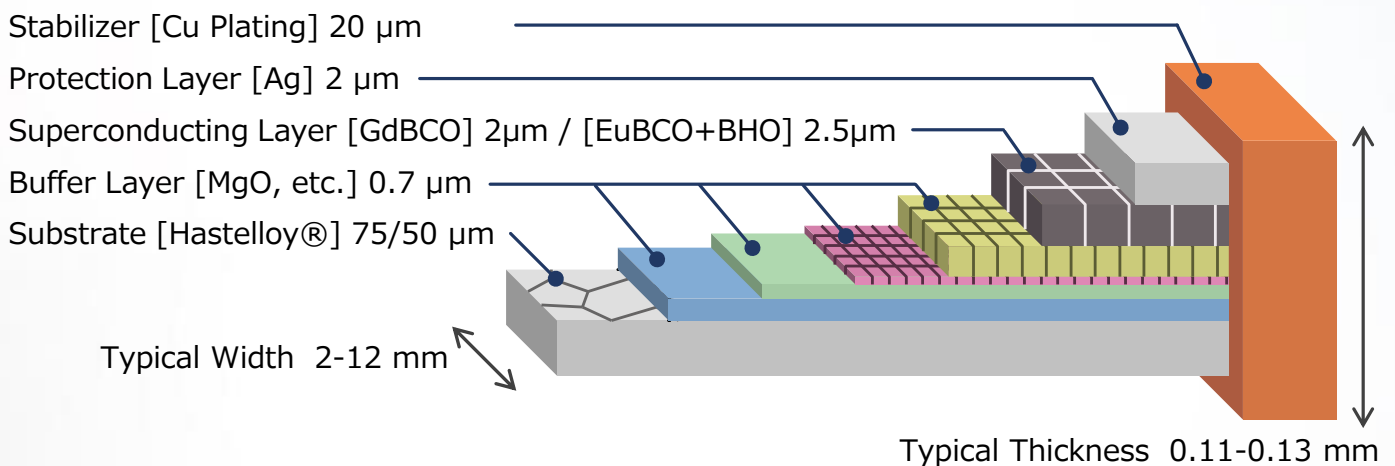


## ■ Characteristic Feature

- Superior in-field critical current and excellent mechanical properties applicable for magnet applications
- Original key manufacturing techniques of IBAD & PLD process enabling high superconducting performance



## ■ Schematic of Typical specification



## ■ Typical Specifications

Products	Width [mm]	Thickness [mm]	Substrate [ $\mu\text{m}$ ]	Stabilizer [ $\mu\text{m}$ ]	Critical Current [A]	
					77K, S.F.	20K, 5T <sup>*3</sup>
FYSC-SCH04	4	0.13	75	20	$\geq 165$	368
FYSC-SCH12	12	0.13	75	20	$\geq 550$	1,104
FYSC-S12 <sup>*1</sup>	12	0.08	75	–	$\geq 550$	–
FESC-SCH02 <sup>*2</sup>	2	0.11	50	20	$\geq 30$	257
FESC-SCH03 <sup>*2</sup>	3	0.11	50	20	$\geq 63$	497
FESC-SCH04 <sup>*2</sup>	4	0.11	50	20	$\geq 85$	663
FESC-SCH12 <sup>*2</sup>	12	0.11	50	20	$\geq 250$	1,990
FESC-S12 <sup>*1,2</sup>	12	0.06	50	–	$\geq 250$	–

\*1 Non-copper stabilizer specification is available in typically 12mm-wide for current lead or low thermal conducting applications.

\*2 Artificial pinning specification is mainly for use in magnet applications at low temperature and high magnetic field.

\*3  $I_c@20\text{K}, 5\text{T}$  is a reference value and no guarantee of the actual performance.

