2063

Photomultiplier Tube

10-STAGE, HEAD-ON FLAT-FACEPLACE TYPE HAVING VENETIAN-BLIND-TYPE DYNODE STRUCTURE, 1.68-INCH MINIMUM-DIAMETER, FLAT, CIRCULAR, SEMITRANSPARENT PHOTOCATHODE AND S-11 RESPONSE

For Use in Scintillation Counting Applications

The **2063** *is electrically similar to type* **8053** *except for the following performance characteristics and that the anode luminous sensitivity and equivalent noise input ratings shown for the* **8053** *do not apply for type* **2063.**

The 2063 is supplied with a medium-shell diheptal base attached to flexible leads to facilitate testing. After testing, the attached base of the 2063 should be removed prior to installing the tube in a given system.

PERFORMANCE CHARACTERISTICS

Under conditions with dc supply voltage (E) across a voltage divider providing 1/6 of E between cathode and dynode No. 1; 1/12 of E for each succeeding dynode stage; and 1/12 of E between dynode No. 10 and anode. The focusing electrode is adjusted to that value between 50% and 100% of dynode No. 1 potential (referred to cathode) which will provide maximum anode current.

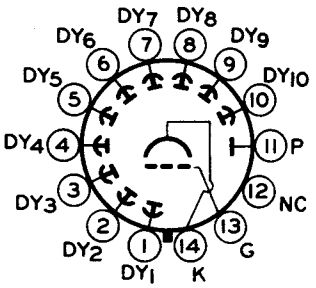
Maximum Anode Dark Current[a]	**0.05 μA**
Minimum Pulse Height[b]	**0.13 V**

[a] Measured under the following conditions: Light incident on the photocathode is transmitted through a blue filter Corning C.S. No. 5-58, polished to 1/2 stock thickness—Manufactured by the Corning Glass Works, Corning, New York) from a tungsten-filament lamp operated at a color temperature of 2870° K. The light flux incident on the filter is 10 microlumens. The supply voltage is adjusted to obtain an anode current of 9 μA. Dark current is measured with the light source removed.

[b] Pulse height is defined as the amplitude of the anode pulse voltage (referred to anode) measured across a 100 ± 5%-kilohm resistor and a total capacitance of 92 ± 3% pF in parallel. An anode-to-cathode voltage of 1130 volts is applied across a voltage divider network having a 1.5 ± 5%—megohm resistor between cathode and dynode No. 1, 450 ± 5%—kilohm resistors between each succeeding stage including dynode No. 10 to anode. The focusing electrode is adjusted to that value between 50% and 100% of dynode No. 1 potential (referred to cathode) which will provide maximum anode current. The 662-KeV photon from an isotope of cesium having an atomic mass of 137 (Cs^{137}) and a cylindrical 2 inch x 2 inch thallium-activated sodium-iodide scintillator [NaI(Tl)] type 8D8, or equivalent are used. This scintillator is manufactured by the Harshaw Chemical Corporation, 1945 East 97th Street, Cleveland 6, Ohio. The Cs^{137} is in direct contact with the metal end of the scintillator. The faceplate end of the crystal is coupled to the 2063 by a coupling fluid such as Dow Corning Corp., Type DC200 (Viscosity of 100 centipoise) manufactured by the Dow Corning Corp., Midland, Michigan, or equivalent.

BASING DIAGRAM (Bottom View) With Base Attached

Pin 1 – Dynode No. 1
Pin 2 – Dynode No. 2
Pin 3 – Dynode No. 3
Pin 4 – Dynode No. 4
Pin 5 – Dynode No. 5
Pin 6 – Dynode No. 6
Pin 7 – Dynode No. 7

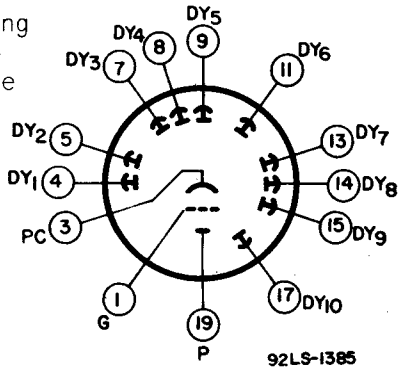


DIRECTION OF RADIATION: INTO END OF BULB

Pin 8 – Dynode No. 8
Pin 9 – Dynode No. 9
Pin 10 – Dynode No. 10
Pin 11 – Anode
Pin 12 – No Connection
Pin 13 – Focusing Electrode
Pin 14 – Photo-cathode

TERMINAL CONNECTIONS (Bottom View) With Base Removed

Lead 1 – Focusing
Lead 3 – Photo-cathode
Lead 4 – Dynode No. 1
Lead 5 – Dynode No. 2
Lead 7 – Dynode No. 3
Lead 8 – Dynode No. 4
Lead 9 – Dynode No. 5



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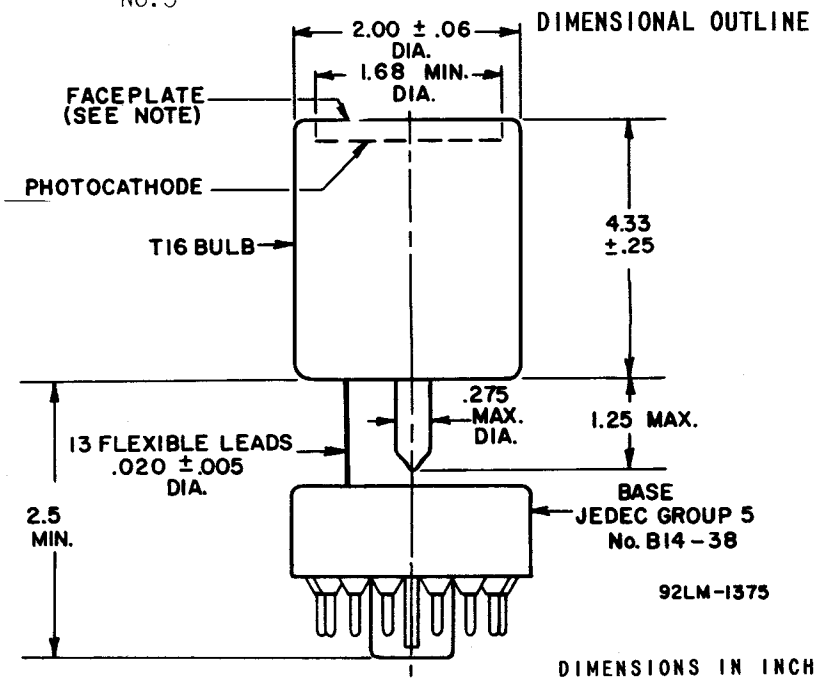
Lead 11 – Dynode No. 6
Lead 13 – Dynode No. 7
Lead 14 – Dynode No. 8
Lead 15 – Dynode No. 9
Lead 17 – Dynode No. 10
Lead 19 – Anode

DIMENSIONAL OUTLINE



DIMENSIONS IN INCHES

Note: Within 1.68-inch diameter, deviation from flatness of external surface of faceplate will not exceed 0.010 inch from peak to valley.