

Hitachi Releases HSU285 Wave-Detection Schottky Barrier Diode for 5.8 GHz Band Use

— For received wave detection in 5 GHz band wireless LANs, etc.,
offering high detection output of 1 mV or above even in a low -40 dBm input region —

Tokyo, November 25, 2002— Hitachi, Ltd. (TSE: 6501) today announced the HSU285 5.8 GHz band wave-detection Schottky barrier diode for use in 5 GHz band wireless LANs and similar home networks, and ETC (Electronic Toll Collection System) and similar terminals. Sample shipments will begin in December 2002 in Japan.

The use of a new process enables the HSU285 to achieve simultaneously the industry's highest low forward voltage level of $V_F = 0.27$ V max (at 1 mA) plus a low capacitance of $C = 0.30$ pF typ (at 0.5 V). This makes it possible to attain a wave-detection output of 1 mV or above with zero bias even in the low input region of -40 dBm, making the HSU285 ideal for use in 5.8 GHz band detection circuits (detectors).

< Background >

Wave-detection Schottky barrier diodes are used in detection circuits in mobile phones, RFID tags, and high-frequency communication terminals connected to a 5 GHz band wireless LAN or similar network, and are key devices in determining circuit output characteristics. Hitachi currently produces a number of devices, such as the HSD88 and HSU276A, that are widely used in such products as mobile phones, supporting bands from 900 MHz to 2.45 GHz. However, the 5.8 GHz band requires both low capacitance (inter-pin capacitance (C)) to handle the higher frequency and a lower forward voltage (V_F) to respond to weak signals, and it has been difficult to improve these two conflicting characteristics with traditional processes.

Hitachi is therefore releasing the HSU285 5.8 GHz band wave-detection Schottky barrier diode that offers both a low forward voltage and low capacitance through the development of a new process.

< About this product >

The HSU285 achieves the industry's highest low forward voltage level of $V_F = 0.27$ V max (at 1 mA) plus a low capacitance of $C = 0.30$ pF typ (at 0.5 V). The use of a new process and a newly developed chip structure have made it possible to reduce forward voltage by approximately 25% and inter-pin capacitance by approximately 60% compared with Hitachi's current HSU276A, and to achieve an approximately fourfold wave detection output of 1 mV or above even in the low input region of -40 dBm. In addition, the zero bias design offers lower detection circuit power consumption.

The package used for the HSU285 is the same URP (Hitachi package code) as used for Hitachi's current HSU276A.

Hitachi will continue to develop Schottky barrier diodes in smaller packages that will enable end-products to be made smaller and slimmer, and also plans the development of a wave-detection Schottky barrier diode for use in bias detectors for the same frequency band.

< Typical Applications >

- 5 GHz band wireless LAN terminals, ETC (Electronic Toll Collection System) equipment, etc.

< Prices in Japan >(For Reference)

Product Code	Package	Unit Price for 10,000-Unit Lot (Yen)
HSU285	URP	75

< Specifications >

Product Code	Package	Maximum Rated Forward Current I_o (mA)	Forward Voltage (V)	Inter-Pin Capacitance C (pF)
HSU285	URP	5	VF1 = 0.15 max@IF = 0.1 mA VF2 = 0.27 max@IF = 1 mA	0.30 typ

Information contained in this news release is current as of the date of the press announcement, but may be subject to change without prior notice.
