

# User Manual





## H6120M

6CH Matrix Mixer amplifier  
with SD/FM/Bluetooth/USB

# 6 Zones Matrix Mixer Amplifier

## SAFETY WARNINGS!

1. Read and keep these instructions.
2. Heed all warnings and follow all instructions.
3. Do not use this apparatus near water.
4. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
5. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus that produce heat.
6. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong is provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
7. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
8. Only use attachments/accessories specified by the manufacturer.
9. Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.
10. Unplug this apparatus during lightning storms or when unused for long periods of time.
11. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
12. This appliance shall not be exposed to dripping or splashing water and that no object filled with liquid such as vases shall be placed on the apparatus.
13. Plug this apparatus to the proper wall outlet and make the plug to be disconnected readily operable.
14. Main plug is used as disconnected device and it should remain readily operable during intended use. In order to disconnect the apparatus from the mains completely, the mains plug should be disconnected from the mains socket outlet completely.
15. **WARNING:** To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture.
16. An appliance with a protective earth terminal should be connected to a mains outlet with a protective earth connection.

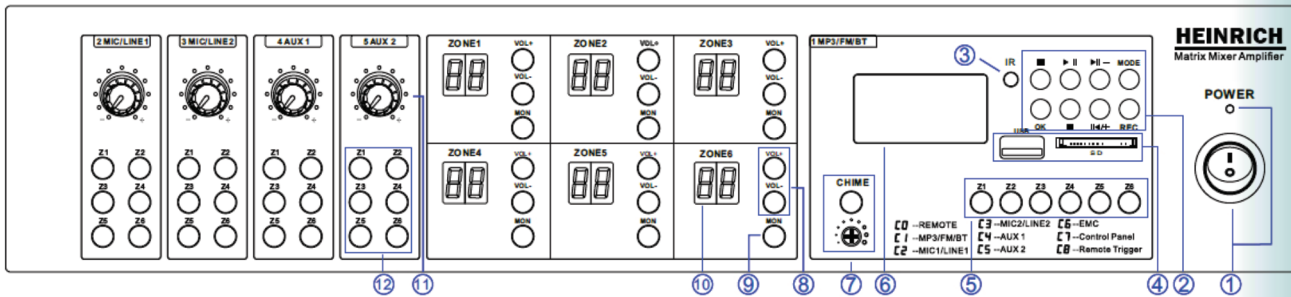
<h3>WARNING!</h3>		
<p>TO PREVENT FIRE OR SHOCK HAZARD, DO NOT USE THE PLUG WITH AN EXTENSION CORD, RECEPTACLE OR OTHER OUTLET UNLESS THE BLADES CAN BE FULLY INSERTED TO PREVENT BLADE EXPOSURE.</p> <p>TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.</p> <p>TO PREVENT ELECTRICAL SHOCK, MATCH WIDE BLADE PLUG TO WIDE SLOT, FULLY INSERT.</p>		
 <p>The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.</p>	<p><b>CAUTION</b></p> <p>RISK OF ELECTRIC SHOCK DO NOT OPEN</p> <p><b>WARNING:</b> TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.</p>	 <p>The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.</p>

# 6 Zones Matrix Mixer Amplifier

## INSTRUCTIONS

- 6x6 Matrix mixer amplifier with 6 x 60W, 6 x 120W outputs.
- 5 sources and EMC input matrix distributed to 6 speaker zones.
- MP3/FM/Bluetooth, 3 mic/line, aux input & EMC mute input with priority.
- 6 channel mixer amplifier controller with audio sources, zone volume control .
- Matrix amplifier with remote control panel and remote paging microphone.
- 6 remote control by CAT5 cable up to 200 meters to select program and control volume.
- 6 remote paging microphone by CAT5 cable up to 200 meters communication.
- Different 6 zone of different music program and different volume output.
- 6 Zone speaker outputs of 100V or 4/8 Ohms speakers.
- 3 mic/line switchable inputs of balanced XLR with 48V phantom power.
- 1 aux input and an integral USB/SD/FM player and Bluetooth can be matrix switched to any of the 6 zones independently.
- Mic 1 channel has a variable override and each microphone input has switchable phantom power.
- 6 zone remote paging microphone for paging & announcement system.
- Designed for multi-room systems requiring different audio sources.
- Integral USB/SD/FM audio player and remote control.
- Internal Bluetooth receiver with mobile use.
- 100V or 4/8 Ohms operation for PA system and hi-fi both sound system.
- 6 independent output zones for multiple room sound system.
- 24V mute contacts to integrate with fire alarm system.
- AC230V and 24V DC both operation system.

