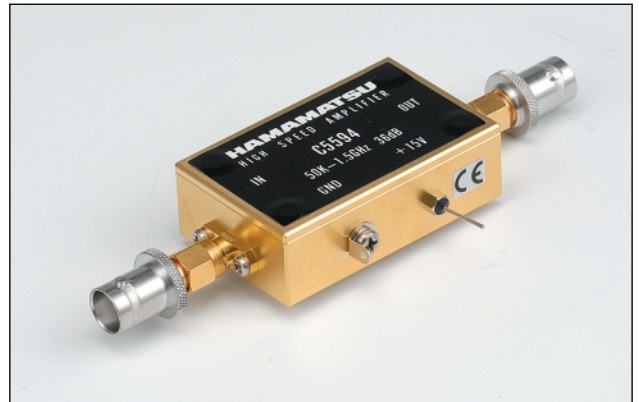


The C5594 series is designed for photomultiplier tubes (PMTs), especially fast time response PMTs.

This unit has high gain of 36 dB and wide frequency bandwidth of 50 kHz to 1.5 GHz, which can accurately amplify the PMT pulse output. Therefore it is well-matched to the application of Time Correlated Single Photon Counting (TCSPC) for fluorescence life time measurement with MCP-PMT and various time response measurements with PMT.



C5594-44

FEATURES

- Frequency bandwidth: 50 kHz to 1.5 GHz
- Current-to-voltage conversion factor: 3.15 mV/μA at 50 Ω load resistance
- Non-inverting output
- Selectable signal input / output connectors

SPECIFICATIONS

| Parameter | C5594-12 | C5594-22 | C5594-44 | Unit | |
|--|-----------------------|------------|------------|--------|---|
| Frequency bandwidth (-3 dB) | 50 kHz to 1.5 GHz | | | — | |
| Voltage gain ① | 36 (Approx. 63 times) | | | dB | |
| Current-to-voltage conversion factor ① | 3.15 | | | mV/μA | |
| Rise time | Typ. | 0.23 | | ns | |
| Input polarity | Positive / Negative | | | — | |
| Amplifying method | Non-inverting output | | | — | |
| Input / output impedance | 50 | | | Ω | |
| Recommended load resistance | 50 | | | Ω | |
| Maximum output signal voltage ① | +0.8 / -2.5 | | | V Min. | |
| Noise figure ① | Typ. | 5 | | dB | |
| Signal connector | Input | SMA-P | SMA-R | BNC-R | — |
| | Output | SMA-R | SMA-R | BNC-R | — |
| Power supply voltage | +12 to +16 | | | V | |
| Max. power supply voltage | +17 | | | V | |
| Power supply current ② | Max. | 95 | | mA | |
| Operating ambient temperature | 0 to +40 | | | °C | |
| Storage temperature | -15 to +60 | | | °C | |
| Weight | Approx. 70 | Approx. 70 | Approx. 90 | g | |

① Load resistance: 50 Ω

② Power supply voltage: +15 V

Figure 1: Typical frequency response

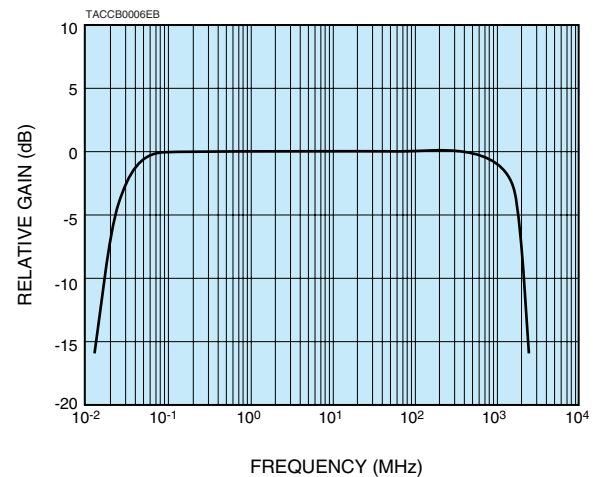
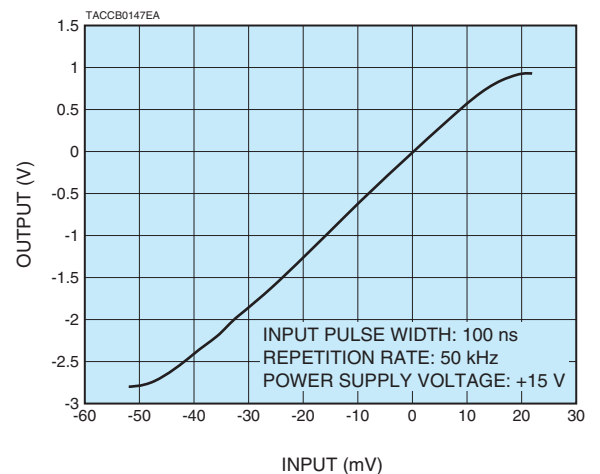


