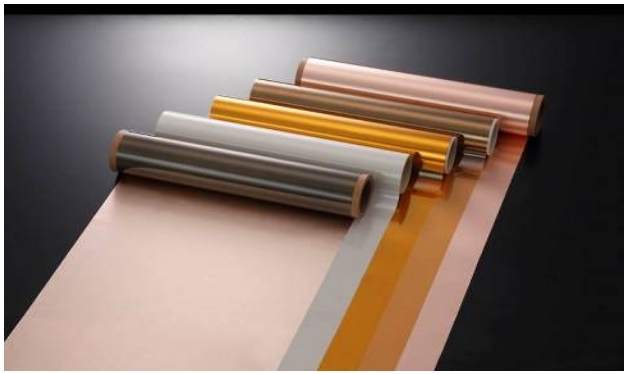
Panasonic “Felios (R-F777)” performance

FELIOS



Oct. 2017

Panasonic Corporation
Electronic Materials Business Division
Circuit Board Materials Division
Product Development Group

1. Properties

Your Company Only

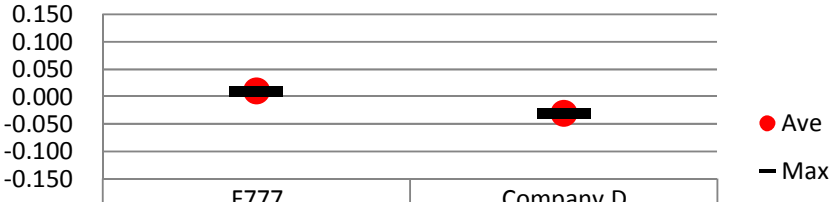
Laminate Property	IPC TM-650 (* or other)		R-F777 (RA 18-50-18)	Company D (RA 18-50-18)
Adhesion to Cu (Peel Strength) As fabricated, N/mm (lb/in)	Method 2.4.9	One side	1.83	0.79
		Another side	1.51	1.95
Adhesion to Cu (Peel Strength) After solder, N/mm (lb/in)	Method 2.4.9	One side	1.86	1.09
		Another side	1.45	2.17
Solder Float at 315° C (600° F)	Method 2.4.13		Pass, >120sec.	Pass, >120sec.
Solder Float at 260° C (500° F)	C-96/40/90		Pass, >120sec.	Pass, >120sec.
Dimensional Stability	Method 2.2.4		Another page	
Dielectric Thickness Tolerance, %	Method 4.6.2		±10	±10
UL Flammability Rating	*UL-94		V-0	V-0
Dielectric Constant, 1 MHz (A)	Method 2.5.5.3		3.2	3.3
Dielectric Constant, 1 MHz (D-24/23)			3.2	3.3
Dissipation Factor, 1 MHz (A)			0.002	0.002
Dissipation Factor, 1 MHz (D-24/23)			0.002	0.002
Dielectric Strength, kV/mil	Method 2.5.6.1		5	6-7
Volume Resistivity, ohm-cm	Method 2.5.17.1		2E+16	E17
Surface Resistance, ohms	Method 2.5.17.1		5E+16	>E16
Water Absorption, %	Method 2.6.2		1.8	0.9
Tensile Strength, MPa (kpsi)	Method 2.4.19		527	345
Elongation, %	Method 2.4.19		86	50
Propagation Tear Strength, g	Method 2.4.17.1		22.4	20.4
Glass Transition (Tg), C	—		>340	220
Modulus, kpsi	—		7.4	4.8

*The data above show actual values and are not guaranteed.

3. Dimensional stability

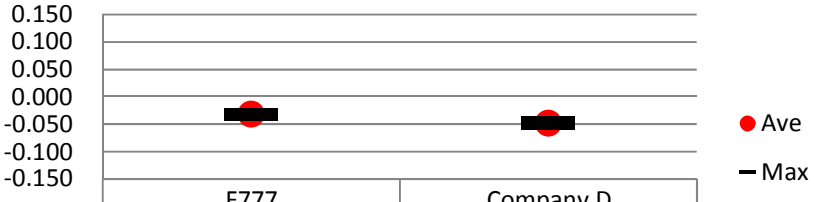
Your Company Only

After etching MD



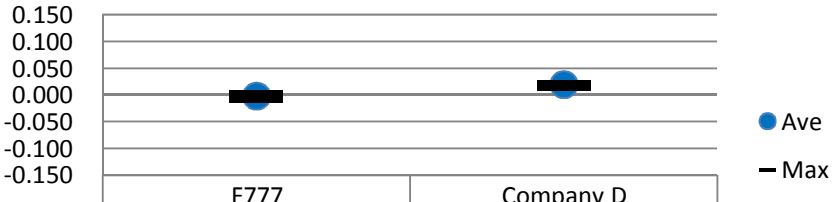
	F777	Company D
Ave	0.011	-0.029
Max	0.011	-0.029
Min	0.011	-0.029

After aging MD



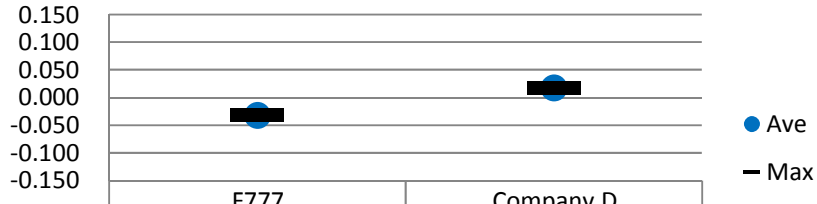
	F777	Company D
Ave	-0.032	-0.048
Max	-0.030	-0.046
Min	-0.035	-0.051