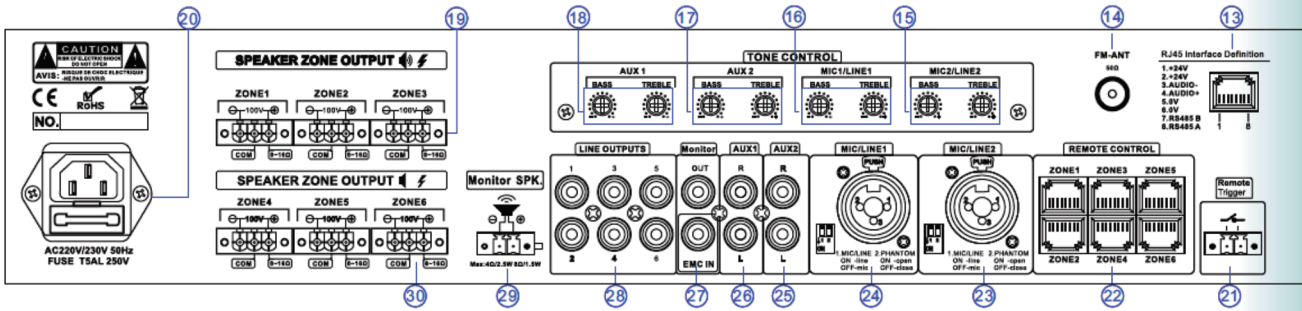
## Front Panel



1. Power Switch/ Power indicate.
2. MP3/FM/Blue tooth media player module.
3. IR receiver.
4. SD card slot/ MP3 slot.
5. Zone selector for MP3: You can choose MP3 play to any of zone.
6. Chime/ Volume control for Chime.
7. MP3 display.
8. Zone Volume control.
9. MON: Monitor Open or Close.
10. Display of zone: This will show which audio source is playing on current zone.
11. Volume control for audio input.
12. Zone selector for Mic/Line: You can choose MIC/Line audio input play to any of zone.

# 6 Zones Matrix Mixer Amplifier

## Rear Panel



- 13. RJ45 interface definition.
- 14. FM antenna Zone output-100V&8ohms.
- 15. Bass & Treble volume control MIC2/Line2.
- 16. Bass & Treble volume control MIC1/Line1.
- 17. Bass & Treble volume control AUX2.
- 18. Bass & Treble volume control AUX1.
- 19. Speaker line output.
- 20. Power Socket.
- 21. Horn output (24V signal to trigger play the EVAC message build in).
- 22. Remote Microphone & Remote volume control interface.
- 23. MIC/LINE2 XLR input.
- 24. Mic 1/Line 1 XLR Input.
- 25. AUX2 input.
- 26. AUX1 input.
- 27. EMC input/ Monitor Output.
- 28. Line output.
- 29. Monitor speaker output.
- 30. Zone 3-6 speaker output.

## AMPLIFIER OPERATION GUIDANCE

### Connection and setup

- ▶ With the controller power switched off, connect the rear IEC inlet to the mains using the supplied mains lead (or an equivalent approved type). Ensure that the voltage is correct and the speaker connect is correct then power on.
- ▶ The controller has 5 input channels and an integral multi-source audio player.
- ▶ Microphone input 1, 2 and 3 are designed for either microphones or line level sources (such as a CD/mp3 player or output from a mixer) via combo connectors on the rear panel, it is switch able by DIP switch.
- ▶ These can accept either XLR or 6.3mm plugs for balanced or unbalanced signals.

