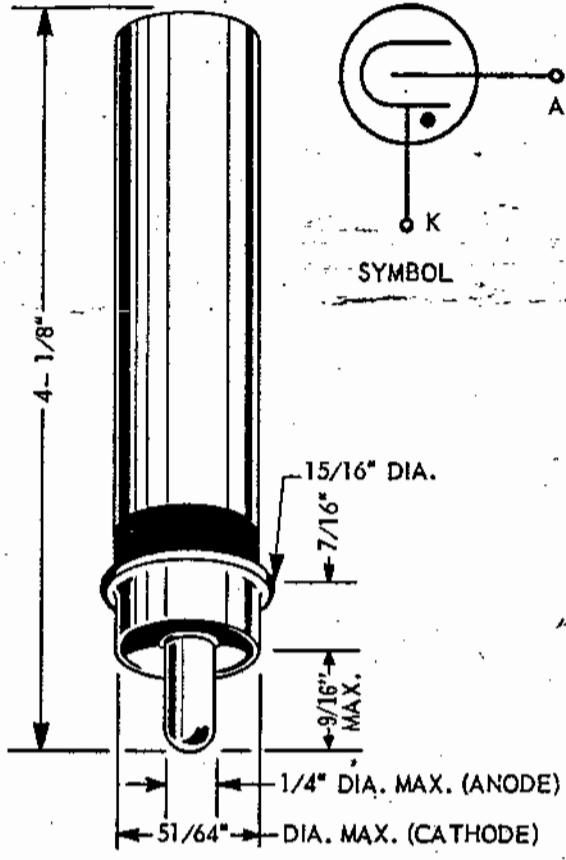


Victoreen

GEIGER-MUELLER TUBES

TYPES

1B85 AND 6306



The VICTOREEN 1B85 and 6306 are widely used, aluminum walled, organically quenched Geiger Counter tubes which are identical in dimensions and appearance. The 1B85 is the general purpose, beta-gamma counter. The inclusion of a bismuth coated copper screen makes the 6306 particularly efficient and highly sensitive to gamma energy in the range of 30 KeV to 1000 KeV although it reduces the Beta sensitivity. The curve on the reverse side illustrates this increased gamma sensitivity.

Shock and vibration resistance is substantially greater than for the glass-wall tubes.

Reliability, owing to high uniformity of construction, is an outstanding feature of these tubes. Fill gas is of the self quenching type; hence, the useful life is a function of, voltage, counting rate, and life test end point.

Simple mounting and replacement of tubes is achieved through the use of standard RETMA type A1-82 coaxial base.

The 1B85 counter tube is the first choice for use in portable survey instruments, area monitoring systems, and precision laboratory measuring equipment. Both tubes are ideally suited for multiple tube counters. Decoupling networks are unnecessary. The tubes are also well suited for coincidence and anti-coincidence circuits.