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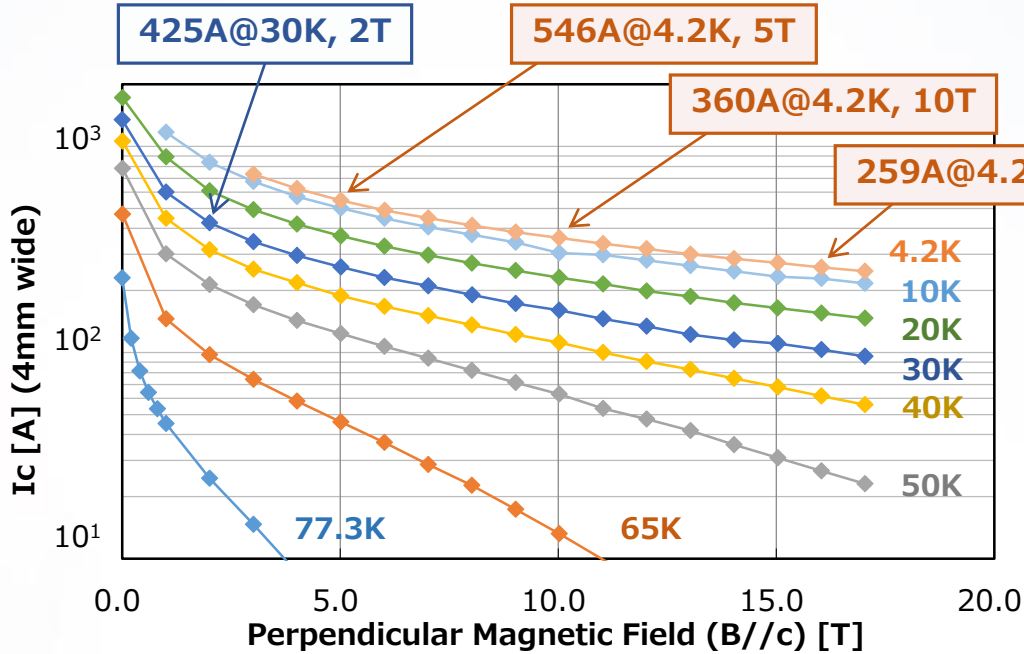
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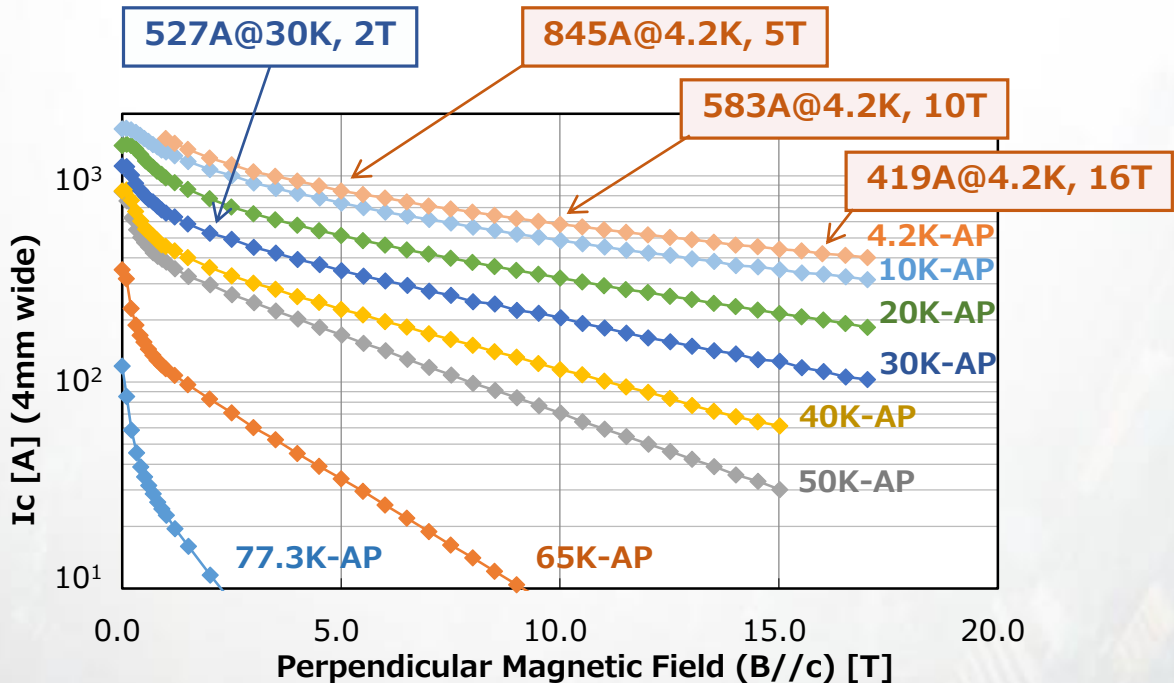
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## ■ Typical In-field $I_c$ Performance