### DIP switches

- ▶ Mic/Line inputs 1, 2 and 3 each have 2 DIP switches on the rear panel to set the input level and/or activate +20V phantom power for use with condenser microphones.

# 6 Zones Matrix Mixer Amplifier

- ▶ Set the level correctly for the type of input source connected (Mic or Line)
- ▶ If the source connected is a condenser microphone which requires phantom power, make sure that the phantom is switched on for that channel.
- ▶ Be sure to make these DIP switch settings when the amplifier is switched off. Making any changes when the amplifier is powered up may cause loud bangs through the system which can damage the speakers.

## Priority and Emergency Activation

1. Horn output- with a 24V trigger voltage will active the message build-in.
2. EMC input- this one is EMC audio input.
3. Remote microphone.
4. Other Local input.

## Signal Inputs and Outputs

- ▶ Connect microphones or line signals to Mic/Line 1, 2 and 3 inputs, using good quality signal leads. A stereo or mono line level source can be connected to the Auxiliary channel 4 input on 2 RCA connectors (26).
- ▶ For checking the output of any zone, an assignable Monitor output can be connected to headphones from the front panel 6.3mm jack or as a line output (e.g. to active speakers) from RCA connectors at the rear.
- ▶ Each zone output has a dedicated RCA signal output on the rear panel, which can be connected to the line inputs of active speakers or amplifiers. These are in addition to the speaker outputs detailed below.
- ▶ An antenna input is provided on the rear panel for connection to an external aerial for FM tuning. There are Bass and Treble volume control on rear panel to adjust the sound of MIC and Line input signal.

## Speaker outputs

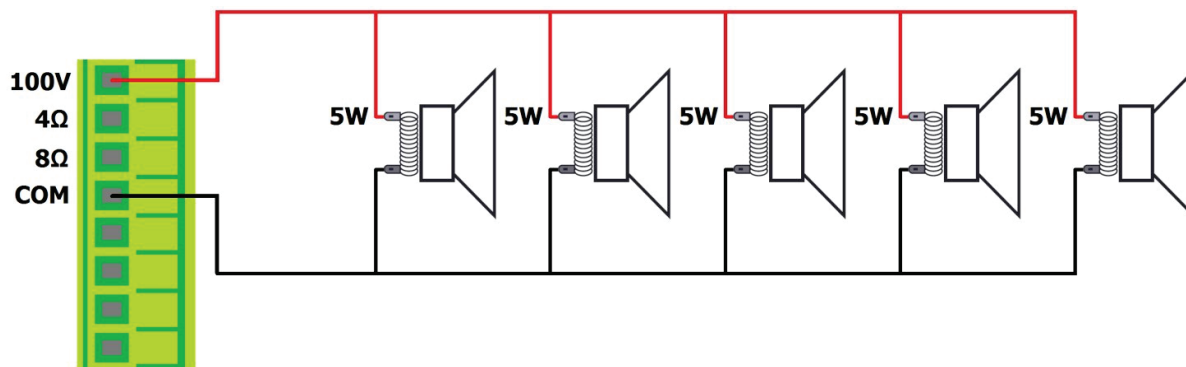
- ▶ The controller has a separate speaker output for each zone, connected via 3 large modular terminal plugs. Each plug can be removed from the rear panel for convenient connection of speaker outputs to 2 zones.
- ▶ Each zone output can be used to power either 100V line speakers or standard low impedance speakers. These 2 configurations cannot be used together, so it is important to decide which will be used at the start.

## 100V line systems

For 100V speakers, connect the selected zone output to the first speaker in the zone using double-insulated speaker wire which has adequate current rating to handle the total output of the amplifier.

Connect the "100V" output terminal for the selected zone to the positive (+) connection of the speaker and "COM" output to the negative (-) connection of the speaker. Connect further speakers in parallel to the first speaker with all positive terminals and connected together and all negative terminals connected together as shown below.

