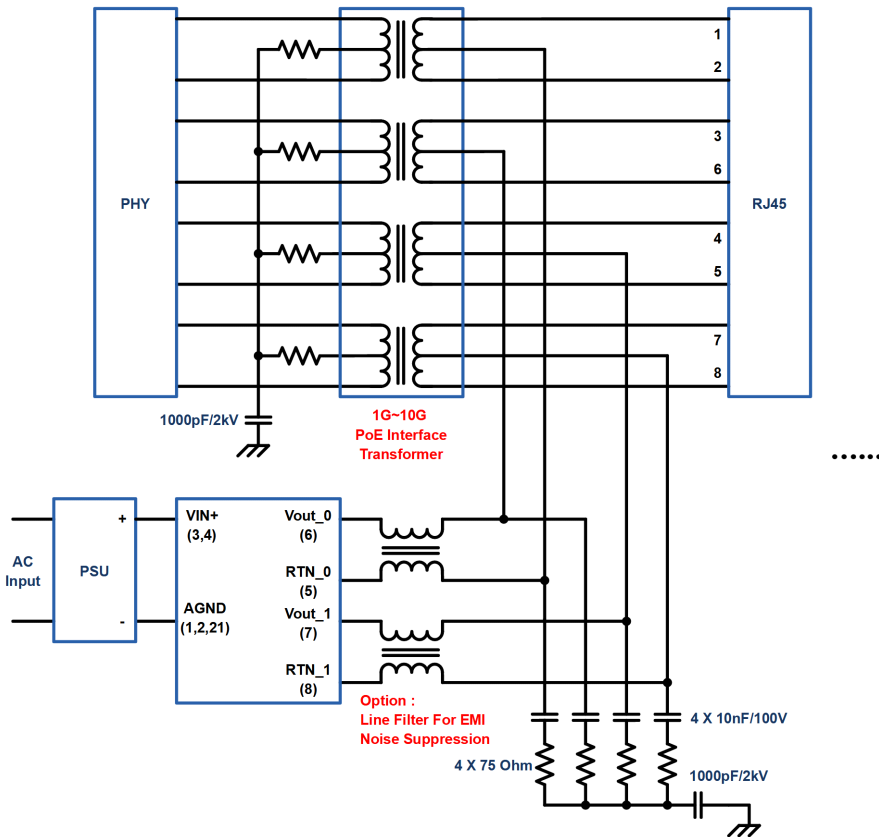
PSE Pin-out Configuration and Permissible Power Supply Polarity



Specifications

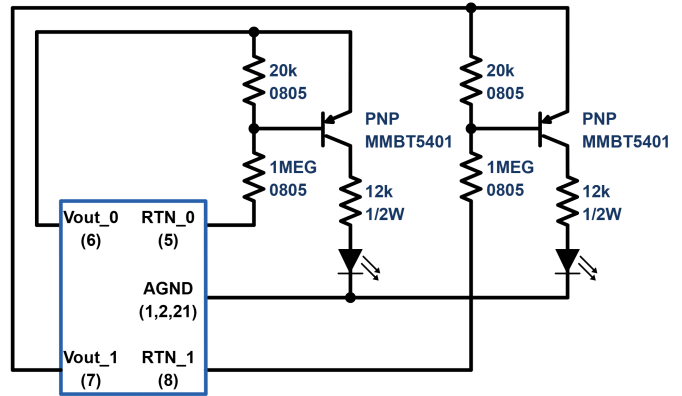
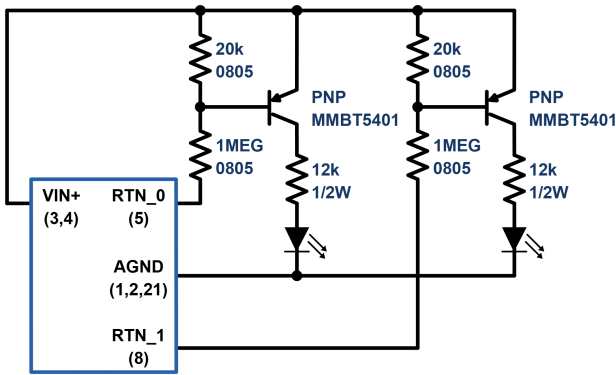
No	Item	Specification	
1	Number of Port	4-port (4-pair)	
2	Input Voltage	IEEE802.3bt Type3 (~60W)	50~57 VDC
		IEEE802.3bt Type4 (~90W)	52~57 VDC
3	Current Limit (per Port)	Class 0	370 mA typ.
		Class 1	102 mA typ.
		Class 2	188 mA typ.
		Class 3	370 mA typ.
		Class 4	776 mA typ.
		Class 5	956 mA typ.
		Class 6	1,276 mA typ.
		Class 7	1,508 mA typ.
4	Signature Resistor	17~29 kohm	
5	Classification Probe Voltage	15.5~20.5 V	
6	Dimension	73(W)×26(H)×7.3(D) mm	
7	Operating Temperature	-20 ~ 70 °C	
8	Storage Temperature	-40 ~ 100 °C	

