

HAMAMATSU

DEC. 2000

DA-TYPE SOCKET ASSEMBLIES C7247 SERIES

The C7247 series is a DA type socket assembly designed for 28 mm (1-1/8 inch) diameter side-on and head-on photomultiplier tubes. The C7247 series socket assembly incorporates a voltage-divider circuit and a current-to-voltage conversion circuit along with an amplifier having a wide bandwidth (0 Hz to 5 MHz).

The C7247 series converts the low-level, high-impedance current of a photomultiplier tube into a low-impedance voltage output by a factor of 0.3 V/ μ A.

Since the C7247 series employs an active voltage-divider circuit, it ensures an excellent DC linearity at low power consumption.

FEATURES

- Low power consumption
- Low offset voltage
- Wide frequency band
- Compact and light weight

SPECIFICATIONS

Parameter	C7247	C7247-01	Unit
Applicable Photomultiplier Tubes	28 mm Dia. Head-on R374, R2228, R5929, R6095, etc	28 mm Dia. Side-on R928, R3788, R3896, R4220, etc	—

MAXIMUM RATINGS

Parameter	Value	Unit
Input Voltage for Amplifier	± 18	V dc
Supply Voltage for Divider	-1500	V dc
Operating Temperature	0 to +40	$^{\circ}$ C
Storage Temperature	-15 to +60	$^{\circ}$ C

GENERAL

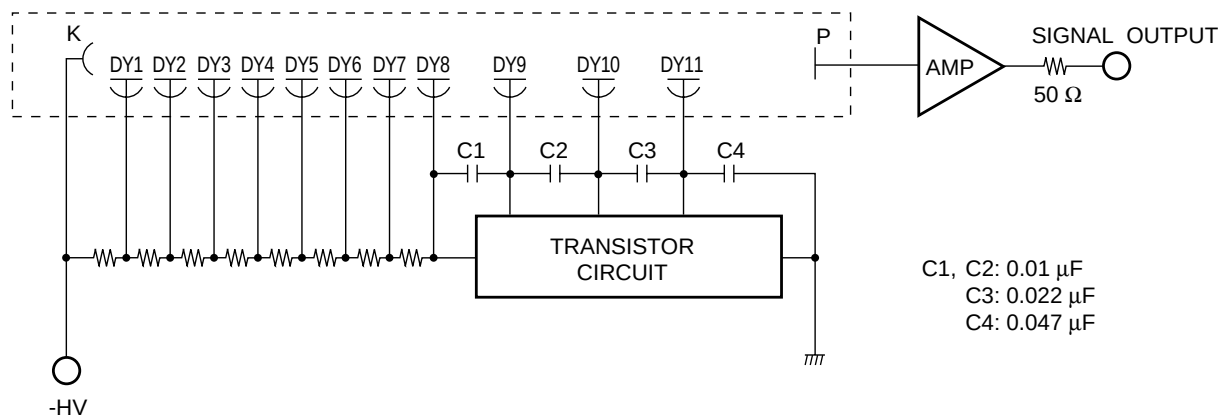
Parameter	C7247	C7247-01	Unit
Input Voltage for Amplifier	± 12 to ± 15 ^①		V dc
Input Current for Amplifier (at ± 15 V)	12		mA Typ.
Recommended Supply Voltage for Divider	-400 to -900	-300 to -600	V dc
Divider Current	219 (at HV=-900 V)	166 (at HV=-600 V)	μ A Typ.
Current to Voltage Conversion Factor	0.3		V/ μ A
Maximum Output Voltage (with no load resistor)	10		V
Output Voltage (with 50 Ω load resistor)	3		V
Maximum Input Signal Current (at 10 V output, HV=-1000 V with no load resistor)	DC	33	μ A
	Pulse	33	μ A
Frequency Bandwidth (-3 dB)	0 Hz to 5 MHz		—
Output Impedance	50		Ω
Offset Voltage	± 3		mV Max.
Output Noise Voltage	9		mV rms. Typ.
Total Power Consumption (at ± 15 V)	558 (at HV=-900 V)	460 (at HV=-600 V)	mW Typ.
Weight	55	50	g Typ.

① To be also practicable even with ± 5 V of input supply voltage except for narrow output range (2 V max).