# 6 Zones Matrix Mixer Amplifier



A 100V line speaker system can comprise of many speakers connected together. The determining factor for how many speakers can be used on a single amplifier is the power rating. For most purposes, it is advised to connect as many speakers as needed with a combined wattage of no more than 80% of the amplifier's output power rating (in the case of the controller, this is 30W per zone output)

The terminals of a 100V speaker are connected via a transformer and if necessary, this transformer may be "tapped" for different power ratings. These tapings can be used to adjust the wattage (and output volume) of each speaker in a zone to help achieve the ideal total power of the system for the relevant zone output.

## Low impedance systems

Alternatively, each zone output of the RM306 is capable of powering one or more low impedance speakers. There is an option on each zone for either a 4Ω or 8Ω speaker output to determine the minimum impedance. It is essential to select the correct output terminal when opting for low impedance speakers.

For a single 8Ω speaker, connect the positive (+) wire to the "8Ω" terminal and the negative (-) wire to "COM". For a single 4Ω speaker or for 2 x 8Ω speakers connected in parallel, connect the positive (+) wire to the "4Ω" terminal and the negative (-) wire to "COM".

In either case, the connected load should have a combined impedance no lower than stated on the terminal. Lower impedance may cause irreparable damage to the amplifier.

The connected speaker(s) must also have a power handling to accept up to 30Wrms from the zone output. Lower power handling may risk damage to the speakers.

## Operation

When all connections to the amplifier are made, turn all rotary controls down and switch on the power and the power LED will illuminate.

To check for correct operation of the system, select an input source and output zone for testing. In the following example, Mic/Line 1 input and Zone 1 output have been selected.

Press Z1 button on the line of MIC/Line1, if zone1 display C2, that means MIC/Line1 output to zone 1

If you playing MP3, press zone1 on the line of MP3, then zone 1 will have MP3 music and display on Zone1 will show C1

If Zone 1 cannot be heard from the location of the controller, use the monitoring feature as follows Press the button of Monitor (12) and connect headphones to the Monitor output (15)

Make sure that the Monitor button for Mic/Line 1 is pressed in and listen through the headphones Gradually turn up the Monitor level control and check for the output to Zone 1

# 6 Zones Matrix Mixer Amplifier

## Onboard Multi-Source Audio Player

The controller is fitted with a built-in audio player, operated via a backlit LCD display and transport buttons. This section provides access to a Bluetooth™ receiver, FM radio tuner and USB/SD audio player

In order to play audio to one of the zones, it is necessary to press in one of the “Play” button;

Mode: Select between Bluetooth, FM tuning, USB or SD playback

Play: play music

Folder: hold on the music

Prev: Back to last music

Next: go to next Music

Vol+: Increase volume

Vol-: Reduce Volume

Short press: Prev& Next

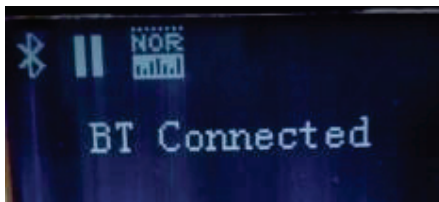
Long Press: Vol+&Vol-



## Bluetooth Operation

In order to play back audio from a smartphone, tablet or other Bluetooth device, the built-in Bluetooth receiver will need to be paired with a device which is within range.”

To pair a device with the controller Bluetooth receiver, it is necessary to scan for devices in the Bluetooth menu of the sending device and select to pair with “MS-8”. Once paired, the controller display will show it is connect



Select to connect as an audio device and play audio tracks on the smartphone or tablet (or other) and the audio should be heard on the selected zone.

The buttons labelled “Prev” and “Next” can adjust the audio player output volume. Press and hold “Prev” to increase volume or press and hold “Next” to decrease volume.

If the sending device goes out of range or the Mode of the audio player is changed, the connection will stop. Returning to within range or to Bluetooth mode will restore the pairing. It may be necessary to re-select connection as an audio device on the sending device.

## FM Tuner

Press the Mode button to switch to the FM tuner function. For good FM reception, it will be necessary to connect an external aerial to the Antenna connector on the rear panel using good quality coaxial RF cable terminated .