1G~10G IEEE802.3bt 4-pair PoE Application (#1 Port)

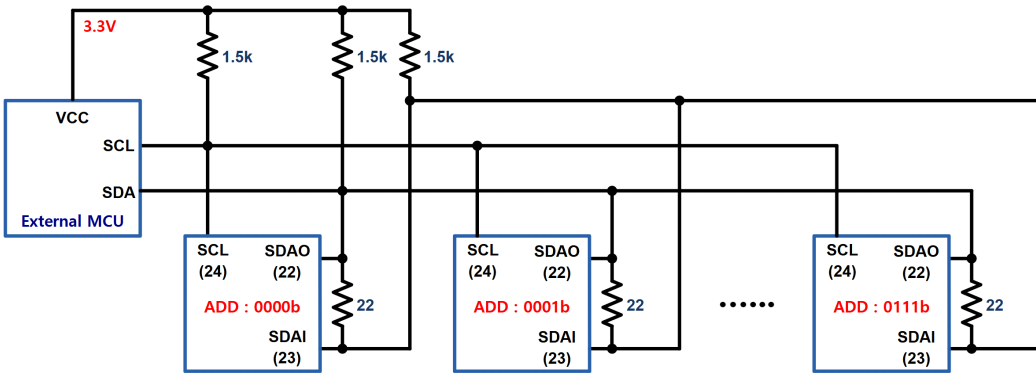


LED Interface (Using input voltage, CH#0&1)

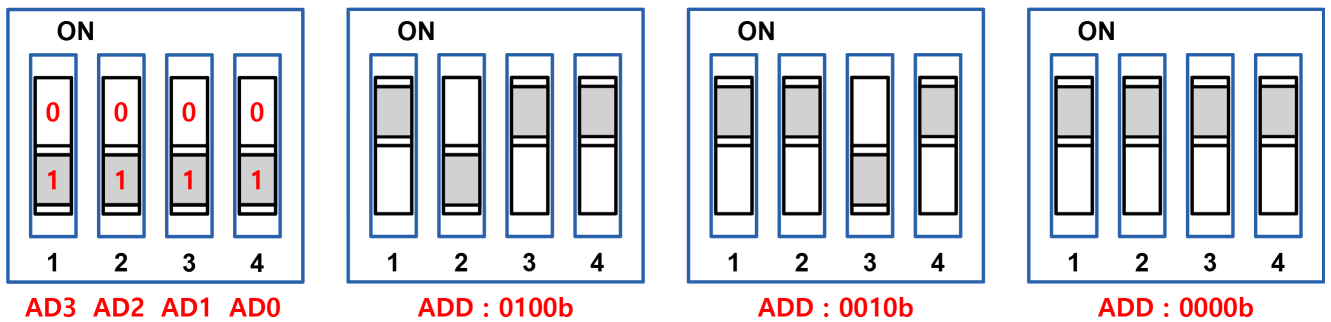
LED Interface (Using output voltage, CH#0&1)



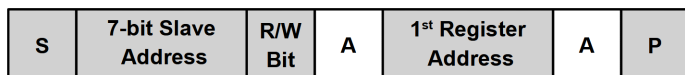
I²C Slave Interface (Host : External MCU, Maximum 8 Slaves)



I²C Address Setting (SW1)

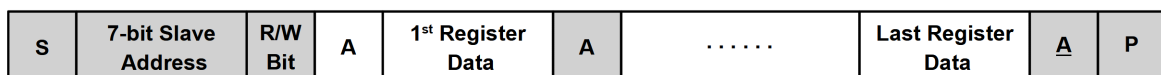


I²C Interface Read Cycle Diagram



< 7-bit Slave Address >
1 1 0 AD3 AD2 AD1 AD0

0 : Write



1 : Read

N (Data Bytes+ACK)

Data Byte+NACK

□ : Host→Slave □ : Slave→Host S : Start Bit (1→0) P : Stop Bit (0→1) A : ACK Bit (0) A : NACK Bit (1)

