

OBSOLETE PRODUCT
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EN61000-4-* Transient Immunity Protection for the PF600-1

In this application note, you will find information on transient immunity protection for the PF600-1. Additional information on the PF600-1, including features and complete specifications can be found on our website at <http://www.murata-ps.com>.

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INTRODUCTION

Four areas require consideration to meet transient immunity requirements:

- The mains input
- The other primary connections
- The output
- The low-power secondary connections

MAINS INPUT

A correctly designed input filter will avoid problems here. To suppress high-frequency common-mode currents, short, wide paths to chassis through Y-capacitors will be needed from both input pins. Part of this filtering is built into the module; more will be needed externally to meet typical EMC requirements.

RESERVOIR CAPACITOR AND OTHER PRIMARY-SIDE CONNECTIONS

The reservoir (bulk) capacitor is large, but is intimately connected to the primary circuit, and thus is potentially vulnerable to input transients. The best defense here is to avoid exposure to external interference.

The bulk capacitor must be mounted close to the module, and must be isolated from chassis. In most applications, there will be no need for connections to either side of the capacitor. However, some application circuits do require such connections. Since they will be at a hazardous voltage, they must be suitably isolated and protected. Where a signal must cross the isolation boundary, a device such as an optoisolator must be used. The associated wiring must be kept compact and insulated.

If necessary to meet specification in a particular installation, Y-capacitors up to 4.7nF may be connected between each side of the reservoir capacitor and chassis.

OUTPUT

A large common-mode current emerges from the output pins, which must be returned to chassis in order to meet EMC and output noise requirements. These Y-capacitors will also absorb any transient disturbance applied to the output. Also, since the output circuit consists only of a rectifier, it is not likely to be affected by applied transients.

OTHER SECONDARY CONNECTIONS

SHUTDOWN AND TEMPERATURE SENSE

These low-speed pins may be left open if unused, or may be returned to secondary potential.

OUTPUT MONITOR (DC OK)

This circuit relies on a small component designed as a cpu reset generator. Its susceptibility to interference is not known.

AUXILIARY OUTPUT

Though not vulnerable in itself, being simply a rectified secondary winding on a transformer, this has the highest capacitance to the primary-side control circuit, and is the most likely to be routed some distance from the module. It therefore needs greatest care in its immunity protection. Screen wiring from this output, and avoid areas of high electrical noise.