Non-artificial pinning: FYSC series



Artificial pinning type: FESC series



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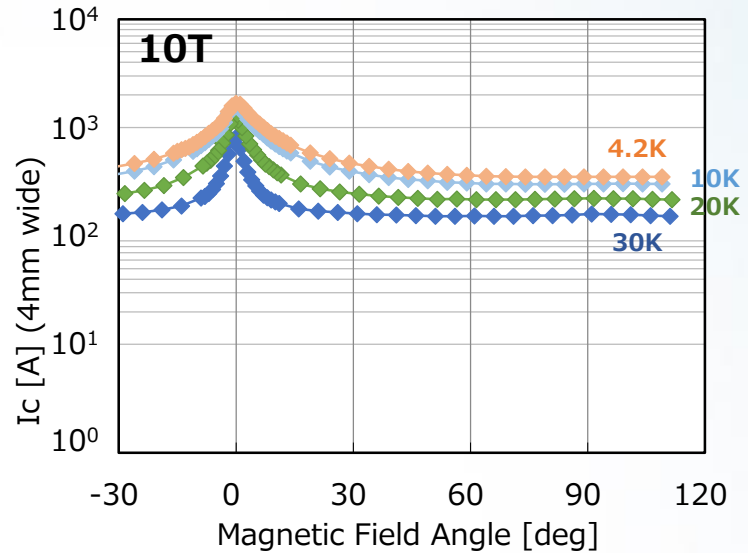
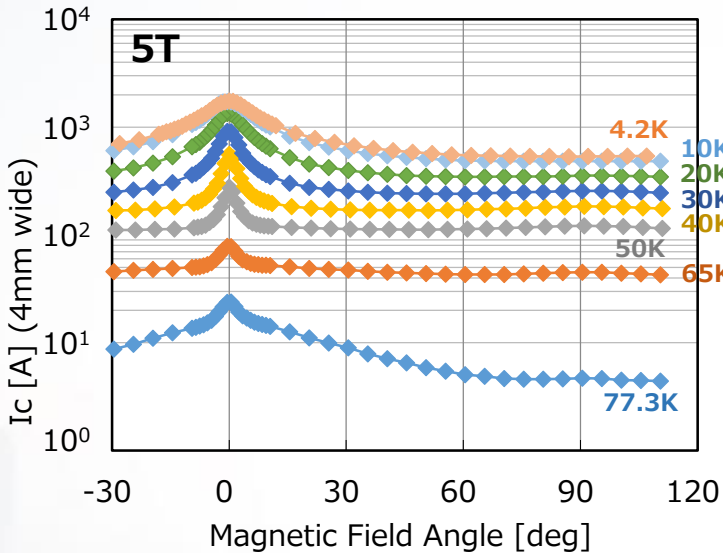
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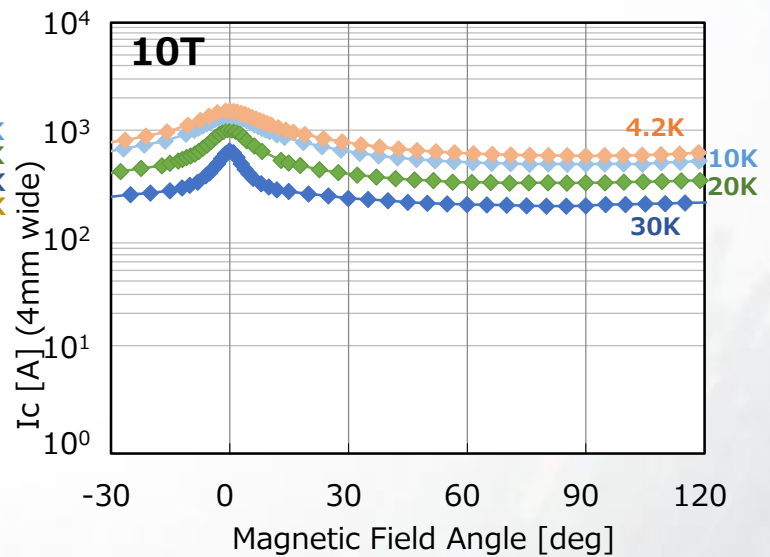
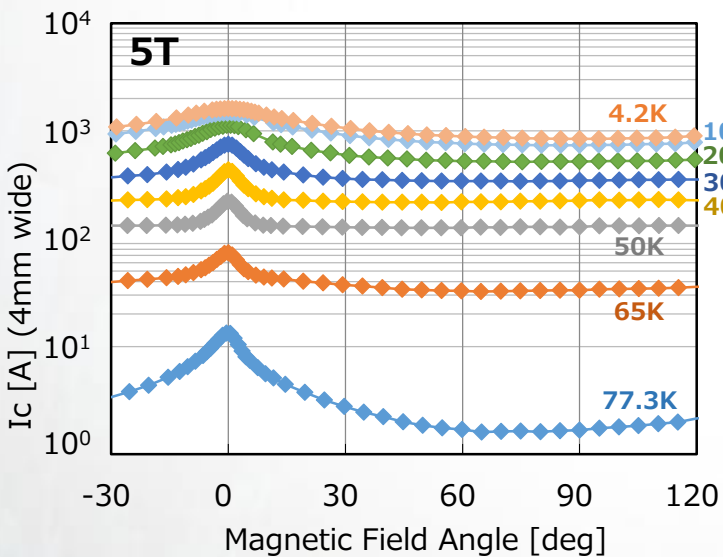
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## ■ Typical Field Angle Dependence