Major Register Map

- Channel 0~7 Current Registers @0x90~0x9F of Page0

ADD	Bit #	R/W	Default	Description
0x90	4:0	R	0x00	Channel 0 Current MSB
0x91	7:0	R	0x00	Channel 0 Current LSB The MSB 11 bits are integer and the LSB 2 bits are fractional. Unit is in mAmps. This value is updated every time the port is polled.
0x92	4:0	R	0x00	Channel 1 Current MSB
0x93	7:0	R	0x00	Channel 1 Current LSB
0x94	4:0	R	0x00	Channel 2 Current MSB
0x95	7:0	R	0x00	Channel 2 Current LSB
0x96	4:0	R	0x00	Channel 3 Current MSB
0x97	7:0	R	0x00	Channel 3 Current LSB
0x98	4:0	R	0x00	Channel 4 Current MSB
0x99	7:0	R	0x00	Channel 4 Current LSB
0x9A	4:0	R	0x00	Channel 5 Current MSB
0x9B	7:0	R	0x00	Channel 5 Current LSB
0x9C	4:0	R	0x00	Channel 6 Current MSB
0x9D	7:0	R	0x00	Channel 6 Current LSB
0x9E	4:0	R	0x00	Channel 7 Current MSB
0x9F	7:0	R	0x00	Channel 7 Current LSB

- Channel 0~7 Voltage Registers @0xA0~0xAF of Page0

ADD	Bit #	R/W	Default	Description
0xA0	3:0	R	0x00	Channel 0 Voltage MSB
0xA1	7:0	R	0x00	Channel 0 Voltage LSB The MSB 8 bits are integer and the LSB 4 bits are fractional. Unit is in Volts. This value is updated every time the port is polled. ※ Note that the true channel voltage is (Supply Voltage-Channel Voltage). Please, refer to Supply Voltage Register.
0xA2	3:0	R	0x00	Channel 1 Voltage MSB
0xA3	7:0	R	0x00	Channel 1 Voltage LSB
0xA4	3:0	R	0x00	Channel 2 Voltage MSB
0xA5	7:0	R	0x00	Channel 2 Voltage LSB
0xA6	3:0	R	0x00	Channel 3 Voltage MSB
0xA7	7:0	R	0x00	Channel 3 Voltage LSB
0xA8	3:0	R	0x00	Channel 4 Voltage MSB
0xA9	7:0	R	0x00	Channel 4 Voltage LSB
0xAA	3:0	R	0x00	Channel 5 Voltage MSB
0xAB	7:0	R	0x00	Channel 5 Voltage LSB
0xAC	3:0	R	0x00	Channel 6 Voltage MSB
0xAD	7:0	R	0x00	Channel 6 Voltage LSB
0xAE	3:0	R	0x00	Channel 7 Voltage MSB
0xAF	7:0	R	0x00	Channel 7 Voltage LSB

- Supply Voltage Registers @0x8E~0x8F of Page0

ADD	Bit #	R/W	Default	Description
0x8E	3:0	R	0x00	Supply Voltage MSB
0x8F	7:0	R	0x00	Supply Voltage LSB The MSB 8 bits are integer and the LSB 4 bits are fractional. Unit is in Volts. This value is updated every time the port is polled.

- Channel 0~7 PD Requested Class Status Register @0x28~0x2F of Page0

ADD	Bit #	R/W	Default	Description
0x28	3:0	R	0x00	PD Requested Class of Channel 0 0001 : Class1, 0010 : Class2, 0011 : Class3, 0100 : Class4, 0101 : Class5, 0110 : Class6, 0111 : Class7, 1000 : Class8, 1001~1010 : Classification Error
0x29	3:0	R	0x00	PD Requested Class of Channel 1
0x2A	3:0	R	0x00	PD Requested Class of Channel 2
0x2B	3:0	R	0x00	PD Requested Class of Channel 3
0x2C	3:0	R	0x00	PD Requested Class of Channel 4
0x2D	3:0	R	0x00	PD Requested Class of Channel 5
0x2E	3:0	R	0x00	PD Requested Class of Channel 6
0x2F	3:0	R	0x00	PD Requested Class of Channel 7

- Channel 0~7 PD Allocated Class Status Register @0x30~0x37 of Page0

ADD	Bit #	R/W	Default	Description
0x30	3:0	R	0x00	PD Allocated Class of Channel 0 0001 : Class1, 0010 : Class2, 0011 : Class3, 0100 : Class4 0101 : Class5, 0110 : Class6, 0111 : Class7, 1000 : Class8
0x31	3:0	R	0x00	PD Allocated Class of Channel 1
0x32	3:0	R	0x00	PD Allocated Class of Channel 2
0x33	3:0	R	0x00	PD Allocated Class of Channel 3
0x34	3:0	R	0x00	PD Allocated Class of Channel 4
0x35	3:0	R	0x00	PD Allocated Class of Channel 5
0x36	3:0	R	0x00	PD Allocated Class of Channel 6
0x37	3:0	R	0x00	PD Allocated Class of Channel 7

- Device ID Register @0x01~0x02 of Page0

ADD	Bit #	R/W	Default	Description
0x01	7:0	R	0x38 0x34 0x28	Device ID [15:8] 0011,1000 0011,0100 0010,1000
0x02	7:0	R	0x00	Device ID [7:0]

※ Additional information of register will be provided upon request.