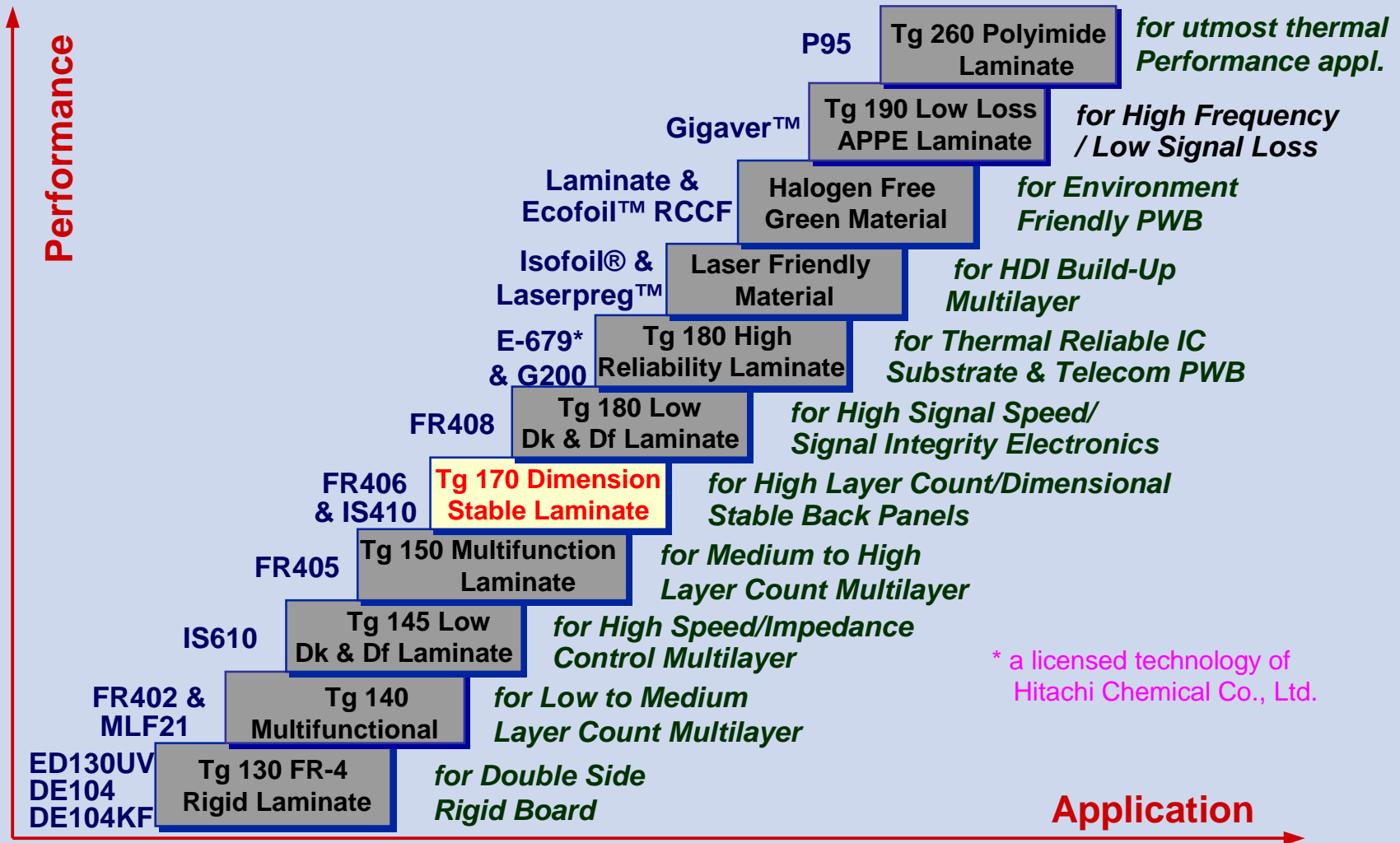




IS410
High Performance FR-4

The Solution for high reliability & high layer count multilayer Board

Product Offering



Features and Applications

- ***Features***

- Superior performance through multiple thermal excursions - passes 6 cycle
- Very reliable high layer count multilayer boards
- Suitable for lead-free soldering process
- Low Z-axis expansion & good dimensional stability
- Excellent solder heat resistance and low moisture absorption
- Standard FR-4 Epoxy Processing
- UV Blocking & AOI capable

