

## SMK Develops RF Board to Board Connector for 5G Featuring Industry's Smallest-Class Mounting Area



SMK Corporation has developed a board-to-board connector with high-frequency performance "RB-1 Series" for antenna connections.

In recent years, the number of antennas in communication devices such as smartphones has increased with the full-scale implementation of the fifth-generation (5G) mobile communication networks. The connection with conventional coaxial cable type requires multiple connectors, which makes wiring inside devices complicated. SMK's new "RB-1 Series", however, enables the connection with just a single connector, making it possible to increase the capacity and speed of data transmission, at the same time, simplify device design and improve productivity.

This product offers excellent high-frequency characteristics of up to 12GHz while being the smallest class in the industry with a pitch of 0.35 mm, stack height of 0.6 mm, and depth of 2.1 mm (common to 10, 12, and 14-pin types).

The self-alignment feature of up to  $\pm 0.25$ mm and the structure where the metal shells make contact with each other ensure workability and robustness when mating. It also offers high a retaining force as well as excellent shock and vibration resistance.

### **[Applications]**

Smartphones, tablet PCs, laptops, Routers, antenna modules, IoT devices, etc.

Published Date	August 25th, 2020				
Press Release Number	1130CS				
Product Name	Board to Board Connector with High-frequency Performance "RB-1 Series" Part Number: CPBE7XX-0101F (Socket), CPBE8XX-0101F (Plug)				
Features	<p>1) Low profile and compact design with a pitch of 0.35 mm, stack height of 0.6 mm, and depth of 2.1 mm. 10, 12, 14-pin types are available.</p> <p>2) Operating frequency range is from DC to 12GHz, providing a favorable high-frequency quality, despite its small size and multi-pole design.</p> <p>3) The self-alignment structure of metal shells on the plug and socket allows easy mating and high robustness.</p> <p>4) High-frequency measurements of multiple pins are available with a floating designed coaxial probe.</p>				
Major Specifications	Rating	20V AC/DC, 0.5A			
	Contact Resistance	30mΩ maximum			
	Insulation Resistance	100V DC, 100MΩ minimum			
	Withstanding Voltage	100V AC (for one minute, no arc damage)			
	Operating Temperature Range	-55°C to +85°C			
	Frequency Range	DC to 12GHz			
	Nominal Impedance	50Ω			
	VSWR	0-3GHz	3-6GHz	6-9GHz	9-12GHz
		1.3 max.	1.4 max.	1.5 max.	1.6 max.
	Mounting Method	Surface mounting			
Packaging	Reel				



Major Specifications	Mounting Area	10Pin: 7.98 mm <sup>2</sup>
	External Dimensions of Socket	10Pin: 2.1 mm × 3.8 mm
	Operating Life	10 cycles
Start Taking Orders From	Started	
Goes Into Mass Production From	Started	
Production Capacity	2,000,000 units per month	
Sample Price	100 yen per unit (Socket), 100 yen per unit (Plug)	
Inquiry	<a href="#">For more information, please contact CS Division</a>	