

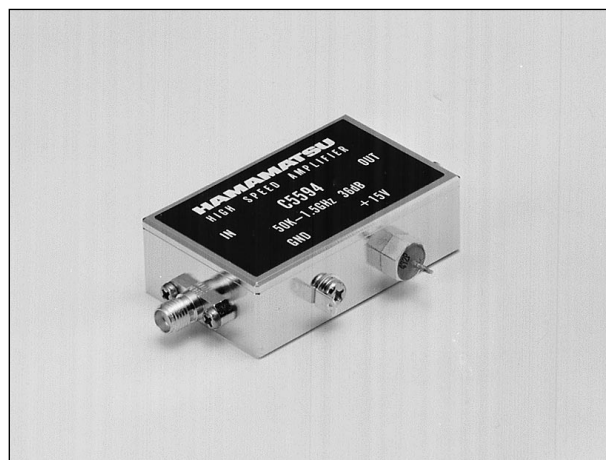
Gain: 36 dB (Voltage Gain of $\times 63$) Frequency Bandwidth: 50 k to 1.5 GHz

The C5594 is designed as the most suitable amplifier unit for photomultiplier tubes and a non-inverting type amplifier.

This unit has high gain of 36 dB (voltage amplification of $\times 63$) and wide frequency bandwidth of 50 kHz to 1.5 GHz, which can accurately amplitude the PMT pulse output.

Therefore it is well-matched to the application of Time Correlated Single Photon Counting (TCPC) for fluorescence life time measurement with MCP-PMT and various time response measurements with PMTs. It is possible to be operated at the applied voltage range of +12 to +16 volts.

The input and output connectors can be chosen by the combination of SMA and/or BNC.



TACCF0117

MAXIMUM RATINGS

Parameter	Symbol	Value	Unit
Supply Voltage	Vcc	+17	V
Input Signal Power	Pin	+10	dBm
Operating Temperature	Ta	0 to +50	°C
Storage Temperature	Tstg	-40 to +60	°C

RECOMMENDED OPERATING VOLTAGE RANGE

Parameter	Symbol	Value	Unit
Supply Voltage	Vcc	+12 to +16 ^(A)	V

^(A) Recommended Voltage: +15V

SPECIFICATIONS (at Vcc = +15 V/Ta = +25 °C)

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Upper Cutoff Frequency	fc (HIGH)	3 dB down point from the gain at 0.1 GHz	1.2	1.5	—	GHz
Lower Cutoff Frequency	fc (LOW)		—	50	100	kHz
Gain	G	f = 0.1 GHz	34	36	—	dB
Gain Flatness	ΔG	f = 200 k to 1 GHz	—	± 1.0	—	dB
Noise Figure	NF		—	5	—	dB
Input/Output Impedance	—		—	50	—	Ω
Current Consumption	Icc		—	95	—	mA