- ***Applications***

- Advanced computers, Servers, workstations, Networking, Telecommunications & Automotives

Thermal Performance

- **Higher Tg**

Tg (°C)	IS410	High Tg FR-4
DSC	175 ± 5	170 ± 5
TMA	170 ± 5	165 ± 5
DMA	185 ± 5	180 ± 5

- **Z-axis CTE (ppm/°C)**

Room Temp to Tg	55~70	65~75
Tg to 288°C	150~250	180~280
Room Temp to 288°C	120~140	120~150

- **Solder dip @288°C (sec)**

>300	60~180
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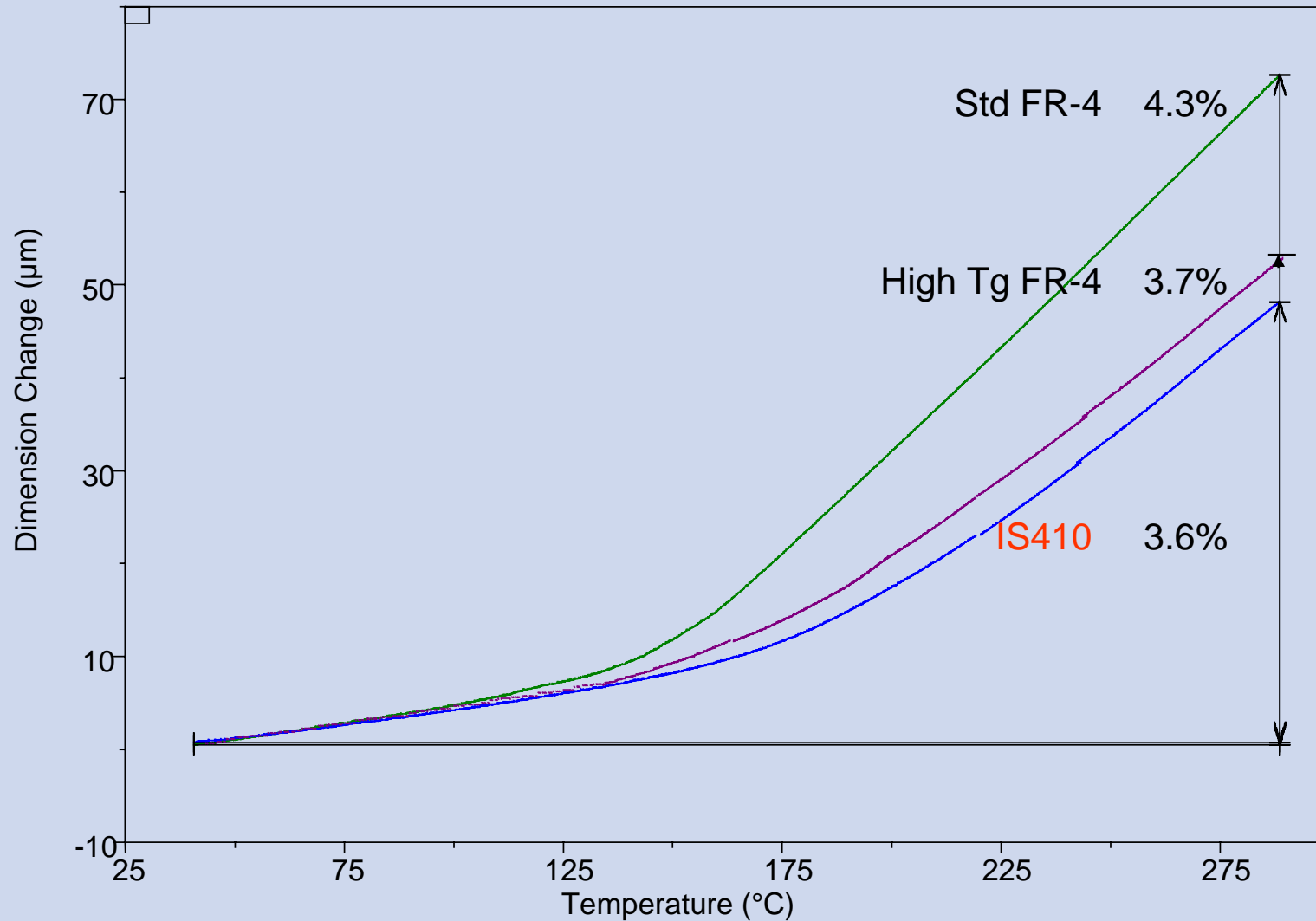
- **Decomposition temp (TGA)**