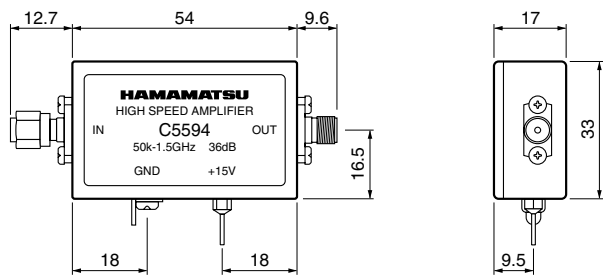
Figure 2: Input-output characteristics



HIGH SPEED AMPLIFIER UNIT C5594 SERIES

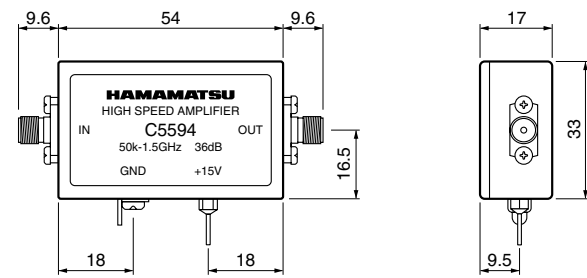
Figure 3: Dimensional outlines (Unit: mm)

C5594-12



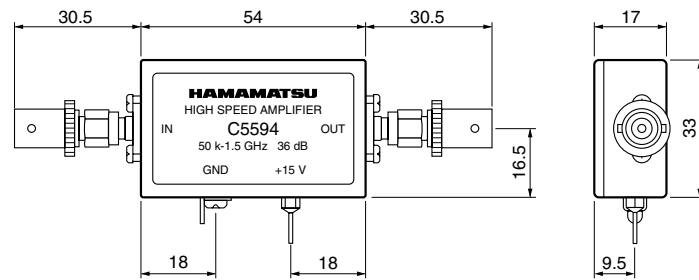
TACCA0344EA

C5594-22



TACCA0051EC

C5594-44



TACCA0295EB

| Type No. | Signal connector type | |
|----------|-----------------------|----------------|
| | Input | Output |
| C5594-12 | SMA plug | SMA receptacle |
| C5594-22 | SMA receptacle | SMA receptacle |
| C5594-44 | BNC receptacle | BNC receptacle |

OPTIONS (Sold separately)

● Coaxial cable assemblies (Impedance: 50 Ω)

| Type No. | Connector types | Length |
|----------|---------------------------|--------|
| A5026 | SMA plug - SMA plug | 300 mm |
| A5026-01 | SMA plug - SMA receptacle | 300 mm |

● Connector adapters

| Type No. | Connector types |
|----------|---------------------------------|
| A5059-01 | BNC receptacle - SMA receptacle |
| A5059-02 | BNC receptacle - SMA plug |
| A5059-03 | BNC plug - SMA receptacle |

RELATED PRODUCTS

AMPLIFIER UNITS SELECTION GUIDE

| Parameter | C7319 | C12419 | C9999 C9999-01 | C6438 C6438-01 C6438-02 | C9663 | C11184 |
|--|---|-------------|---|---|---------------|---------------|
| 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 |
| 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 (C9999) ±10 mV/μA (C9999-01) | +0.5 mV/μA (C6438) +25 mV/μA (C6438-01) ±5 mV/μA (C6438-02) | +4 mV/μA | +1.25 mV/μA |

* Load resistance: 10 kΩ ** Load resistance: 1 kΩ

Refer to the individual catalogs for detailed information.

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TACC1068E01
JUN. 2016 IP