FURUKAWA ELECTRIC

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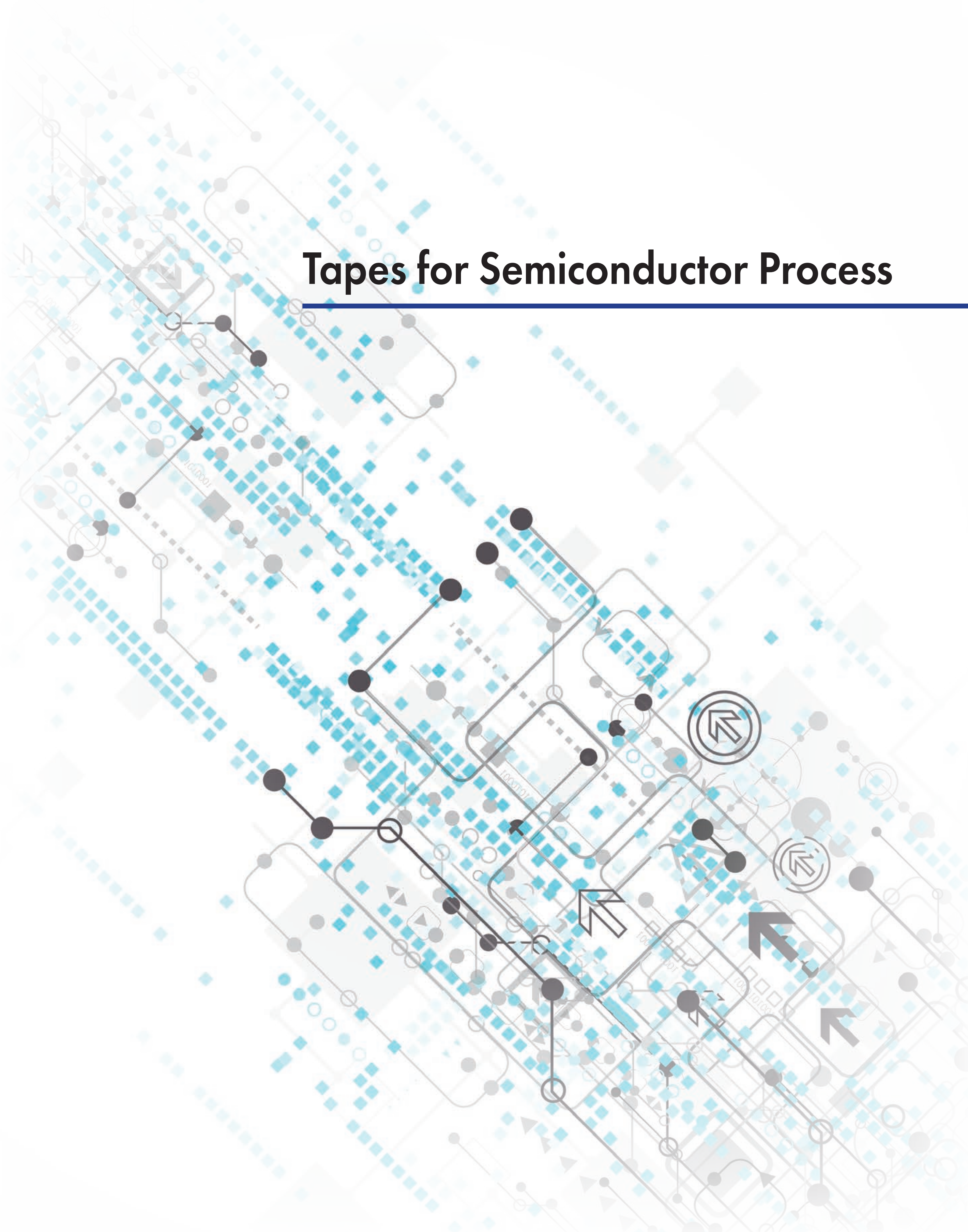
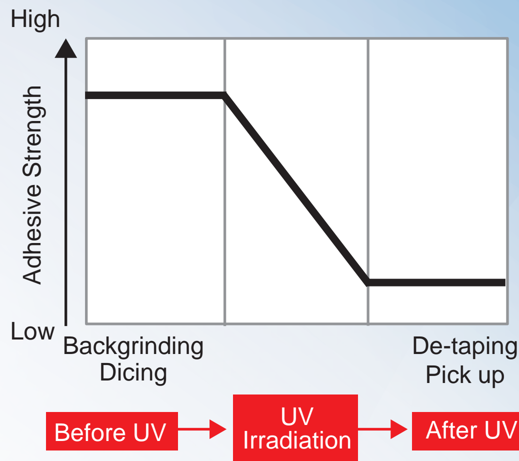
Tapes for Semiconductor Process



What is UV Tape ?

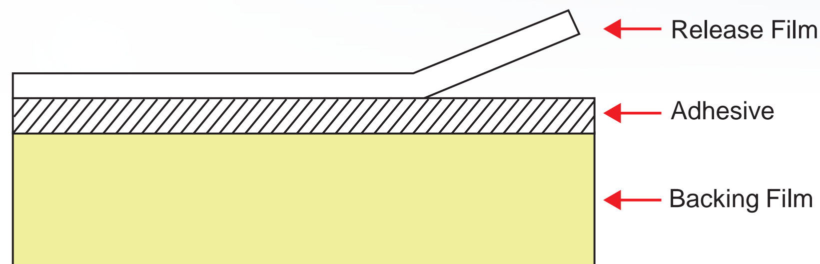
UV Tape is adhesive tape for semiconductor process. It is suitable to protect surface of semiconductor wafer during backgrinding process, and to hold semiconductor wafer with ring frame during dicing process. It is also applicable for various workpieces such as ceramics, glass, sapphire and so on.