If no channels are tuned in, press the Play button to begin auto tuning, which scans available stations and stores them as channels within the controller FM tuner. To step through pre-set stations, press the Previous or Next buttons.

# 6 Zones Matrix Mixer Amplifier

## Led Display Meaning

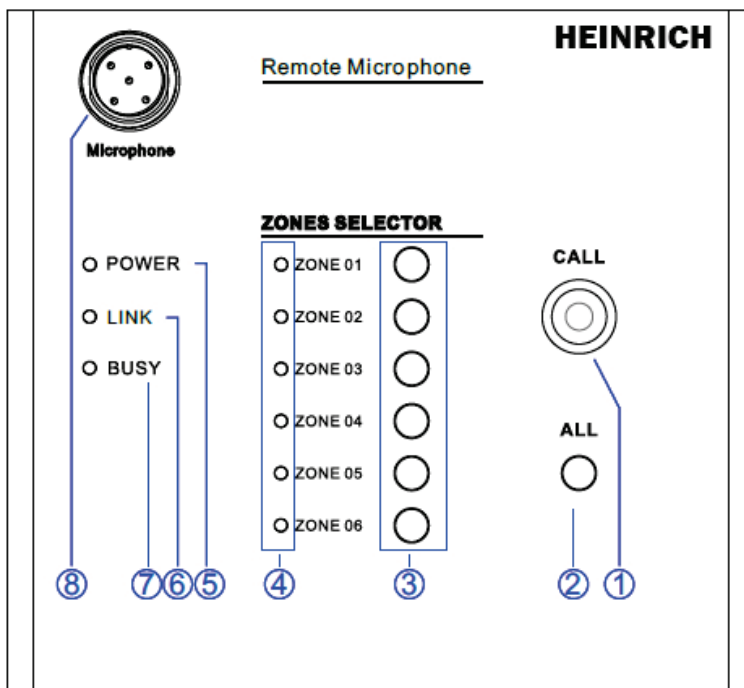
C0-FA-600XM  
C1-MP3 Module  
C2-MIC1/Line1  
C3-MIC2/Line2  
C4-MIC3/Line3  
C5-AUX  
C6-EMC  
C7-Local input  
C8-HORN 24V signal

## USB/SD Player

The controller audio player has inputs for a USB pen drive or SD card with standard compressed digital audio files on them. Inserting either or both of these will switch the player to read from these sources and the display will show "MP3 Mode".

After you Insert the USB it will play automatically, you can use "Prev" or "NEXT" to choose last or next song, "REPT" is for one song or all song repeat.

## Remote Paging Microphone

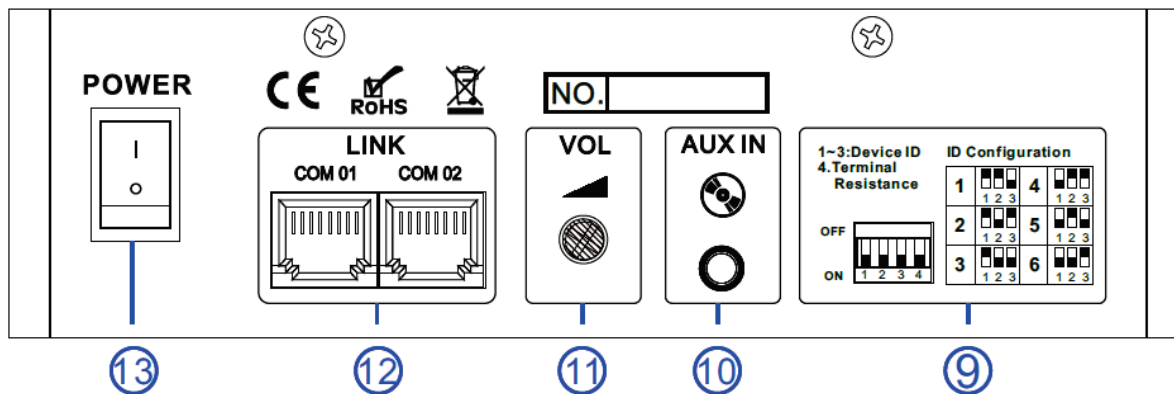


- 1.Call button
- 2.All zone selection button
- 3.Zone selection button
- 4.Zone led
- 5.Power LED
- 6.Communicate LED
- 7.Busy led –if on means current host zone is busy
- 8.Paging Microphone



