

To TEX customer

MT1-23009-01
20th. Feb. 2024

Development of New TEX-ELZS composite multi strands type

Furukawa Electric Co., Ltd.

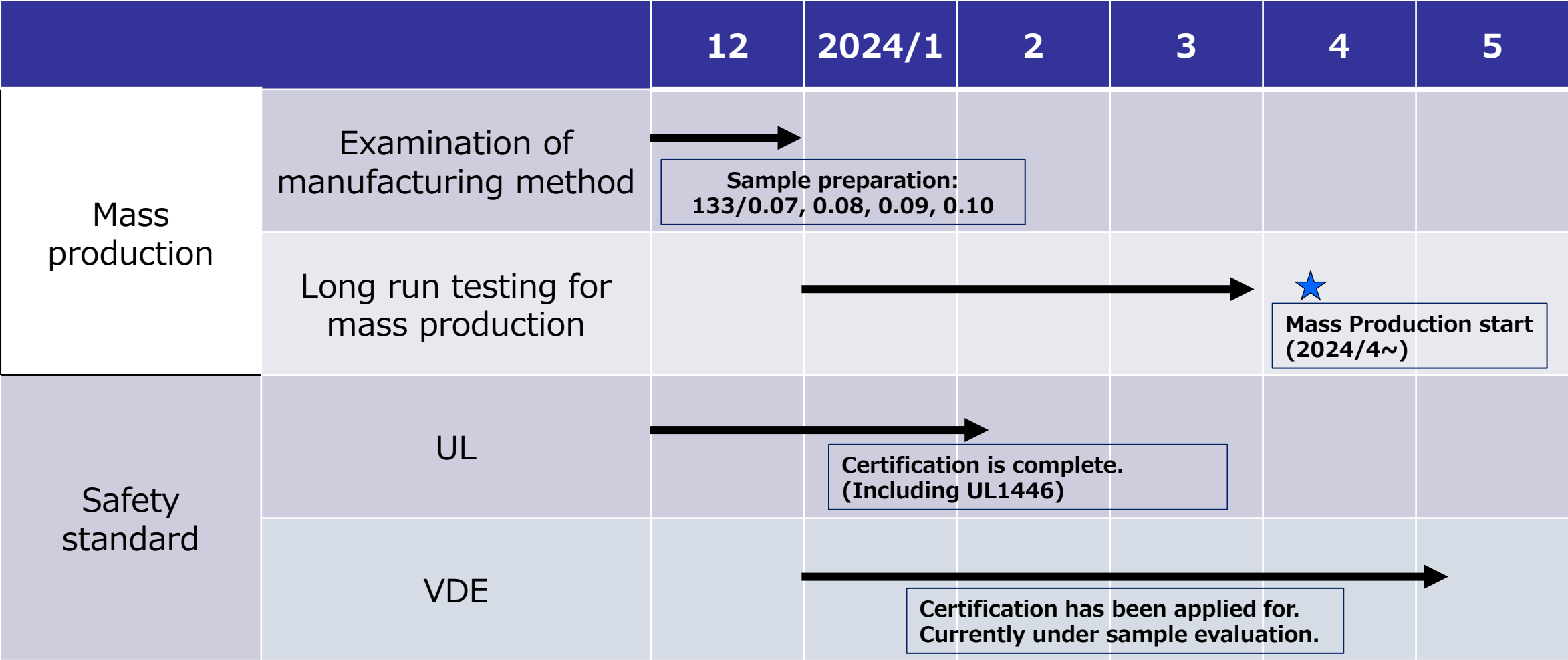
Electric Conductor Division, Magnet Wire Technical Department

Schedule

1. Schedule

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Schedule of development is shown below.



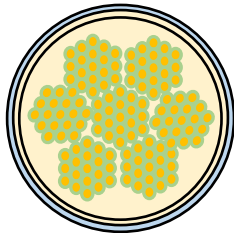
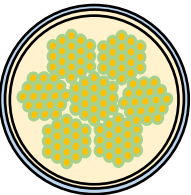
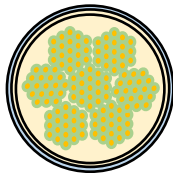
Wire design

2. Wire design

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Wire specification is shown below.