340~360	290~320
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- **Time to delamination (TMA)**

T288 (min)	20~40	1~10
T260 (min)	> 60	10~40

Z-Axis Thermal Expansion



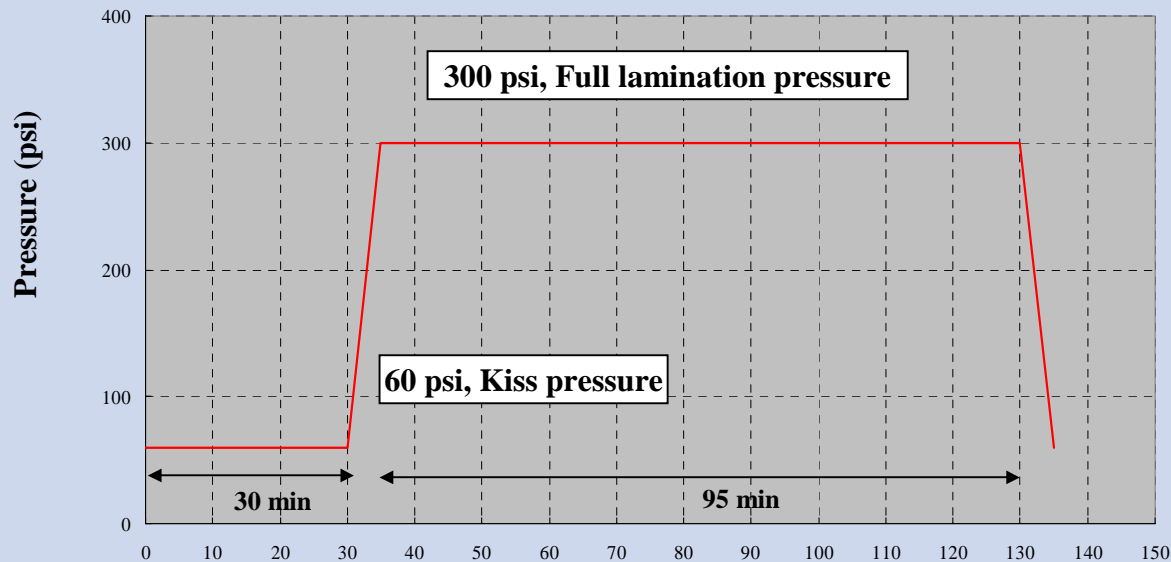
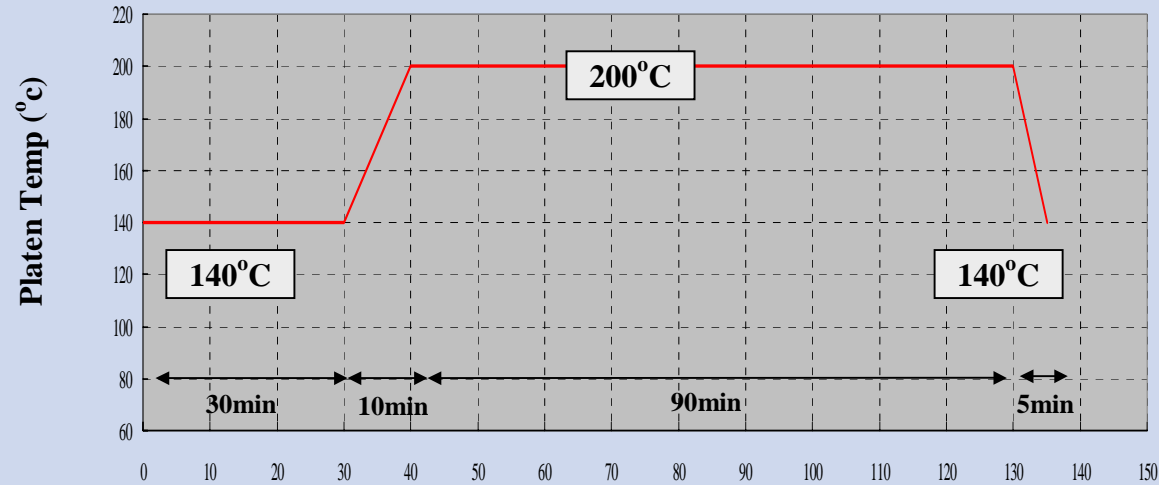
Processing Advantages

