

WIDEBAND RADIATION METER

THIS RADIATION METER IS VERY SIMPLE TO CONSTRUCT USING CHEAP COMPONENTS WHICH CAN BE OBTAINED FROM MOST ELECTRONIC PARTS COMPANYS.

THE MAJOR COMPONENTS OF THIS METER ARE THE LARGE AREA PHOTODIODE AND A QUAD OP AMP.

YOU MUST WRAP A SINGLE LAYER OF MYLAR FOIL AROUND THE GLASS WINDOW OF THE DIODE TO SHIELD IT FROM LIGHT AND INFRARED ENERGY, ENABLING IT TO RESPOND TO SUCH NUCLEAR RADIATION AS ALPHA, BETA, X-RAY AND GAMMA RAYS.

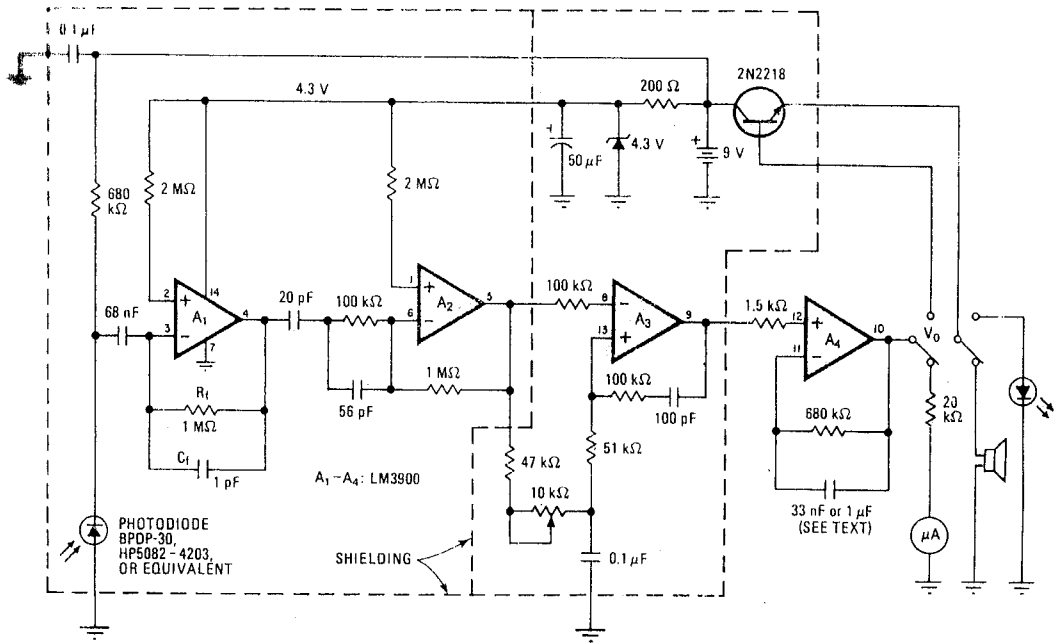
A4 INTEGRATES THE OUTPUT OF A3 IN ORDER TO DRIVE A MICROAMMETER. A1 MICROFARAD CAPACITOR IS USED IN THE INTEGRATING NETWORK. A LOWER VALUE, SAY, 33 NANOFARADS, WILL MAKE IT POSSIBLE TO DRIVE A SMALL LOUDSPEAKER (50 HERTZ OUTPUT SIGNAL)OR LIGHT EMITTING DIODE.

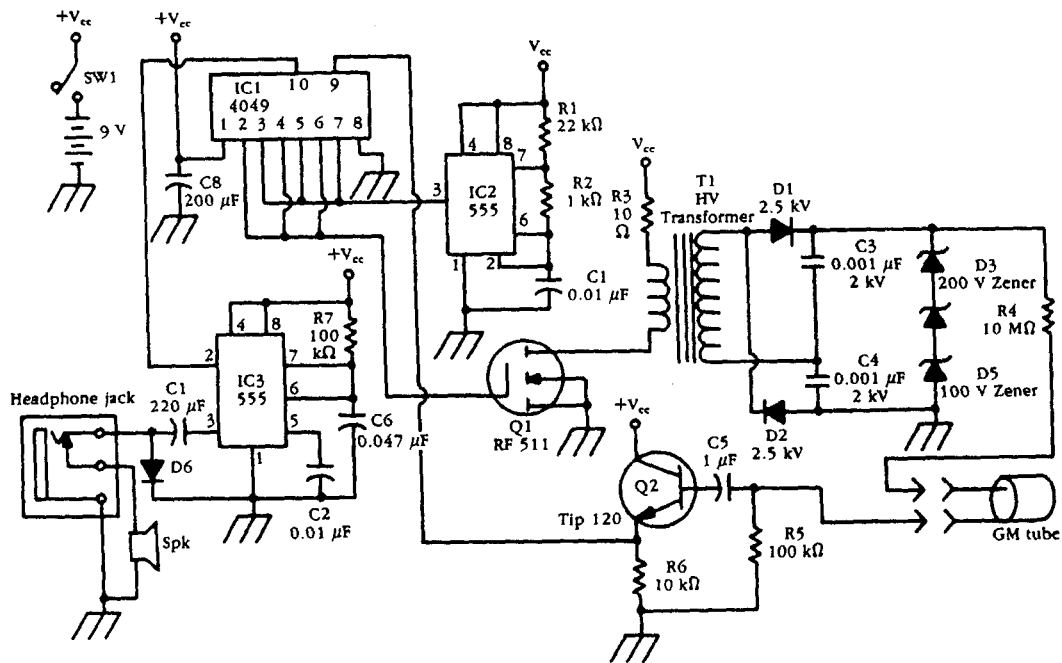
THE CIRCUITRY MUST BE STEEL CASE SHIELDED FROM OUTSIDE DISTURBANCES.

NOTE THAT THIS CIRCUIT USES A 9V BATTERY, IT IS LOCATED NEXT TO THE 2N2218 ON THE SCHEMATIC DIAGRAM.

THIS DEVICE WORKS BETTER WITH THE MICROAMMETER, FOR A LINEAR RESPONSE SCALE. USE A KNOWN SAMLE OF ALPHA EMITTING RADIATION TO CALIBRATE IT AND MARK THE SCALE.

HERE IS THE COMPLETE SCHEMATIC DIAGRAM:
PARTS ARE LISTED ON THE SCHEMATIC.





An HV generator (IC1, IC2, Q1, T1, and associated components) power a G-M tube. A pulse from the GM tube is interfaced through Q2 and IC1 to pulse generator IC3, which drives a speaker.