Size	Conductor diameter of strand mm	Tolerance mm	Overall diameter of strand mm	Overall diameter of strands mm	Normal overall diameter mm	Maximum overall diameter mm	Normal conductor resistance Ω/km	Maximum conductor resistance Ω/km	Equivalent solid wire size mm
133/0.07	0.070	0.003	0.082	1.230	1.430	1.458	35.06	38.27	0.81
133/0.075	0.075	0.003	0.087	1.305	1.505	1.533	30.54	33.14	0.86
133/0.08	0.080	0.003	0.092	1.380	1.580	1.608	26.84	28.97	0.92
133/0.085	0.085	0.003	0.097	1.455	1.655	1.683	23.78	25.55	0.98
133/0.09	0.090	0.003	0.102	1.530	1.730	1.758	21.21	22.70	1.04
133/0.095	0.095	0.003	0.107	1.605	1.805	1.833	19.04	20.30	1.10
133/0.10	0.100	0.003	0.112	1.680	1.880	1.908	17.18	18.26	1.15



UL certificate

3. UL certificate of New TEX-ELZS

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UL certificate of New TEX-ELZS is shown below. (UL database)

2024/02/05 10:54

OBJT2.E206440 - Single- and Multi-layer Insulated Winding Wire - Component | UL Product iQ

UL Product iQ®

Single- and Multi-layer Insulated Winding Wire - Component

COMPANY

Furukawa Electric Co., Ltd.
Electric Conductor Division
Magnet Wire Technical Dept.
2-6-4 Otemachi
Chiyoda-ku, Tokyo 100-8322 Japan

E206440

Cat. No.	Insulation Type	TIW Conductor Size Range	Temperature °C	Rated Volts UL 60950-1 V peak	Rated Volts UL 60601-1 V rms	Rated Volts UL 61800-5-1 V rms
FSX-E, SX-E	Basic	40-29 AWG	120(E)	354	-	-
FWX-E	Supplementary	40-29 AWG	120(E)	354	-	-
FSX-B	Basic	0.11-0.19	130(B)	354	-	-
TEX-BS	Reinforced	32-18 AWG	130(B)	1410	-	-
TEX-E, TEX-EA	Reinforced	32-18 AWG	130(B)	1410	150	300
TEX-ELZ(xx)(yy)	Reinforced	Cross-Section Area - 0.055mm ² - 1.045mm ²	130(B)	1410	150	300
TEX-FR	Reinforced	32-18 AWG	155(F)	1410	150	300
TEX-FS	Reinforced	32-18 AWG	155(F)	1410	250	-

(xx) - indicated following suffix, Blank is MW 75-C, S is MW 28-C
(yy) - indicated following suffix, Blank is No self-bondable layer, C3 is Self-bondable layer

https://iq.ulprospector.com/en/profile?e=99520

1/2

TEX-ELZ(xx)(yy)
(xx):Blank or S
(yy):C3[Self-bonding type]

Size
0.055mm² (7/0.10) –
1.045mm² (133/0.10)