SPECIFICATIONS

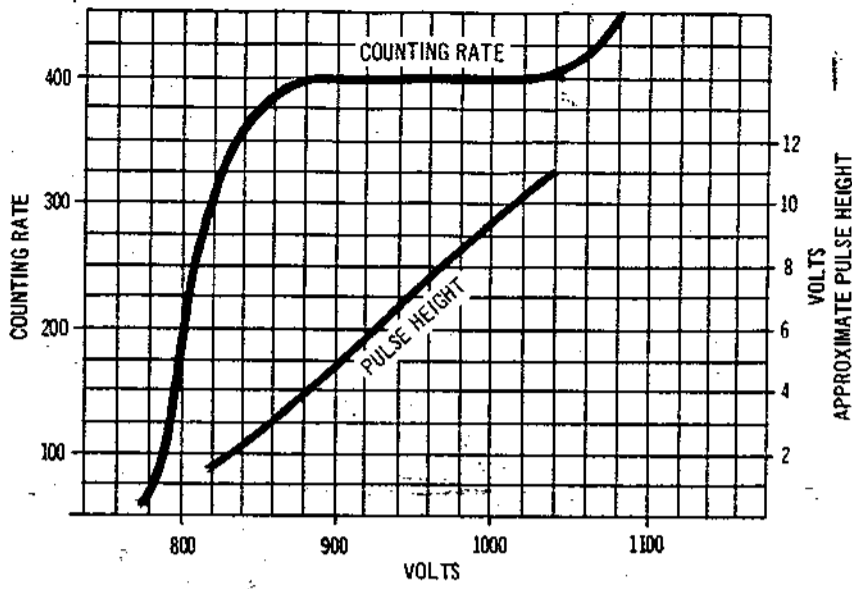


CHARACTERISTICS	1B85	6306
OPERATING VOLTAGE (MIN)	850 VOLTS	850 VOLTS
OPERATING VOLTAGE (MAX)	950 VOLTS	950 VOLTS
AMBIENT TEMPERATURE (MIN)	-30 °C	-30 °C
AMBIENT TEMPERATURE (MAX)	75 °C	75 °C
RELATIVE HUMIDITY (MAX)	95 %	95 %
BETA ENERGY (MIN)	160 KeV	
THRESHOLD VOLTAGE* (MAX)	800 VOLTS	825 VOLTS
PLATEAU LENGTH* (MIN)	200 VOLTS	150 VOLTS
PLATEAU SLOPE*	5 %/100 VOLTS	5 %/100 VOLTS
RECOVERY TIME	100 μSEC	100 μSEC
BACKGROUND (V ₀ =900V)	40 C/M	80 C/M
LIFE (AT 6000 C/M, V ₀ =900V)	10 ⁸ COUNTS	10 ⁸ COUNTS
LIFE TEST END POINT, SLOPE	10 %/100 VOLTS	20 %/100 VOLTS
ACTIVE LENGTH	(V ₀ =800 TO 1000 V) 2.75 INCHES	(V ₀ =875 TO 950 V) 2.75 INCHES
WALL (ALUMINUM)	30 MG/CM ²	30 MG/CM ²
SCREEN (COPPER)	—	100 MG/CM ²
PLATING (BISMUTH)	—	105 MG/CM ²
ELECTRODE CAPACITANCE	2 pF	2 pF