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Figure 1. Schematic Diagram



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Figure 2. Frequency Response of Built-in Amplifier

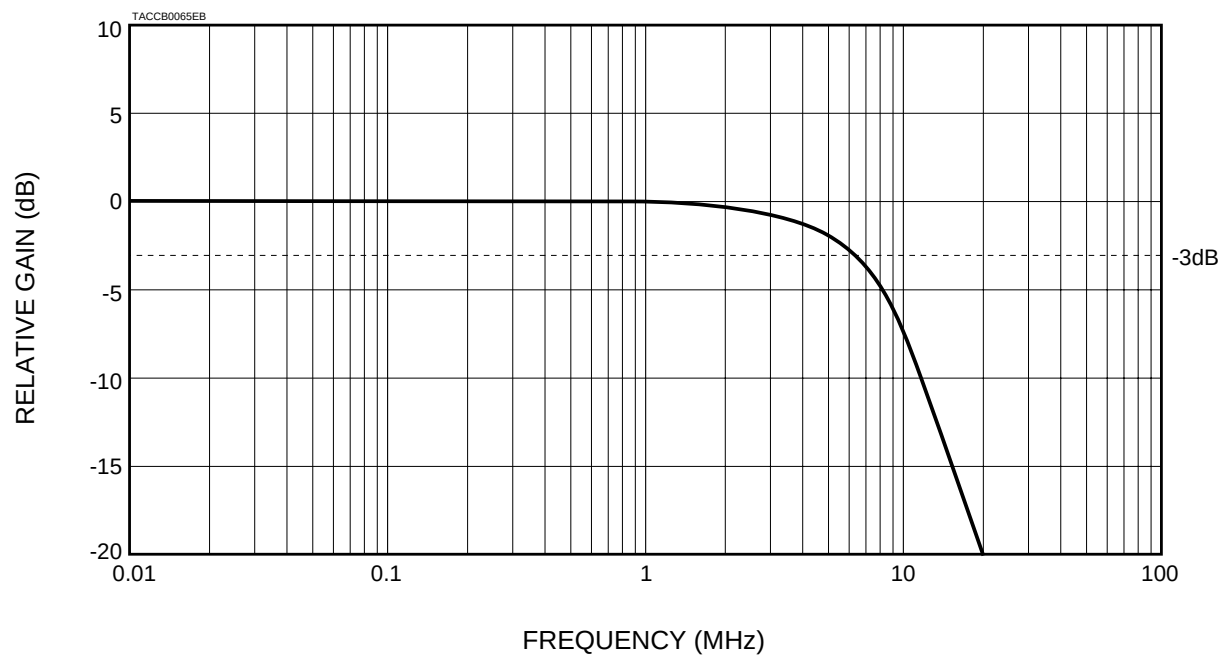
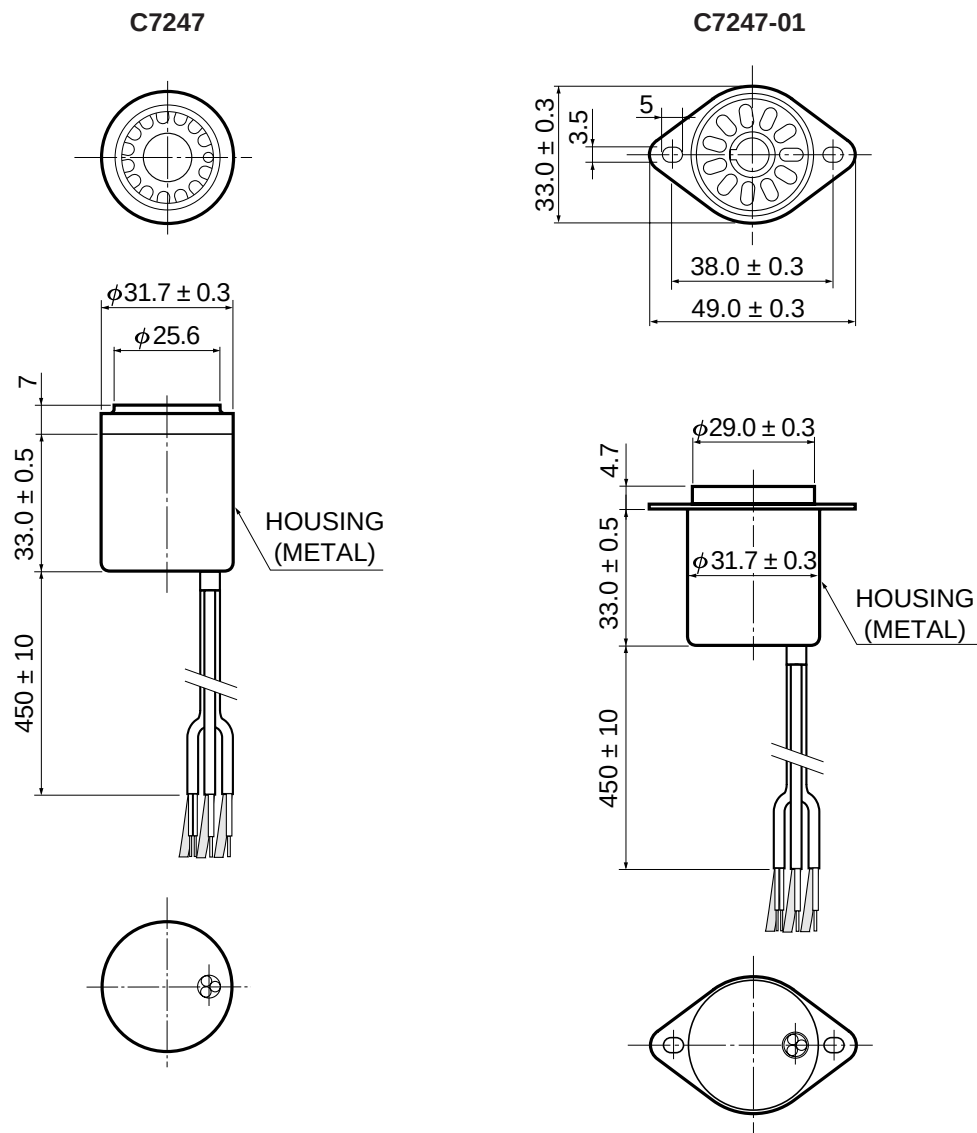