High-frequency characteristics of New TEX-ELZS

4. High-frequency characteristics of New TEX-ELZS

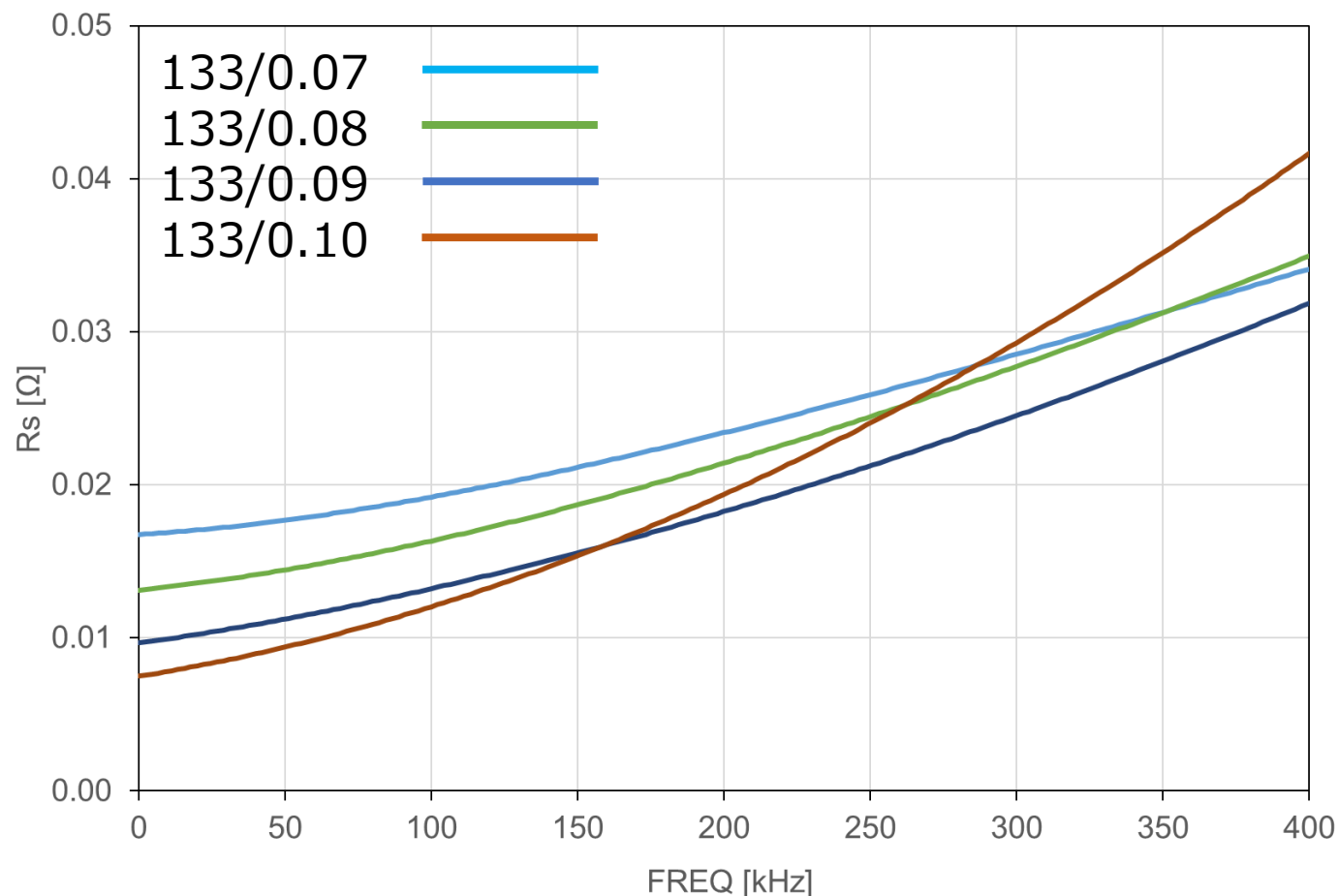
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High-frequency characteristics of TEX-ELZS 133/0.07 ~ 133/0.10 are shown below.