### Non-artificial pinning: FYSC series



### Artificial pinning type: FESC series



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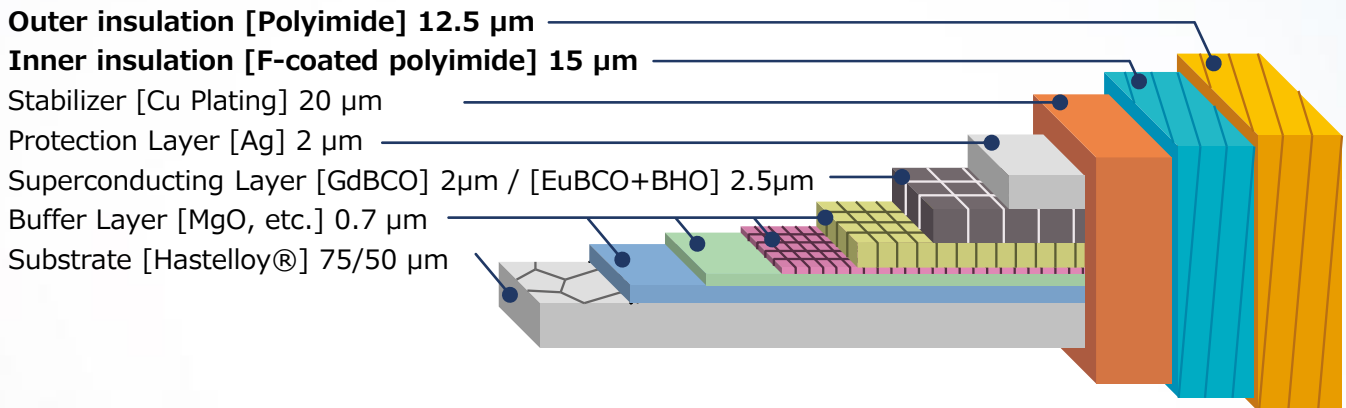
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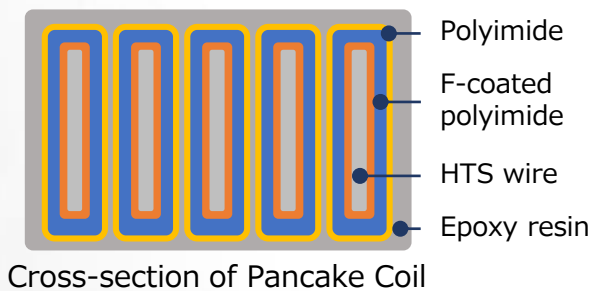
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## ■ Degradation Free 2G HTS : Type FPI

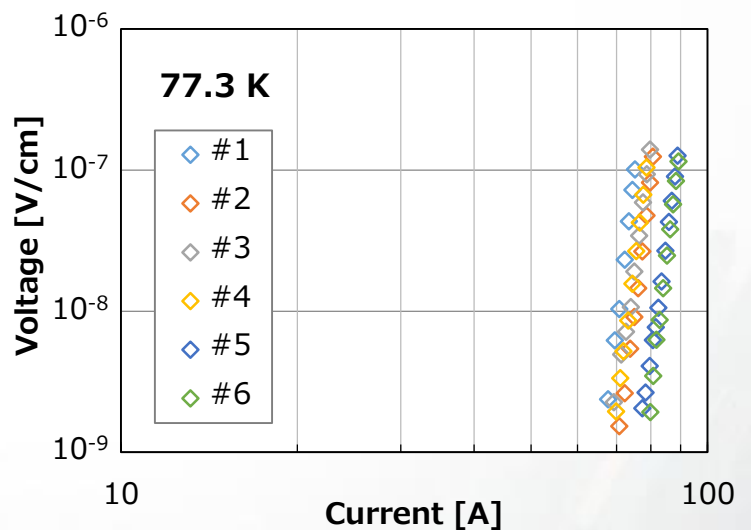
- Relaxation of delamination stress by fluorine coating enables to fabricate epoxy-impregnated coils without degradation drastically easily.
- Type FPI with Fluorine-coated polyimide insulation is optionally available for copper plating products of FYSC and FESC.



