Subject: Re: Damper diodes
Posted by metasonix on Thu, 12 Aug 2004 03:42:13 GMT
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The question is, WHICH damper diode do you want to use?As long as the PIV rating of the diode is more than 2.828 x the AC supply you're using, you are ok. I'd suggest derating the PIV by a added factor of 1.5 for a safety margin. I know the RCA tube manuals only say 2.8, trust me, the tubes will thank you. It's a matter of being able to handle surges and line noise.Damper rectifiers were NOT intended for power rectification, they were meant to suppress high-voltage reverse spikes on a flyback transformer. Those spikes were usually very short duty cycle. Using dampers as AC rectifiers means: further derating is a good idea.Also suggest if you're trying to make more than 300v dc, use a separate heater winding for the diodes--don't try to share it with other tubes, REGARDLESS of the damper's heater-cathode voltage rating. If it's a simple full-wave rectifier with a CT plate winding, a single heater winding will do. If it's a full-wave bridge, you need 3 windings.For example, the common NOS diode 6CJ3 has a PIV of 5500 volts. So a pair is suitable for making up to 5500/2.828/1.5 = 1296 vdc. A pair of 6CJ3s are "rated" to produce 700 mA rated max, though I'd still derate that by 1.5, thus 466 mA.This compares with the experiences of people I know who have used dampers as rectifiers. Most of the old color-TV types will produce ~1100-1200 vdc at ~300-400 mA--much above that and you start to see reliability problems. This also applies to Svetlana 6D22S dampers. For more voltage, mercury vapor types are almost mandatory.