Specimen

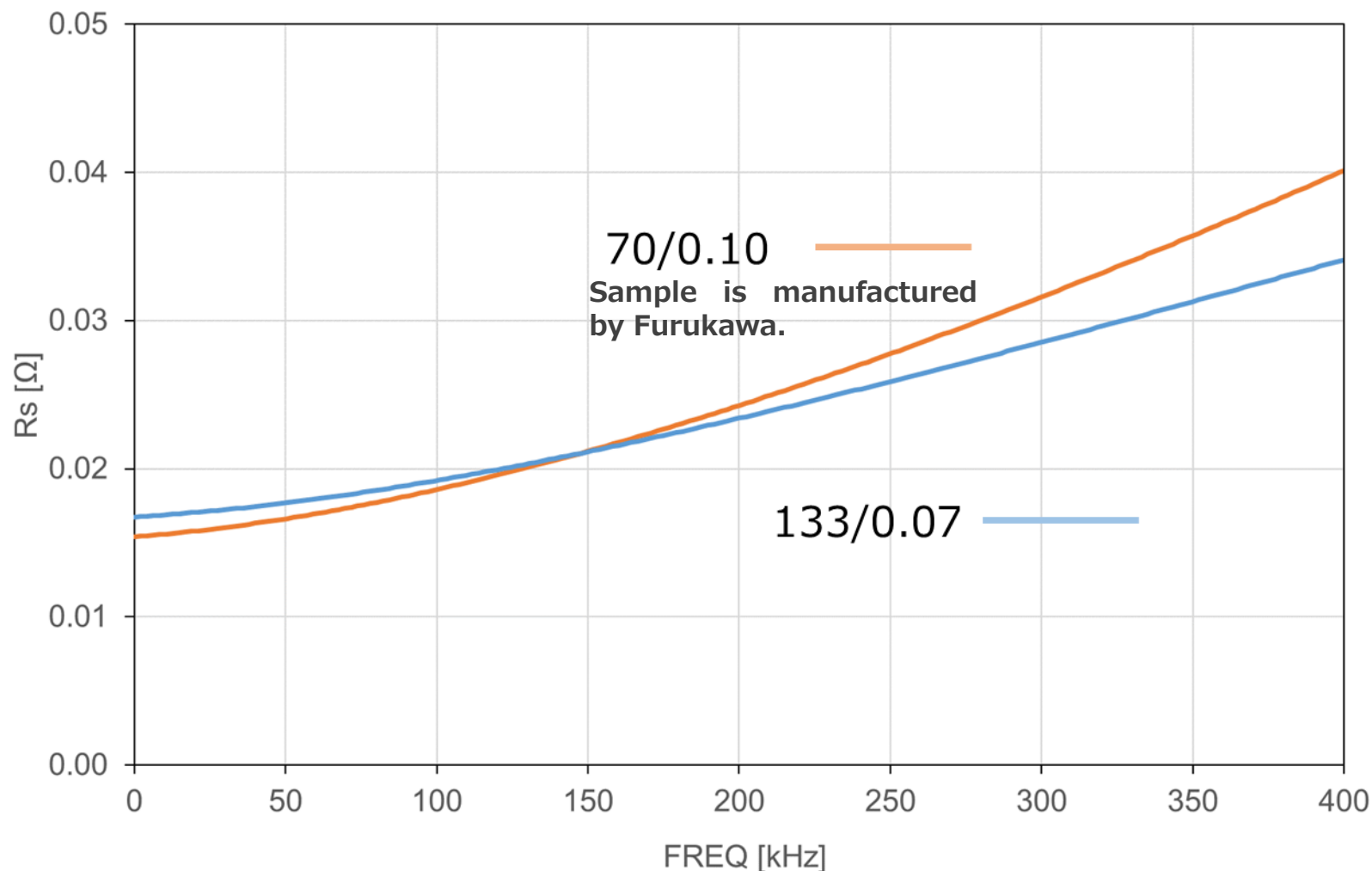
- Increasing frequency does not necessarily result in a smaller resistance in a larger size.
- The rate of increase in resistance for 133/0.10 is larger than other size.



4. High-frequency characteristics of New TEX-ELZS

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Comparison at target size (70/0.10 vs 133/0.07)