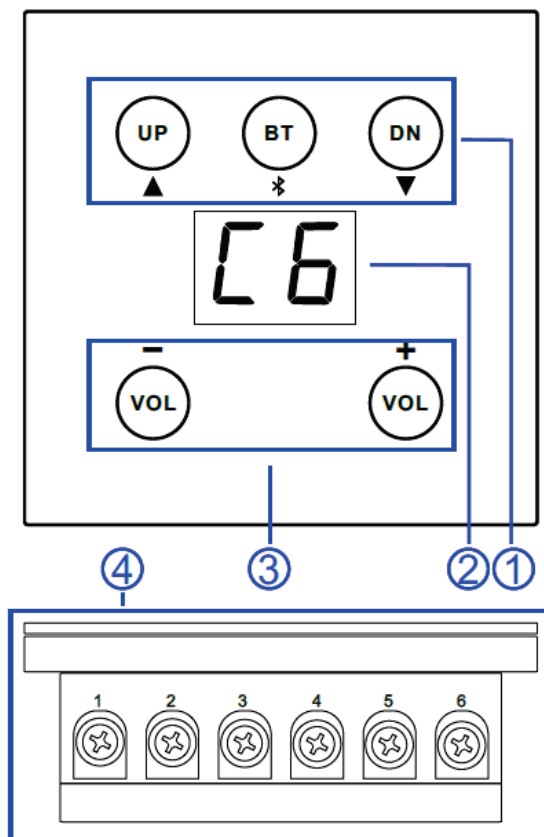
# 6 Zones Matrix Mixer Amplifier

## Remote Paging Microphone Rear Panel



9. DIP switch for each function(1-3 Device ID, 4 terminal resistance, 5-6 null)
10. Aux input
11. Microphone Volume control
12. RS-485port
13. Power switch

## Remote Wall Mount Control Panel



1. Audio source selection
2. Current zone audio source indicated led
3. Volume control
4. RS-485 cable connection

# 6 Zones Matrix Mixer Amplifier

## Specifications

Model	H660M	H6120M
Description	6×6 Matrix Mixer Amplifier with Mp3/FM/Blue Tooth	
Rated Power Output	6×60W	6×120W
Speaker Output	100V and 4-8 Ohms	
Input	Mic/line1-3: 2.5mV, balanced XLR input with 48V phantom power, Line1-2: 250mV; RCA type	
	Mute: 250mV, phoenix connector	
Remote Mic	6 units by CAT5 cable up to 200 meters, direct powered by amplifier	
Remote Panel	6 units by CAT5 cable up to 200 meters, direct powered by amplifier	
Frequency Response	80-16KHz	
THD	<0.1%	
S/N Ratio	>70dB	
Protection	High temp, short circuit, clip & overload protection	
Power Supply	AC230V or AC110V, 50-60Hz	
Power Consumption	400W	900W
Dimension	484(W)×320(D)×88(H)mm	
Weight	14.5kg	15.5kg

## SERVICE

Ensure the problem is not related to operator error, or system devices that are external to this unit. Information provided in the troubleshooting portion of this manual may help with this process. Once it is certain that the problem is related to the product contact your warranty provider as described in the warranty section of this manual.

## WARRANTY

Warranty terms of global three years. While the term and warranty may vary by country and may not be the same for all products. Terms and conditions of warranty for a given product may be determined first by locating the appropriate country which the product was purchased in, then by locating the product type.

**Note: Specifications may change without pre-notice.**

Disclaimer: As per our company policy one of the constant product improvements the right is there for reserved to modify the product specification without prior notice and the picture shown in the datasheet is a design base, the actual picture may vary.