## ■ Proven Epoxy Impregnated Coil



Double Pancake Coil with Vacuum Pressure Impregnation



**No Degradation Observed**

Ref.) IEEE TRANSACTIONS ON APPLIED SUPERCONDUCTIVITY, VOL. 26, NO. 4, JUNE 2016

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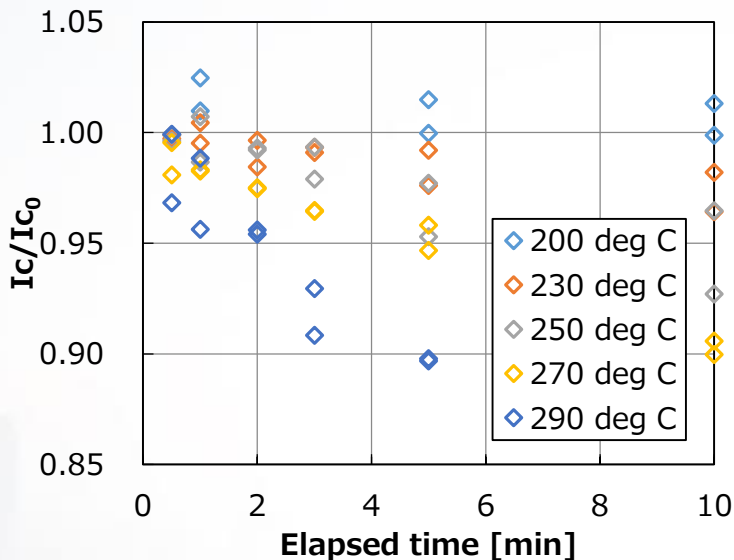
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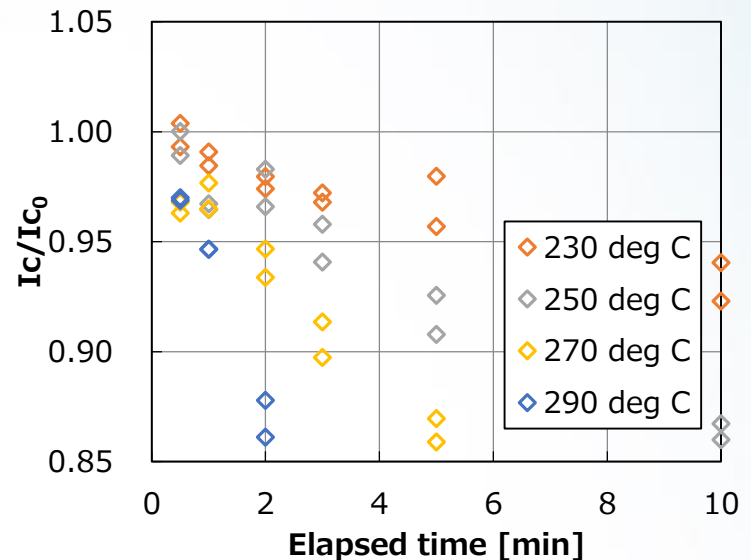
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## ■ Note for Handling at Heating

### Non-artificial pinning: FYSC series



### Artificial pinning type: FESC series



- It shall be generally recommendable to heat below 200 degrees C within few minutes. Heating over 200 degrees C could be also acceptable with full attentions to heating condition.
- These conditions shall not be necessarily applicable to HTS tapes with silver protection layer due to soldering erosion of silver layer.

## ■ Recommendable soldering Condition

- It shall be generally recommendable to use solders with low melting point and to heat below 200 degrees C within few minutes. In case it would be difficult to melt solder, heating over 200 deg C could be also acceptable with full attentions.
- Pb-free solder could be available with full attention to heating condition. Other solders could be also available depending on application designs or environmental regulation.
- Sn-Bi based or more preferably Sn-Bi-Ag based solder would be recommendable for HTS tapes with silver protection layer such as FYSC-S or FESC-S series. Especially solder including Ag is relatively easy to solder silver protection layer.

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