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# WIDE BANDWIDTH AMPLIFIER UNIT
# C6438-02

The output signal from a photomultiplier tube can be directly input to the C6438-02 and it provides a voltage output signal with 50 Ω load at a conversion factor of 5 mV/μA.
The C6438-02 has a selecting switch to get the amplified non inverting-inverting output.




## FEATURES

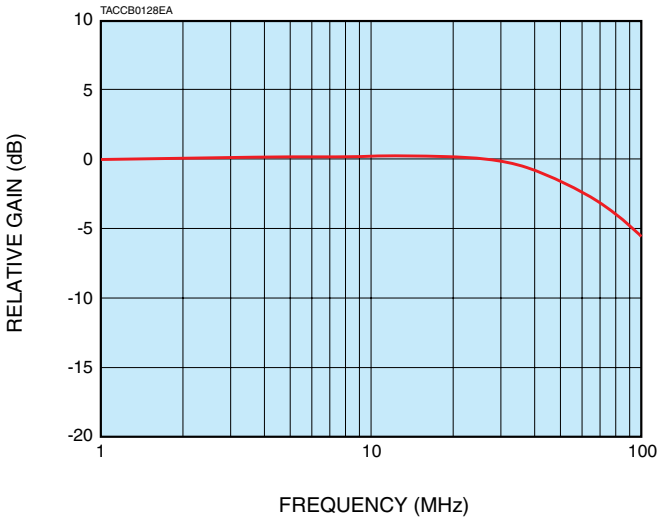
- **Wide Bandwidth: DC to 50 MHz**
- **Current-to-voltage Conversion Factor: 5 mV/μA at 50 Ω load resistance**
- **Non-inverting / Inverting Output Switchable**
- **Rise Time: 7 ns (Typ.)**
- **Compact · Light Weight**

## SPECIFICATIONS

| Parameter | | | Description / Value |
|---|---|---|---|
| Frequency Bandwidth (-3 dB) | | | DC to 50 MHz |
| Voltage Gain Ⓐ | | | 40 dB ± 3 dB (Approx. 100 times) |
| Current-to-voltage Conversion Factor | Load Resistance: 1 MΩ | | 10 mV/μA |
| | Load Resistance: 50 Ω | | 5 mV/μA |
| Rise Time | | Typ. | 7 ns |
| Input Polarity | | | Positive / Negative |
| Amplifying Method | | | Non-inverting / Inverting Output Ⓑ |
| Input Impedance | | | 50 Ω |
| Recommended Load Resistance | | | 50 Ω |
| Maximum Output Signal Voltage | Load Resistance: 1 MΩ | | ±3.0 V Min. |
| | Load Resistance: 50 Ω | | ±1.3 V Min. |
| Output Offset Voltage Ⓐ | | Typ. | ±1 mV |
| Output Noise Voltage Ⓐ | | Max. | 2 mV rms |
| Connector | Input | | BNC-R |
| | Output | | BNC-R |
| | Power | | DIN (6-pin) |
| Power Supply Voltage | | | ±5 V |
| Max. Power Supply Voltage | | | ±6.5 V |
| Power Supply Current | | Max. | ±140 mA |
| Operating Temperature | | | 0 °C to +40 °C |
| Storage Temperature | | | -10 °C to +60 °C |
| Weight | | | Approx. 165 g |

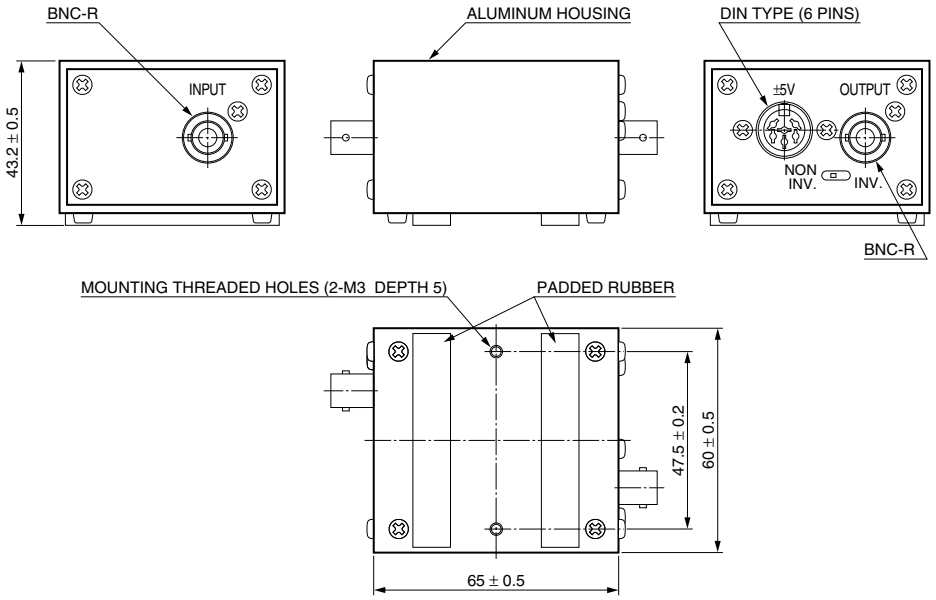
**NOTE:** ⒶLoad Resistance: 50 Ω ⒷSwitchable

Figure 1: Typical Frequency Response




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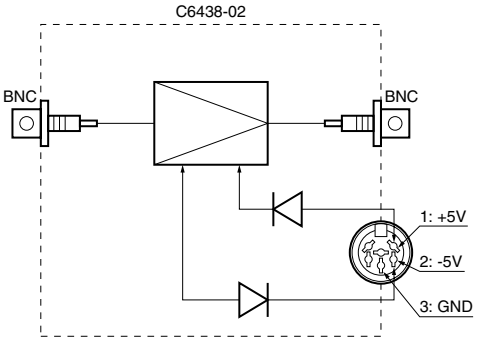
Figure 2: Dimensional Outline (Unit: mm)




* Power cable with a plug connector attached at one end is supplied with the C6438-02.

TACCA0321EA

Figure 3: Internal Connection Diagram




TACCC0163EA

| CONNECTOR PIN | WIRE COLOR | CONNECTION |
|---|---|---|
| 1 | Red | +5 V |
| 2 | White | -5 V |
| 3 | Yellow | GND |
| 4 | Blue | — |
| 5 | Green | — |
| 6 | Black | — |
| External Conductor | Shield | GND |

## RELATED PRODUCTS

### AMPLIFIER UNITS SELECTION GUIDE

| Parameter | C7319 | C12419 | C9999 | C6438<br>C6438-01<br>C6438-02 | C9663 | C11184 | C5594 |
|---|---|---|---|---|---|---|---|
| Frequency Bandwidth (-3 dB) | DC to 20 kHz or DC to 200 kHz (switchable) | DC to 1 MHz | DC to 10 MHz | DC to 50 MHz | DC to 150 MHz | DC to 300 MHz | 50 kHz to 1.5 GHz |
| Current-to-Voltage Conversion Factor (Load Resistance: 50 Ω) | -0.1 V/μA, -1 V/μA, -10 V/μA (switchable) * | -1 V/μA * | +50 mV/μA | +0.5 mV/μA (C6438)<br>+25 mV/μA (C6438-01)<br>±5 mV/μA (C6438-02) | +4 mV/μA | +1.25 mV/μA | +3.15 mV/μA |

* Load Resistance: 10 kΩ

Refer to the individual catalogs for detailed information.

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