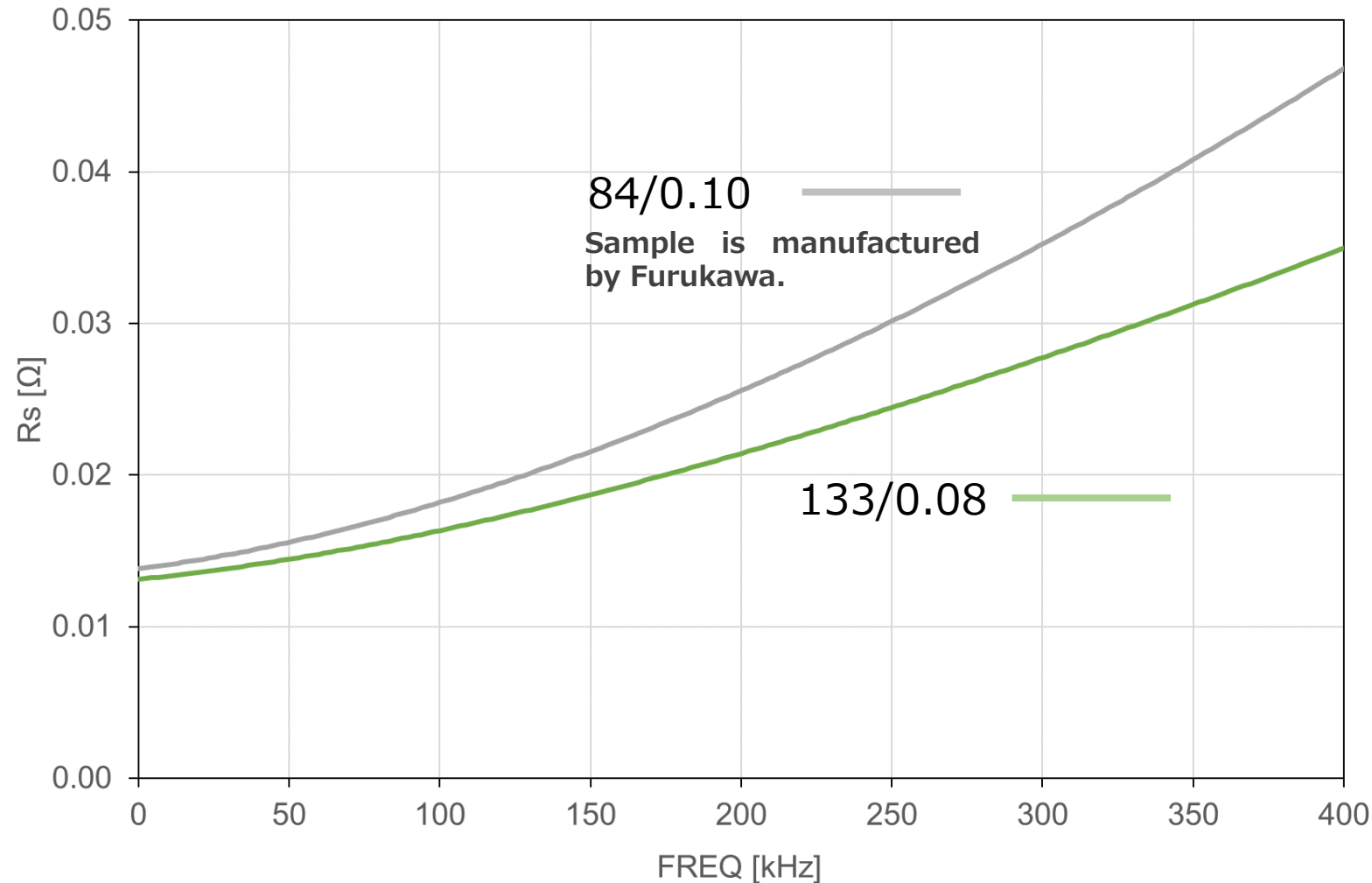


- In comparison to 70/0.10, 133/0.07 is observed to suppress the increase in resistance at high frequencies. (reversed at 150 kHz)

4. High-frequency characteristics of New TEX-ELZS

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Comparison at target size (84/0.10 vs 133/0.08)