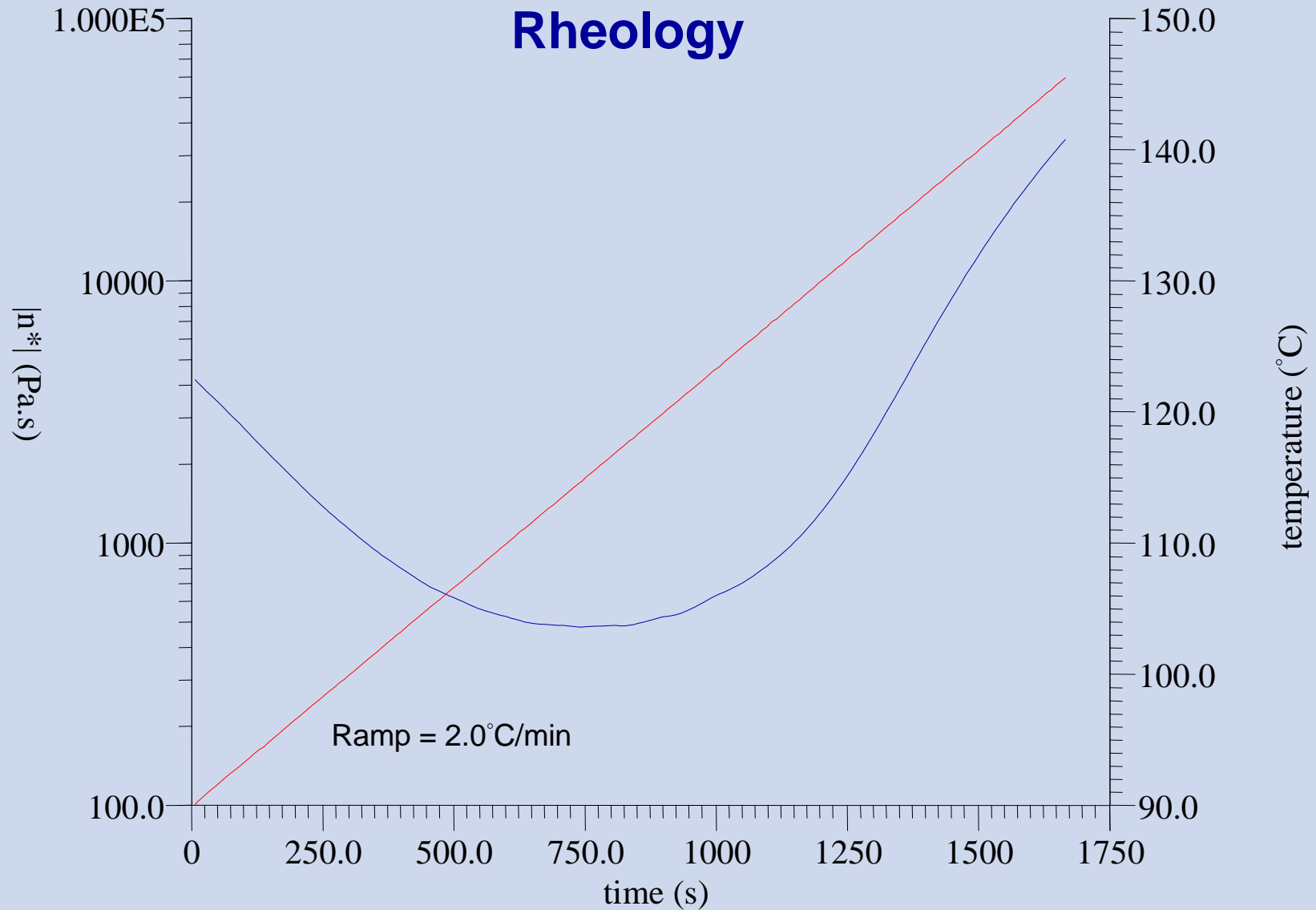
- ***Standard FR-4 Processing***
 - Conventional FR-4 Epoxy Processability
 - No Additional Post-Bake or Processing Changes
- ***UV Blocking***
 - Compatible with UV Curable Solder Masks
- ***AOI Fluorescence***
 - Compatible with all Types of AOI Equipments for Improved Productivity

