



## New Alloy Barrier 100V Schottkys for CEC Level V

Monday, 3 August 2009

Sirectifier Global Corp. (SGC) announced that the new alloy process of 100V Schottkys Barrier Diode instead of the normal platinum (Pt) barrier one. The most important characteristic of our new Alloy Barrier Schottkys is the lower Forward Voltage Drop (VF) compared with Pt barrier one. Therefore, the new Alloy Barrier Schottkys indeed providing the best solution for the high-efficiency application on the Switching-mode Power Supply (SMPS).

Briefly, the formula of our new alloy process is platinum (Pt) and nickel (Ni). In fact, the nickel can reduce the average Barrier Height ( $\phi_B$ ) of metal on silicon substrate.

$$\text{Barrier Height } (\phi_B) = (-KT/q) \ln (J_0/R^*T^2)$$

Where:  $\phi_B$  = Barrier Height

$K$  = Boltzmann's Constant

$$6.82 \times 10^{-5} \text{ eV}^\circ\text{C}$$

$q$  = Electron Charge

$$= 1 \text{ when using B.C.}$$

$T$  = Ambient Temp in OK

$J_0$  = Current Density at 0 Volts

$$I_0/\text{Active Area } (\text{cm}^2)$$

$R^*$  = Richardson's Constant

$$112 \text{ A/cm}^2 \text{ } ^\circ\text{K}^2$$

Therefore, we have obtained the best result of the VF Value around 0.68V to 0.72V (average 0.70V @ 25°C). We are now pleasure recommend for the extensively application of CEC (California Energy Commission) Level V, 85% high-efficiency power supply.

The most popular item of our new Alloy Schottkys are MBR20U100CTH (20A/100V, VF<0.54V @125°C) and MBR10L100CT (10A/100V, VF<0.56V @125°C) which making use of the adapter form 12V to 24V DC output, especially in the fields of Notebook, Netbook, digital camera and digital photo frame, etc.

For further details, please contact SGC at the location nearest you.

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