HIGH SPEED AMPLIFIER C5594 SERIES

Figure 1: Typical Small Signal Gain vs. Frequency

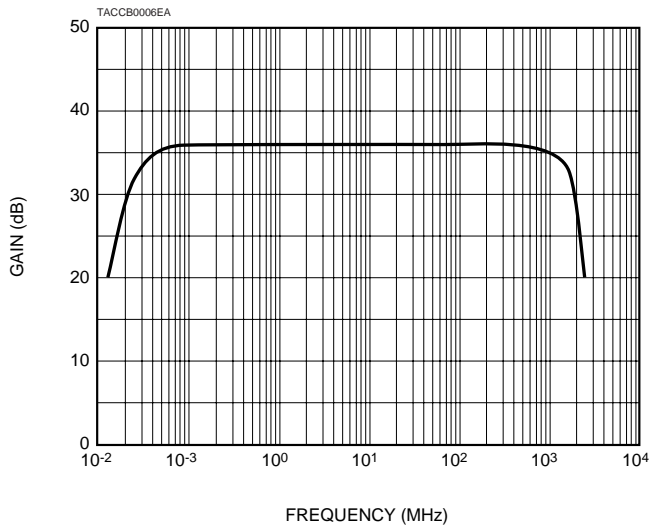


Figure 2: Typical Output Saturation

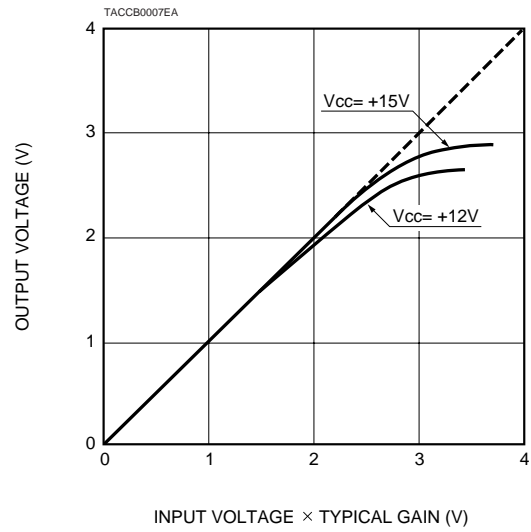
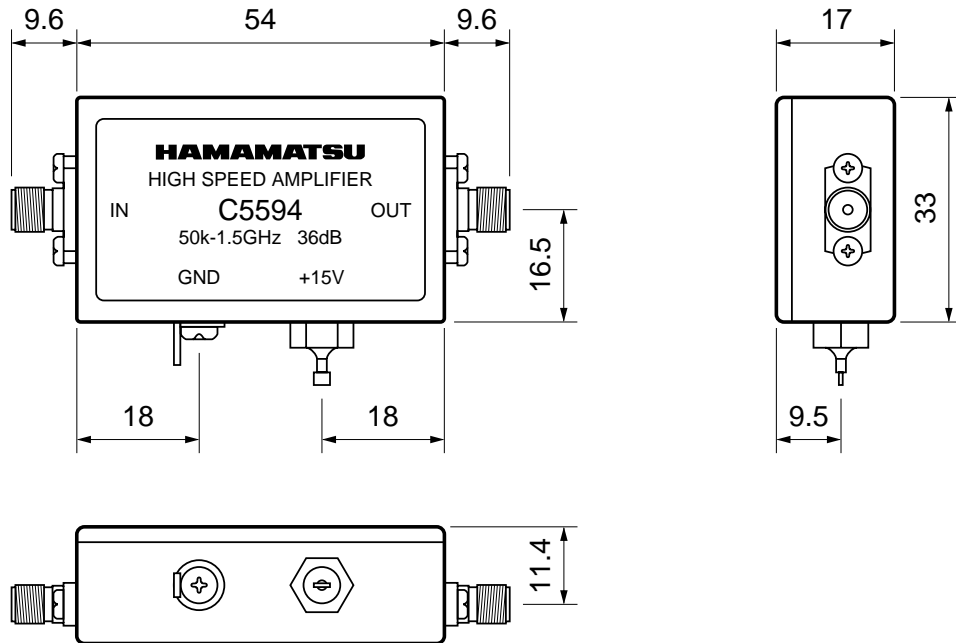


Figure 3: Dimensional Outline (C5594-22) (Unit: mm)



