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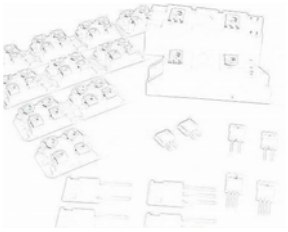

New 150V Schottky Family

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As a result of computer, telecom and consumer applications, the Switch Mode Power Supply (SMPS) is becoming more widespread nowadays. The constant increase in services and performance, which offers these applications, tends to move conversion systems towards higher output power. In addition to these developments dictated by the market, SMPS manufacturers are in competition, their battlefield being the criteria of power density, efficiency, reliability and cost, with this last factor being very critical.

Today, SMPS designers of 12-24V output have practically the choice between a 100V Schottky or a 200V bipolar diode. The availability of an intermediate voltage has therefore become necessary to gain in design optimization.

This is why a new family of 150V POWER SCHOTTKY diodes, intended for 12V and more secondary rectification, in applications such as desktops, file servers or adaptors for notebook PCs.

When we have the choice between 150V Schottky and 200V PN Diode, the 150V Schottky is the best choice for the safety of the component and the environment, the limitation of parasitic effects and for the efficiency of the converter. In addition to the low Vf, the 150V Schottky has a better4 switching behavior, due to its essentially capacitive recovery (less sensibility to the temperature). We have the advantage of a soft recovery diode in terms of EMC and the Schottky is preferable to a fast recovery diode in terms of losses. The 150V Schottky diode is the better choice versus the 200V bipolar as for EMC and losses at turn-off are concerned. Experimental measurements confirm this.

With the arrival of the EN6100-3-2 standard and the introduction of the PFC, whatever the input voltage is, there will be a continuous voltage on the primary. This will lead to a reduction of the transformation ratio, and at the same time, the reverse voltage of the diode. Consequently, a lower breakdown voltage diode will be needed in the future to replace a 200V PN diode used today. Also, the tendency is for the output power of adaptors to increase. This involves an increase in the output voltages. The voltage requirements of the diode in this case will be higher than 100V and a 150V diode is likely to be the appropriate component.

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