

# Ultra Low-Dielectric Loss SSBS and CCL for Beyond 5G

## Ultra Low-Dielectric Loss SSBS Characteristic

We have developed Low-dielectric compositions based on JSR's low-dielectric resin. It showed high potential in all Dk, Df, Tg and Water absorption. With the above developments, we are now able to offer superior low-dielectric-loss materials.

### SSBS Composition

#### 【 For M-SAP 】



- Copper:  $t = 1.5 \mu\text{m}$
- Low Dielectric Adhesive:  $t = 25 \mu\text{m}$

#### 【 For Subtractive 】



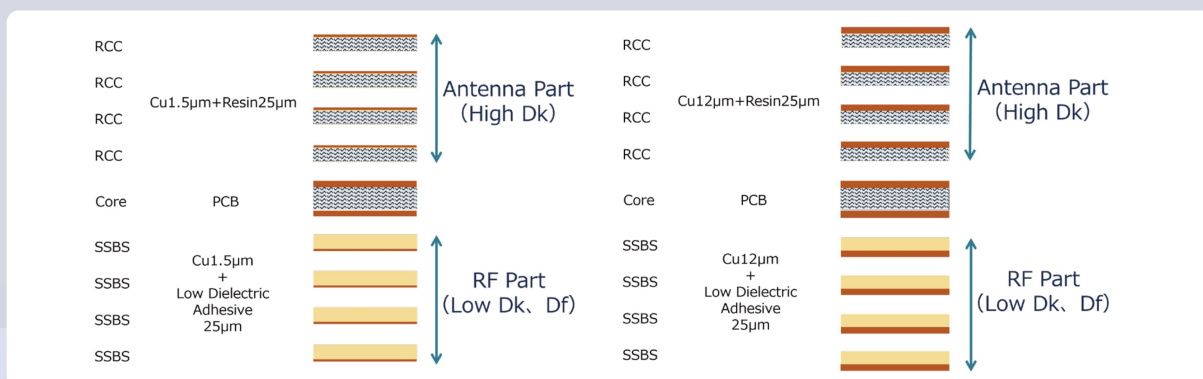
- Copper:  $t = 12 \mu\text{m}$
- Low Dielectric Adhesive:  $t = 25 \mu\text{m}$

### Typical Values

Item	Unit	SSBS
Dk / Df	10GHz	2.55 / 0.0019
Tg (DMA)	°C	170.5
Peel strength	N/mm	0.72
Solder heat resistance (T288)	sec.	>300
Folding endurance A (D=3.0mm)	times	>100
Water absorption	%	0.2
UL 94		V-0( Equiv.)

※ The values mentioned above are example of laboratory experiences and are not value of standard.

## Main SSBS Layer Structure for AiP

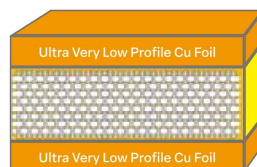


## Ultra Low-Dielectric Loss & Low CTE CCL Characteristic

### CCL Composition

#### 【 Major Characteristic 】

##### •Si-filler less



- Copper:  $t = 18 \mu\text{m}$
- Specialty Cloth:  $t = 27 \mu\text{m}$

### Typical Values

Item	Unit	CCL
Dk / Df	10GHz	2.45 / 0.0017
Tg (DMA)	°C	170.5
Peel strength	N/mm	0.68
CTE (X / Y)	ppm/°C	10.0
Solder heat resistance (T288)	sec.	>300
Water absorption	%	0.2
UL 94		V-0( Equiv.)

※ The values mentioned above are example of laboratory experiences and are not value of standard.



**CIRCUIT MATERIALS INC.**

