Gating an Ag8012 Output with a Back-up External Power Supply

This application note shows how an external power supply can be used as a back-up, in case the output power from the Ag8012 is lost.

When the Ag8012 is operating normally the power to the device is sourced from the +VDC output via D2.

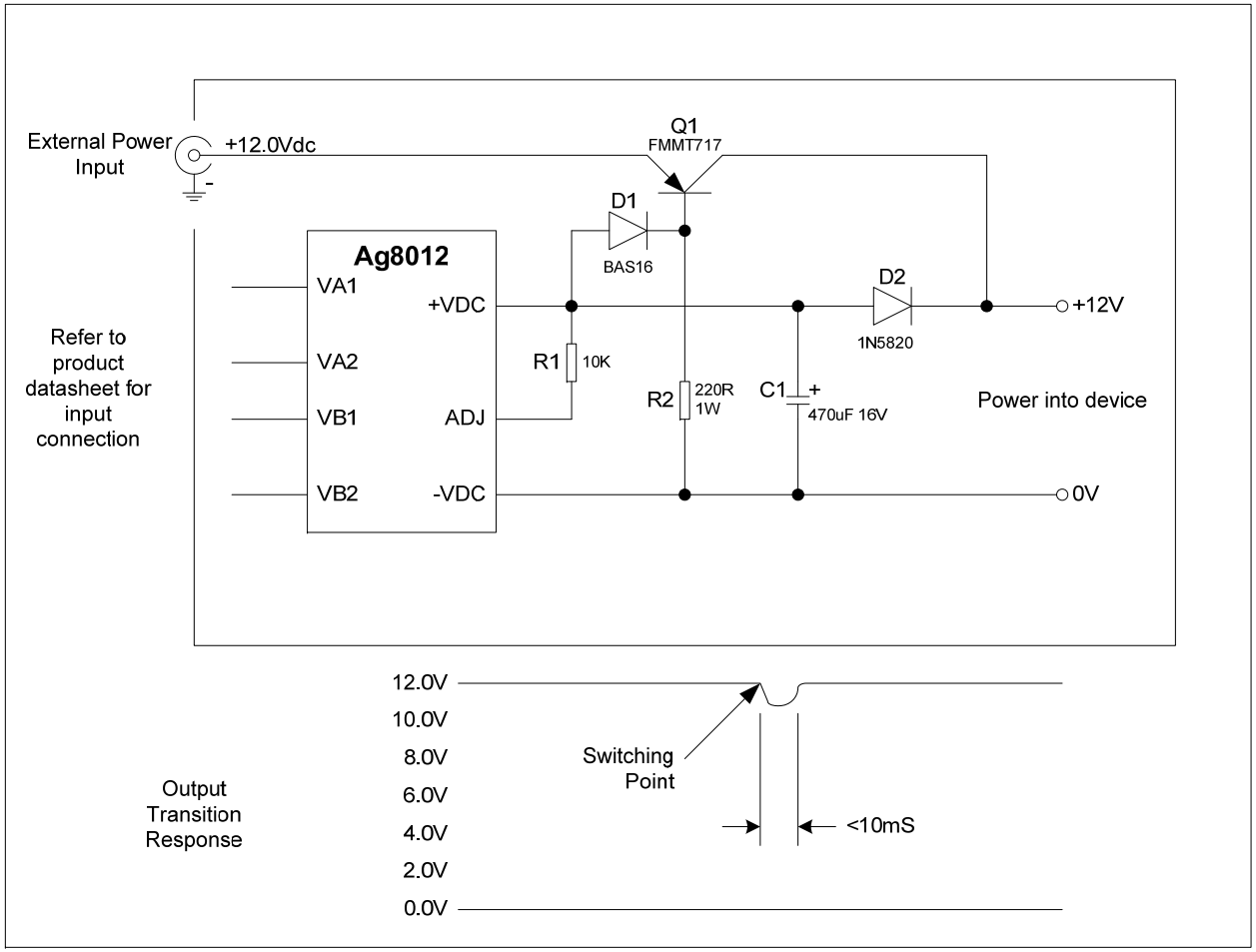
R1 is used to increase the Ag8012 output (to ~12.5V) to allow for the forward voltage drop of D2. It also ensures that the voltage through D1 raises the base voltage of Q1 sufficiently so that Q1 will be switched off.

If the Power Sourcing Equipment (PSE) fails, the Ag8012 will shut down. When the +VDC output voltage drop to ~12V, Q1 will switch on and the power to the device will be supplied via Q1. This will result in a dip in the supply voltage to the device, as shown.

When the PSE power is restored +VDC will return (to +12.5V), switching Q1 off and supplying the power to the device via D2.

Q1 is a SOT23 package and must be connected to sufficient tracking surface area to provide a heatsink for the device.

C1 is used to remove the effect of an output load step change on the Ag8012.



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