

Filter Protection

Requirement:

Provide a TVS device to protect a filter against damage due to RTCA Waveforms Voltage Waveform 4 and Current Waveform 1 Pulse 1600v/320A at 6.4/69 usec

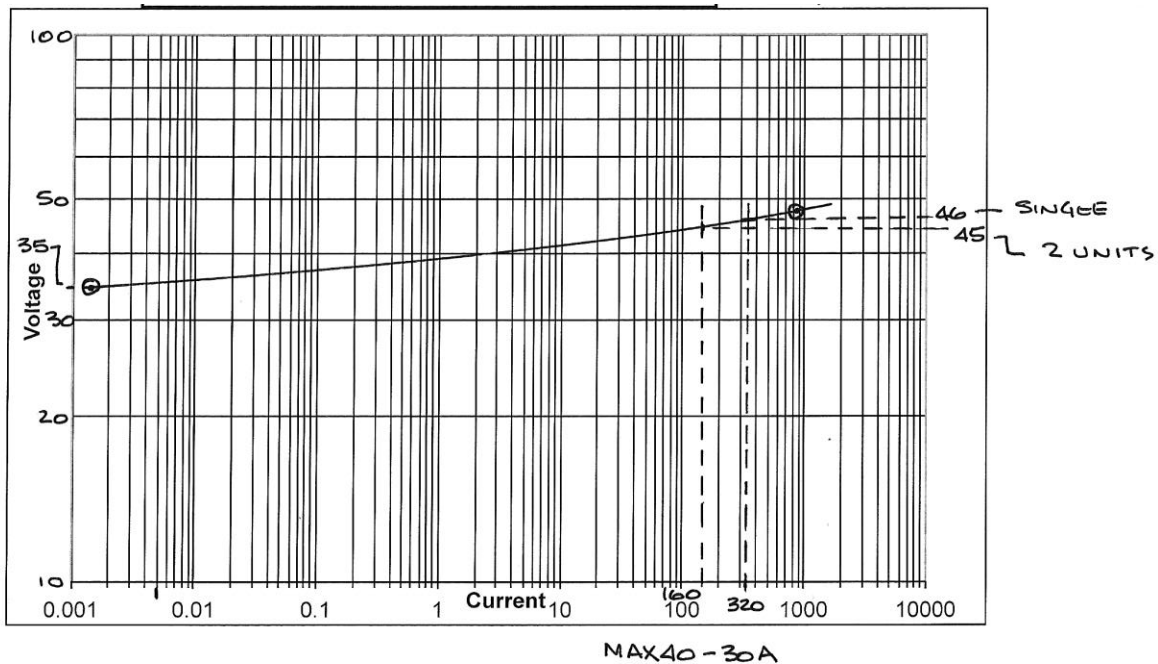
The input limits are:

Nominal range 28 to 33 volts, and the max range is 33 to 45 volts, although the max clamp voltage at Ipp is 53 volts.

A range of devices were reviewed, and it was found that the MAX 40 series will work best.

The device chosen is MAX40-30A.

Rated breakdown 35.1 v at 5 ma and 826 a at 48.4 v with 10/1000 usec wave



The data from the MAX40-30A is plotted, and the device is almost a fit for this application. The breakdown is 35v @ 5 ma and the max at 826a is 48v. Since this almost fits the requirement, an additional device could be added in parallel, which should just meet and provide the protection needed.

So (2) MAX40-30A TVS diodes in parallel should provide the protection required.