Figure 3. Dimensional Outline (Unit: mm)



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-HV	SHIELD CABLE ¹⁾	RED
SIGNAL OUTPUT	COAX RG-174/U	BLACK
± 15 V	SHIELDED CABLE (COVERING TWISTED PAIR) ²⁾	GRAY

NOTES: 1) At the end of HV cable, it's possible to attach SHV connector fitting RG-174/U.

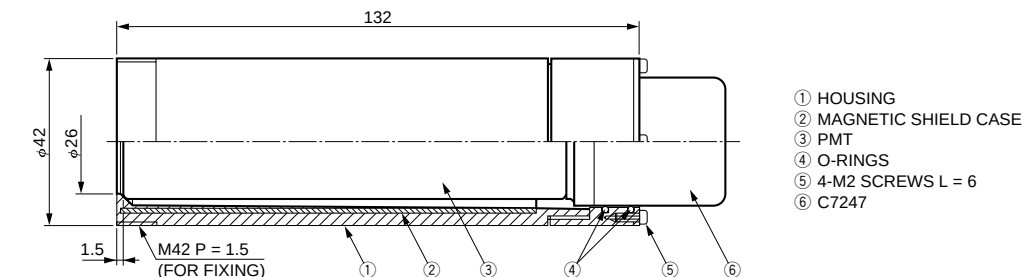
2) Connect as follows.

Orange Lead +15 V
White Lead -15 V
Shield GND.

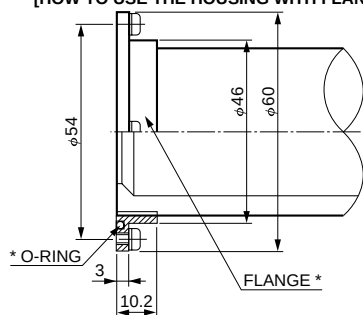
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OPTIONS

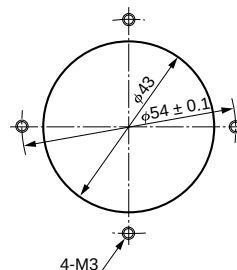
●HOUSING E7718 FOR C7247 (INCLUDING PART #①, ②, ④ AND ⑤) (Unit: mm)



[HOW TO USE THE HOUSING WITH FLANGE]



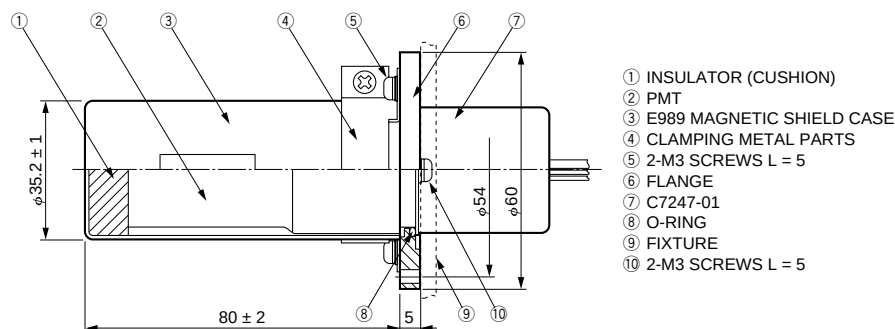
[SUGGESTED FIXTURE LAYOUT FOR THE FLANGE]



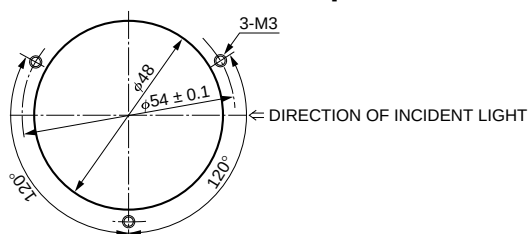
* THE FLANGE AND O-RING ARE AVAILABLE TO ORDER SEPARATELY AS P/N; A7719.

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●FLANGE SET A7709 FOR C7247-01 (INCLUDING PART #①, ④, ⑤, ⑥, ⑧ AND ⑩) (Unit: mm)



[SUGGESTED FIXTURE LAYOUT FOR THE FLANGE]



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