Application Note Number 19.

Product: **Astec's MVP 600W power supply.**
Application Overview: **Hold up time.**

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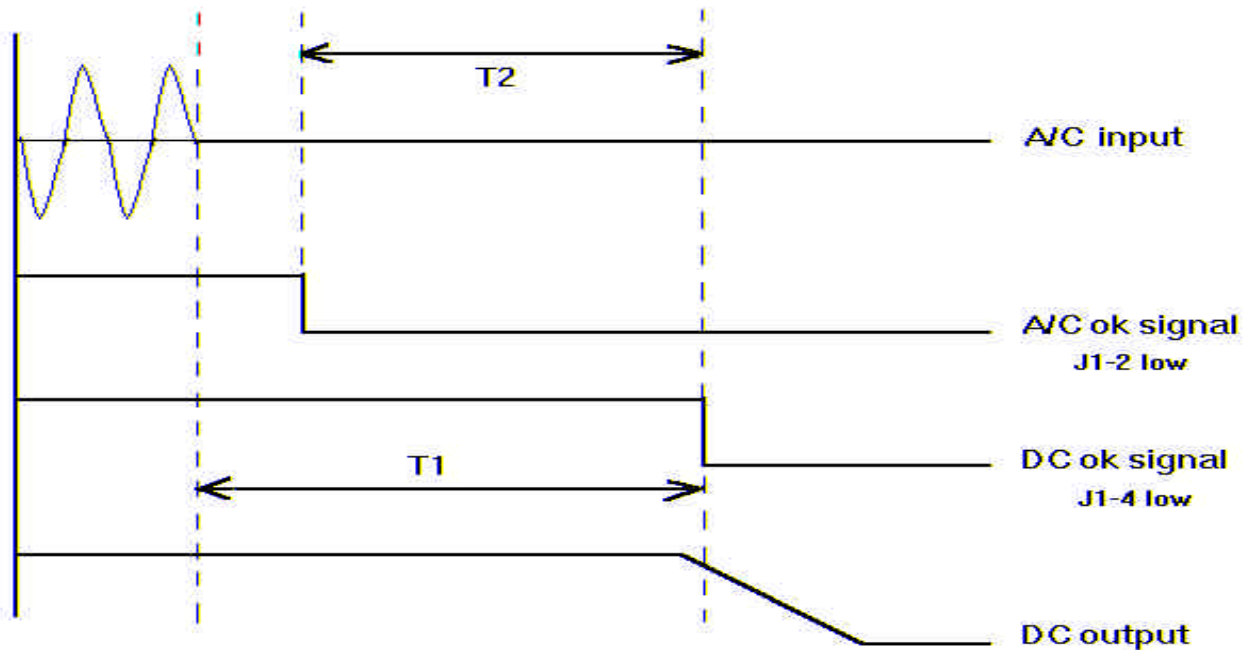
Schematic

FIGURE 1

Description

The Astec MP6 range of power supplies features various logic signals as standard, allowing the status of the power supply to be constantly monitored by the end system. The MP6 is provided with both AC and DC OK signals, which can be used to provide a controlled shut down of the system in the event of a power failure. After loss of input power, the DC output voltage will remain in specification for a short duration. This is known as the 'Hold up' time and is dependant on the internal capacitance of the PSU and the output power. At higher output power, energy is drawn from the internal capacitance at a faster rate than at lower output power resulting in the output voltage dropping below regulation limits much sooner. However, the hold up time is not dependant on the AC input voltage or the secondary output configuration of modules.

Figure 1 shows the general timing arrangement during power failure. T1 represents the hold up time, measured from the removal of the AC voltage to the DC OK signal changing state. At 600 Watts of output power the minimum specification for T1 is 20mS. T2 is the time taken from the AC OK signal indicating power failure to the DC OK signal changing state. At 600 Watts of output power the minimum specification for T2 is 5mS. However, as previously discussed, the hold up time is strongly affected by the output power being drawn from the PSU. Different load conditions will yield different hold up characteristics.
However Figure 2 shows the typical values which can be obtained for T1 and T2 under various load conditions.
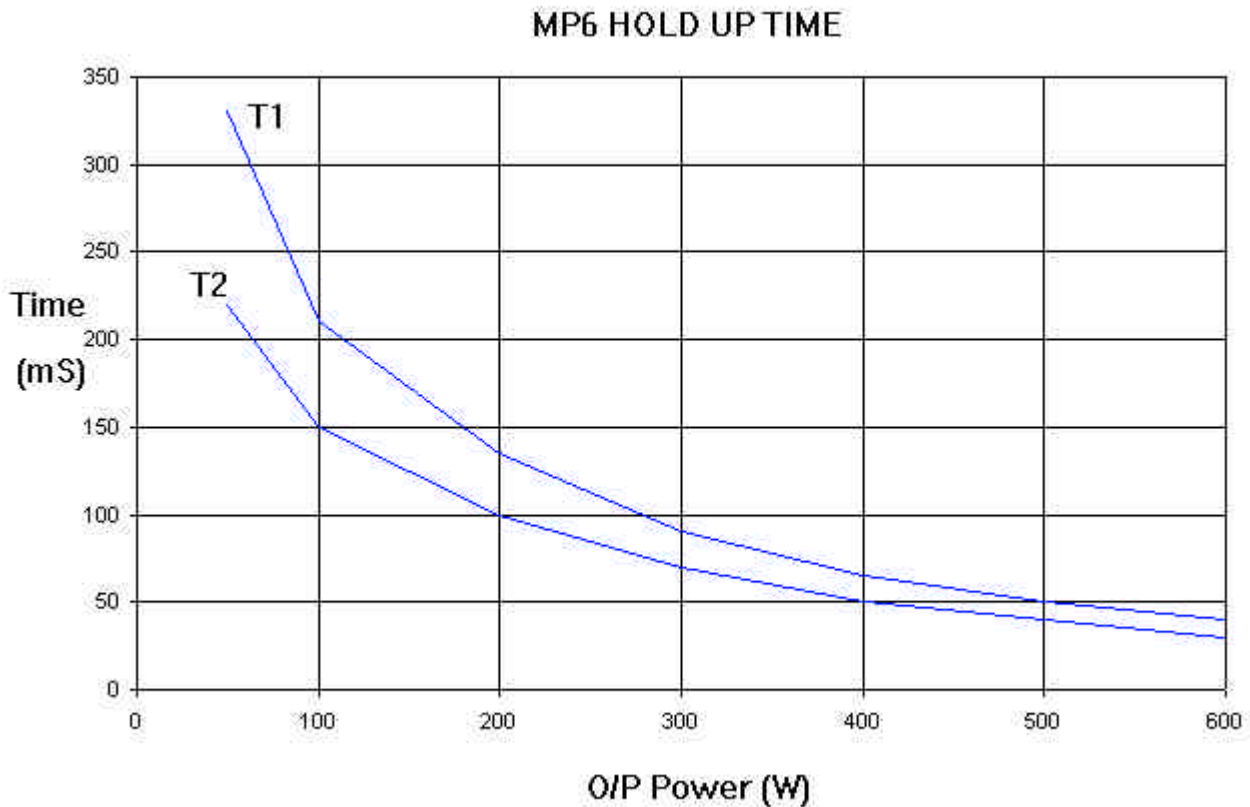

FIGURE 2