After etching TD



	F777	Company D
Ave	-0.002	0.020
Max	0.001	0.020
Min	-0.004	0.020

After aging TD



	F777	Company D
Ave	-0.032	0.017
Max	-0.029	0.019
Min	-0.035	0.015

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FELIOS Panasonic

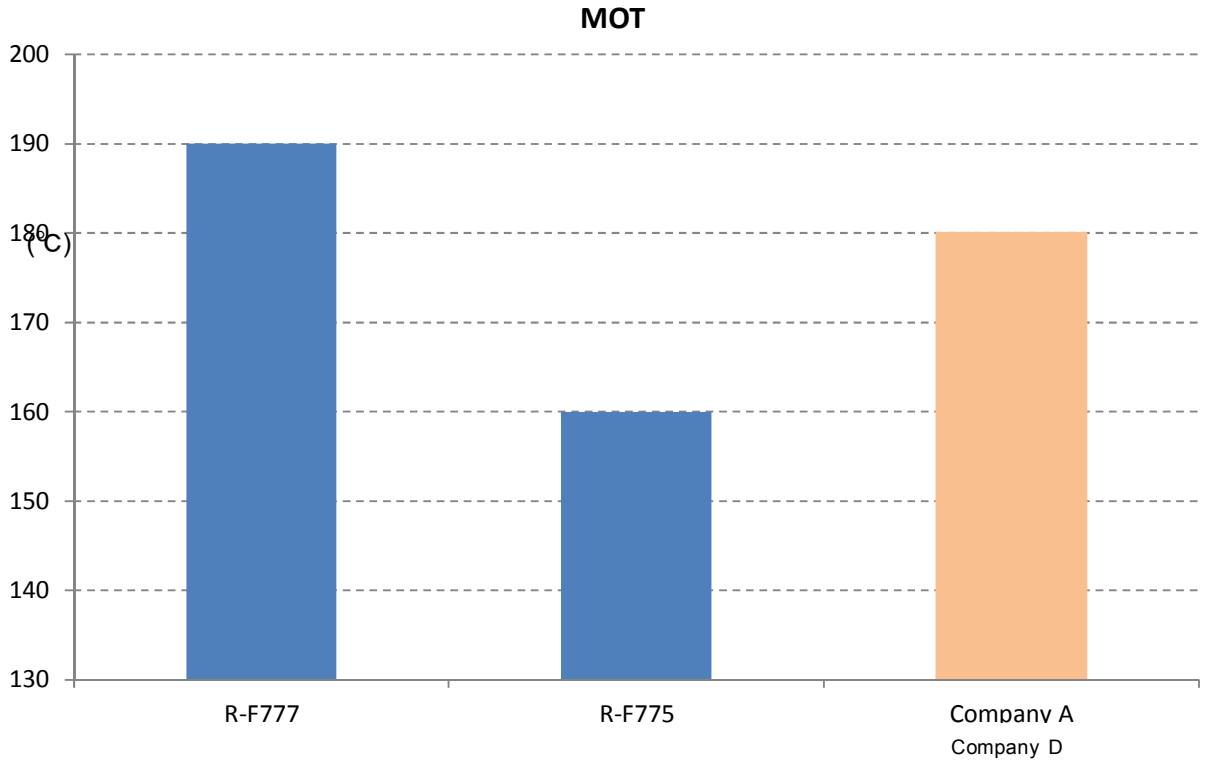
4. Other

Your Company Only

■ UL Qualified

・file No ： E81336

■ Maximum operating temperature



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FELIOS Panasonic

5. Lineup

Your Company Only

High heat resistance type : R-F777

	2um (with carrier)	6um 1/6 oz	9um 1/4 oz	12um 1/3 oz	18um 1/2 oz	35um 1 oz	70um 2 oz
12.5um (1/2mil)	–	ED / RA	ED / RA	ED / RA	ED / RA	ED / RA	ED / RA
20um (4/5mil)	–	ED / RA	ED / RA	ED / RA	ED / RA	ED / RA	ED / RA
25um (1mil)	–	ED / RA	ED / RA	ED / RA	ED / RA	ED / RA	ED / RA
50um (2mil)	–	ED / RA	ED / RA	ED / RA	ED / RA	ED / RA	ED / RA
75um (3mil)	–	ED / RA	ED / RA	ED / RA	ED / RA	ED / RA	ED / RA
100um (4mil)	–	ED / RA	ED / RA	ED / RA	ED / RA	ED / RA	ED / RA
125um (5mil)	–	ED*2 / RA*2	ED*2 / RA*2	ED*2 / RA*2	ED*2 / RA*2	ED*2 / RA*2	ED*2 / RA*2
150um (6mil)	–	ED*2 / RA*2	ED*2 / RA*2	ED*2 / RA*2	ED*2 / RA*2	ED*2 / RA*2	ED*2 / RA*2

R-F777
: Sheet type is under development

＊2 : Over 125μ is under development

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