Recommended Press Cycle

- Load and Center all Packages as Quickly as Possible
- Close Press and Apply 50 to 70 psi Kiss Pressure
- Adjust Stack Heat Rise to 1.5 to 2.5°C/min (80 ~ 140°C)
Using Proper Amount & Type of Padding
- Apply 250 ~ 350 psi Full Pressure when Outside of Stack
Reaches 100 to 120°C
- Once Center of Stack over 180°C, Cure for 60 minutes
- Cool Material under Moderate Pressure Slowly (3°C/min)
through 120°C, Cooling Rate may be Increased Below 150°C

Recommended Dual Stage Press Cycle





General Properties

Laminate Properties		IS410	High Tg FR-4
Tg	DSC	170-180	165-175
Peel Strength, 1/2 oz (low profile)	lb/in	5 - 7	6 - 8
Moisture Absorption (wt %)	D24/23	0.10 – 0.15	0.15 – 0.20
Flammability	UL-94	V-0	V-0
Dielectric Constant (500 MHz)	HP4291	4.1 - 4.3	4.1 - 4.3
Dissipation Factor (500MHz)	HP4291	0.015-0.025	0.015-0.025
Surface Resistivity (megohms)	C96/35/90	$1 \times 10^6 \sim 1 \times 10^7$	$1 \times 10^6 \sim 1 \times 10^7$
Volume Resistivity (megohms.cm)	C96/35/90	$5 \times 10^7 \sim 5 \times 10^8$	$5 \times 10^7 \sim 5 \times 10^8$

IS410 Typical Drill Parameters

Diameter (mil)	In Feed (in/min)	Speed (Krpm)	Chipload (mil/rev)	SFPM
10	70	100	0.7	262
15	100	95	1.05	373
20	100	92	1.09	484
25	130	84	1.55	550
30	140	70	2.0	550
40	155	52	3.0	550

Most Processes Stack 2 To-Date

Max Hit Count - 1000 Small Holes, 1500 Larger Holes

Prepreg Parameters

Grade	Resin Content (%)	Resin Flow (%)	Gel Time (sec)
IS410 106 BS	75 ± 3	55 ± 5	70 ± 20
IS410 1080BS	63 ± 3	42 ± 5	70 ± 20
IS410 2113BS	57 ± 3	38 ± 5	70 ± 20
IS410 2313BS	55 ± 3	35 ± 5	70 ± 20
IS410 2116BS	53 ± 3	30 ± 5	70 ± 20
IS410 1652BS	50 ± 3	30 ± 5	70 ± 20
IS410 1506BS	48 ± 3	30 ± 5	70 ± 20
IS410 7628BS	44 ± 3	23 ± 5	70 ± 20
IS410 7628HRC	50 ± 3	30 ± 5	70 ± 20