TACCA0051EB

MEASUREMENT EXAMPLE TTS (Transit Time Spread) of MCP-PMT R3809U-50

Figure 4: Measurement Set-up

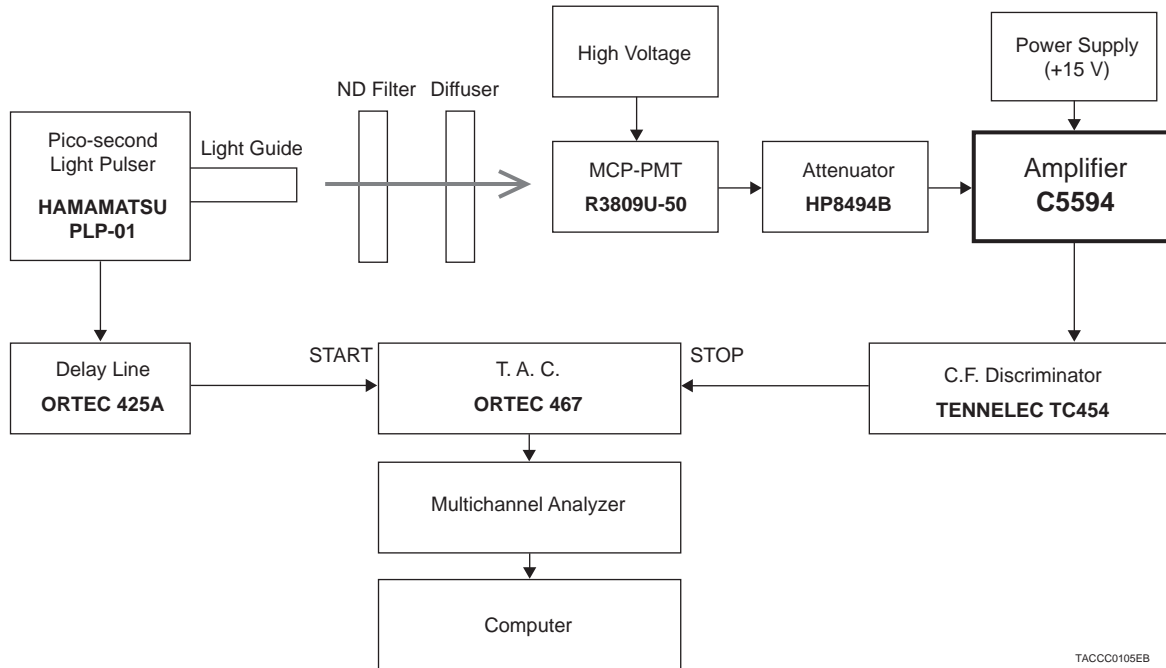
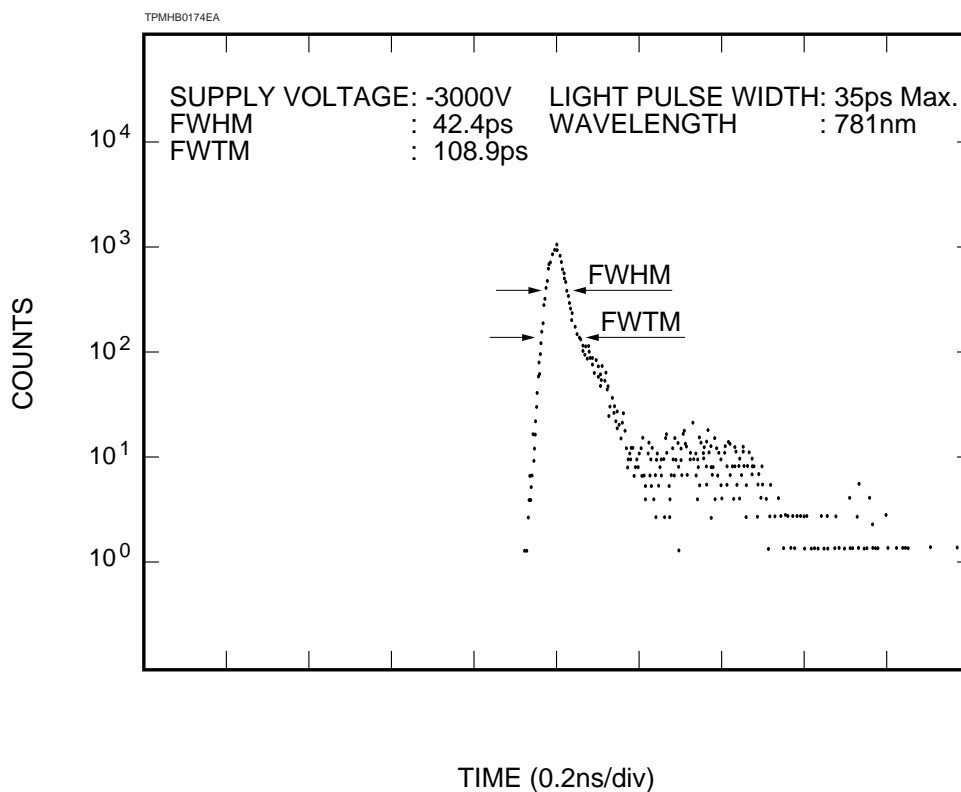