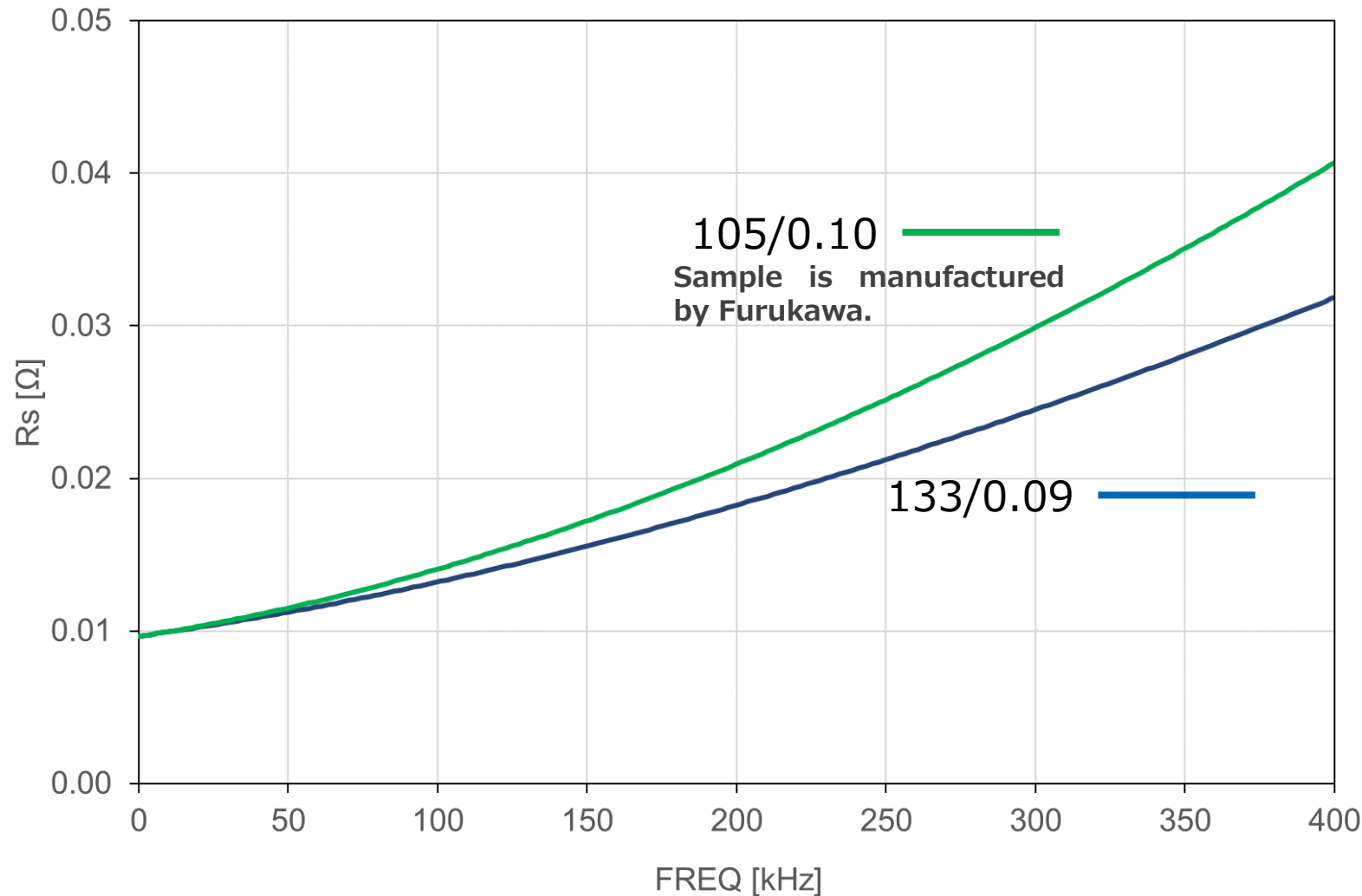


- In comparison to 84/0.10, 133/0.08 is observed to suppress the increase in resistance at high frequencies.

4. High-frequency characteristics of New TEX-ELZS

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Comparison at target size (105/0.10 vs 133/0.09)



- In comparison to 105/0.10, 133/0.09 is observed to suppress the increase in resistance at high frequencies.

Thank you,

