

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 ③	0 to +40			°C	
Storage temperature ③	-15 to +60			°C	
Weight	Approx. 70	Approx. 70	Approx. 90	g	

① Load resistance: 50 Ω

② Power supply voltage: +15 V

③ No condensation

Figure 1: Typical frequency response

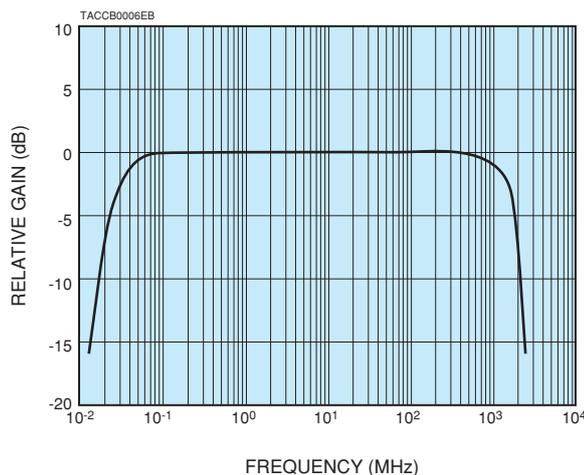
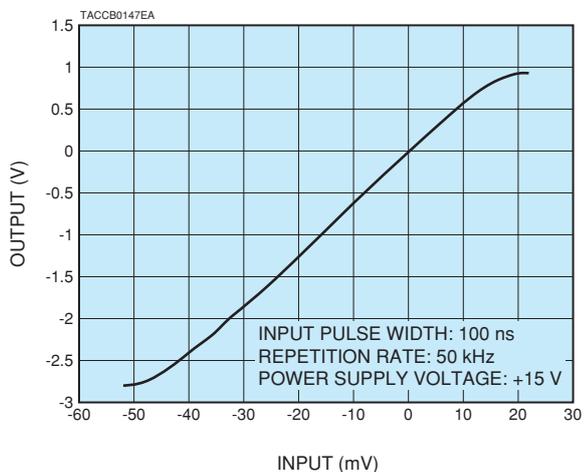


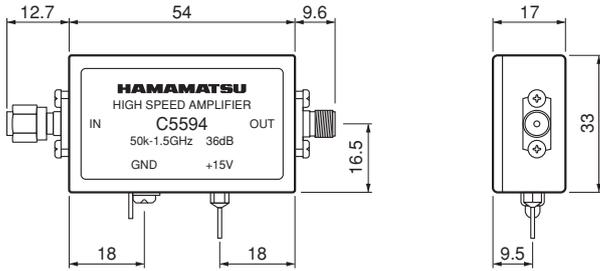
Figure 2: Input-output characteristics



HIGH SPEED AMPLIFIER UNIT C5594 SERIES

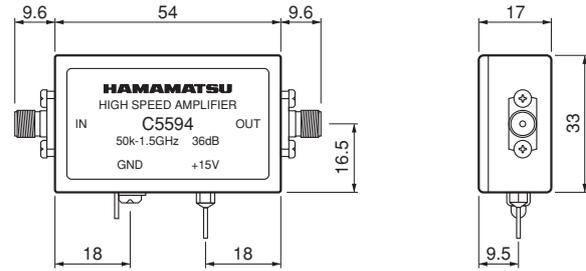
Figure 3: Dimensional outlines (Unit: mm)

C5594-12



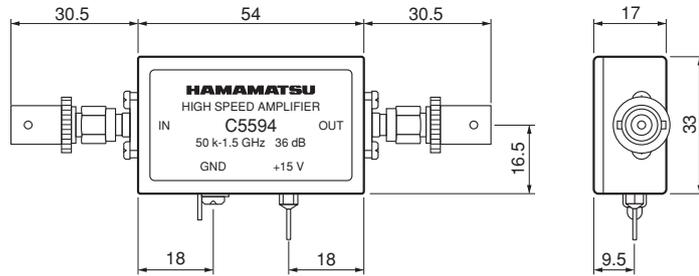
TACCA0344EA

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

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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