Figure 5: Test Results

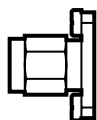


HIGH SPEED AMPLIFIER C5594 SERIES

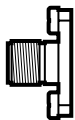
SUFFIX NUMBER AND INPUT/OUTPUT CONNECTORS

Input Connectors	Output Connectors	
	SMA Jack ②	BNC Jack ④
SMA Plug (Male) ①	C5594-12	C5594-14
SMA Jack (Female) ②	C5594-22	C5594-24
BNC Plug (Male) ③	C5594-32	C5594-34
BNC Jack (Female) ④	C5594-42	C5594-44

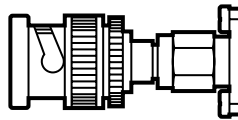
① SMA Plug (Male)



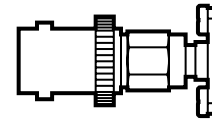
② SMA Jack (Female)



③ BNC Plug (Male)



④ BNC Jack (Female)

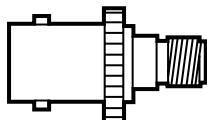


TACCC0093EA

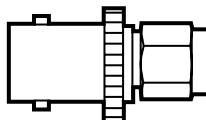
ACCESSORIES (OPTION)

[1] BNC-SMA Adaptors

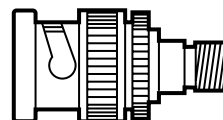
● A5059-01



● A5059-02



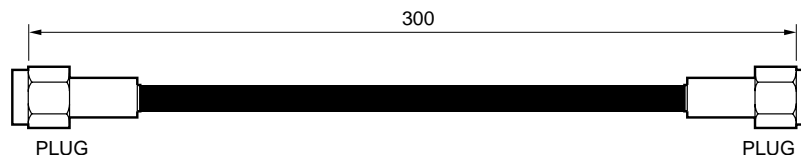
● A5059-03



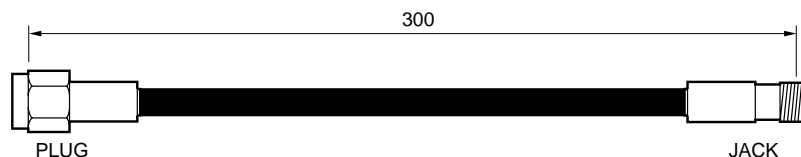
TACCC0104EA

[2] Coaxial Cable Assemblies with SMA Connectors (Unit : mm)

● A5026



● A5026-01



TACCA0052EA

HAMAMATSU

HAMAMATSU PHOTONICS K.K., Electoron Tube Center

314-5, Shimokanzo, Toyooka-village, Iwata-gun, Shizuoka-ken, 438-0193, Japan, Telephone: (81)539/62-5248, Fax: (81)539/62-2205

U.S.A.: Hamamatsu Corporation: 360 Foothill Road, P. O. Box 6910, Bridgewater, N.J. 08807-0910, U.S.A., Telephone: (1)908-231-0960, Fax: (1)908-231-1218

Germany: Hamamatsu Photonics Deutschland GmbH: Arzbergerstr. 10, D-82211 Herrsching am Ammersee, Germany, Telephone: (49)8152-375-0, Fax: (49)8152-2658

France: Hamamatsu Photonics France S.A.R.L.: 8, Rue du Saule Trapu, Parc du Moulin de Massy, 91882 Massy Cedex, France, Telephone: (33)1 69 53 71 00, Fax: (33)1 69 53 71 10

United Kingdom: Hamamatsu Photonics UK Limited: Lough Point, 2 Gladbeck Way, Windmill Hill, Enfield, Middlesex EN2 7JA, United Kingdom, Telephone: (44)181-367-6384

North Europe: Hamamatsu Photonics Norden AB: Färögatan 7, S-164-40 Kista Sweden, Telephone: (46)8-703-29-50, Fax: (46)8-750-58-95

Italy: Hamamatsu Photonics Italia: S.R.L.: Strada della Moia, 1/E, 20020 Arese, (Milano), Italy, Telephone: (39)02-935 81 733, Fax: (39)02-935 81 741

TACC1004E03
AUG. 1998 SI
Printed in Japan (300)