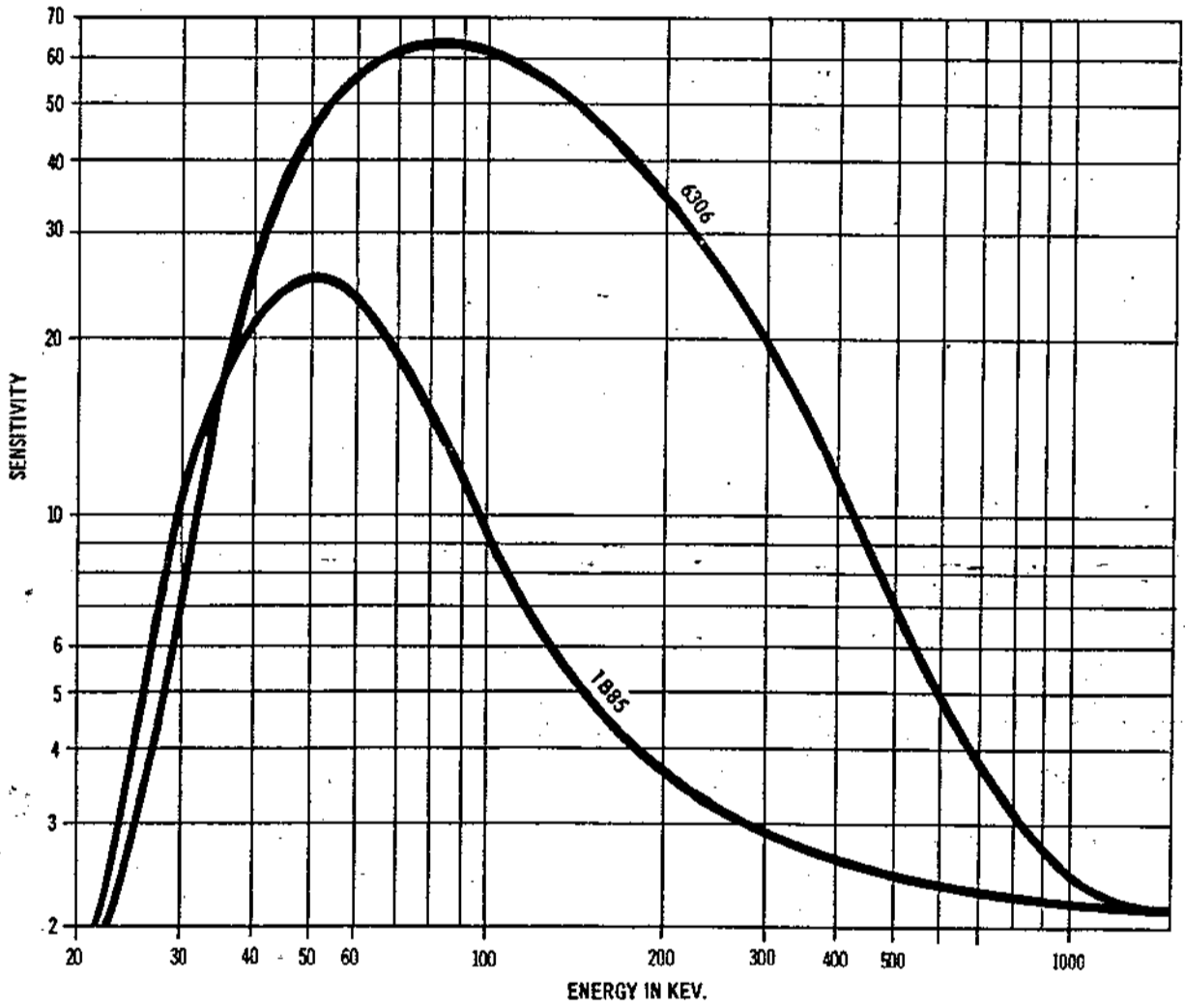
*NEW TUBES



1B85 AND 6306 TYPICAL TUBE OPERATION

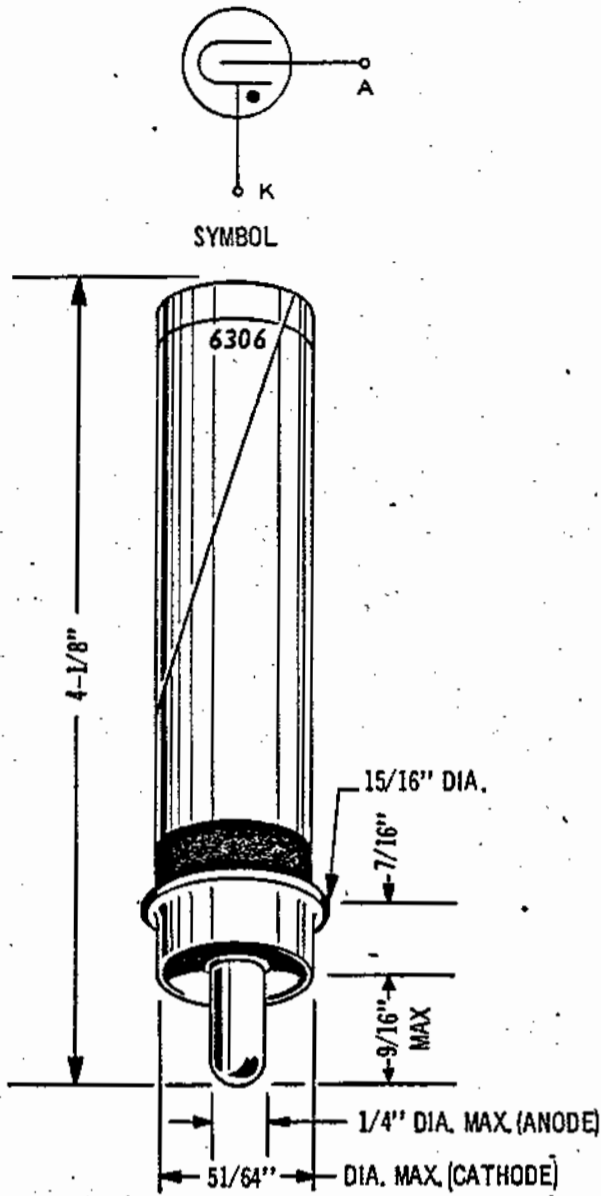


COMPARISON 1B85 - 6306



THE VICTOREEN INSTRUMENT COMPANY
5806 Hough Avenue, Cleveland, Ohio

HIGH-EFFICIENCY COUNTER TUBE



The 6306 is a high-efficiency beta-gamma counter tube similar to the widely used 1B85 but having a bismuth coated cathode.

The 6306 is designed for portable survey instruments, area monitoring devices, and precision laboratory measuring equipment. It is ideally suited for coincidence, anti-coincidence and for parallel operation. Decoupling networks are not essential. When used in clusters, these tubes compare favorably in cost and performance with scintillation counters.

It is interchangeable mechanically and electronically with the 1B85 counter tube. Unusual uniformity and close tolerances are maintained on the 6306 to give greater reliability. The fill-gas is one of the self-quenching type; hence, its useful life is a function of voltage, counting rate and desired life-test end point. The copper screen also serves to make the tube resist accidental denting.

Simple mounting and replacement are facilitated by using the standard RTMA Type A1-82 coaxial base. Water-tight mounting is easily obtained with the simple construction. Four standard mountings are available; the 380-26 probe socket, the Model 500 chassis socket, the 389-4 probe assembly and the 5100-81-S18 Truarc ring for chassis mounting. The shock and vibrat resistance is substantially greater than for glass tubes.

CHARACTERISTICS

THRESHOLD VOLTAGE* (MAX)	800	VOLTS
PLATEAU LENGTH* (MIN)	150	VOLTS
PLATEAU SLOPE*	5	%/100 VOLTS
(V ₀ = 800 TO 1000 V)		
RECOVERY TIME	100	μSEC
BACKGROUND	80	C/M
(V ₀ = 900 V)		
LIFE	10 ⁸	COUNTS
(AT 6000 C/M, V ₀ = 900 V)		
LIFE TEST END POINT, SLOPE	10	%/100 VOLTS
(V ₀ = 850 TO 925 V)		
ACTIVE LENGTH	2.75	INCHES
WALL (ALUMINUM)	30	MG/CM ²
SCREEN (COPPER)	100	MESH
PLATING (BISMUTH)	100	MG/CM ²
ELECTRODE CAPACITANCE	2	μμF

RATINGS

OPERATING VOLTAGE (MIN)	850	VOLTS	
	(MAX)	950	VOLTS
AMBIENT TEMPERATURE (MIN)	-10	°C	
	(MAX)	100	°C
RELATIVE HUMIDITY (MAX)	100	%	
BETA RADIATION ENERGY (MIN)	160	KeV	

*NEW TUBES



THE VICTOREEN INSTRUMENT CO.

COMPONENTS DIVISION

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