The advantage of UV tape
UV tape has stronger adhesive strength and can hold wafer firmly in backgrinding process or dicing process. After UV irradiation, adhesive strength decreases drastically and easy de-taping or die pick up can be achieved.

Structure

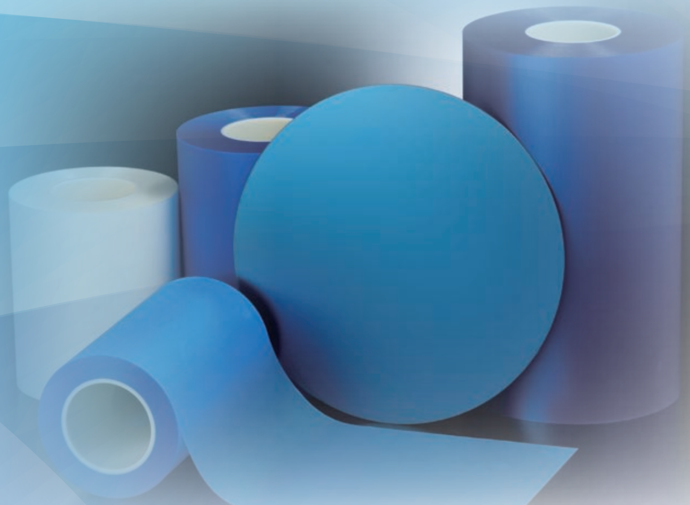
Tape consists of backing film and adhesive layer, and the surface of the adhesive layer is covered with a release film. Backing film, adhesive layer, and release film are mainly made of polyolefin, acrylic adhesive and PET, respectively.



Process	Backgrinding		Dicing	
Tape	SP Series	CP Series	UC Series	FC Series
Features	UV Type	Non-UV Type	UV Type	UV Type
Release Film	PET	PET Polypropylene	PET	PET
Adhesive	Acrylic	Acrylic	Acrylic	Acrylic
Backing Film	Polyolefin	Polyolefin	Polyolefin	Polyolefin

∗ Data shown in this brochure are typical values and not guaranteed values.
∗ For any other special application, please contact our representatives.

SP Series
CP Series



SP Series UV Tape for Wafer Backgrinding

- SP series is designed for surface protection of semiconductor wafer during backgrinding process.
- Easily de-taped from wafer without stress after UV irradiation.

Tape			SP-594M-130	SP-541B-205	SP5156B-130	SP-537T-230
Backing Film Thickness(μm)			100	165	110	100
Adhesive Thickness(μm)			30	40	20	130
Adhesive Strength (N/25mm)	#280-SUS	Before UV	8.6	2.7	1.4	5.0
		After UV	0.1	0.5	0.4	0.7
	Si-Wafer	Before UV	3.3	1.6	0.6	1.9
		After UV	0.1	0.2	0.1	0.1
Tensile Strength (N/10mm)	MD		23	26	21	21
	TD		22	23	17	18
Elongation (%)	MD		800	430	450	570
	TD		930	570	620	730
Features			• Standard • Etching Durable	• Low Warpage • For Thin Wafer	• Low Warpage • For Thin Wafer	• For Bumped Wafer

CP Series Non-UV Tape for Wafer Backgrinding

- CP series is designed for surface protection of semiconductor wafer during backgrinding process.
- Easily de-taped from wafer without stress by optimized adhesive strength.

Tape		CP9007B-130	CP9003B-205B	CP9079B-200
Backing Film Thickness(μm)		100	165	165
Adhesive Thickness(μm)		30	40	35
Adhesive Strength (N/25mm)	#280-SUS	0.9	1.8	0.6
	Si-Wafer	0.7	1.6	0.4
Tensile Strength (N/10mm)	MD	21	44	34
	TD	19	34	36
Elongation (%)	MD	550	600	500
	TD	710	710	690
Features		• Standard	• Surface Roughness Absorption(<20μm) • Low Warpage • For Thin Wafer • Acid Etching Durable	• Silicone Free Release Film(No release agent)

UC Series
FC Series

UC Series UV Tape for Wafer Dicing

- UC series is designed to hold semiconductor wafer with ring frame, during dicing process.
- Easy die pick up without stress after UV irradiation.

Tape			UC-353EP-110A	UC3026M-110	UC3044M-110B	UC-334EP-85
Backing Film Thickness(μm)			100	100	100	80
Adhesive Thickness(μm)			10	10	10	5
Adhesive Strength (N/25mm)	#280-SUS	Before UV	7.1	5.0	2.7	2.2
		After UV	0.4	0.5	0.2	0.3
	Si-Wafer	Before UV	2.7	1.6	1.2	1.1
		After UV	0.1	0.1	0.1	0.2
Tensile Strength (N/10mm)	MD		49	26	41	22
	TD		44	26	39	18
Elongation (%)	MD		750	310	740	360
	TD		820	410	800	520
Features			• Standard • For Thick Wafer	• For Die Separation By Expansion	• For In-Line Process • For Thin Wafer	• For Metalized Wafer

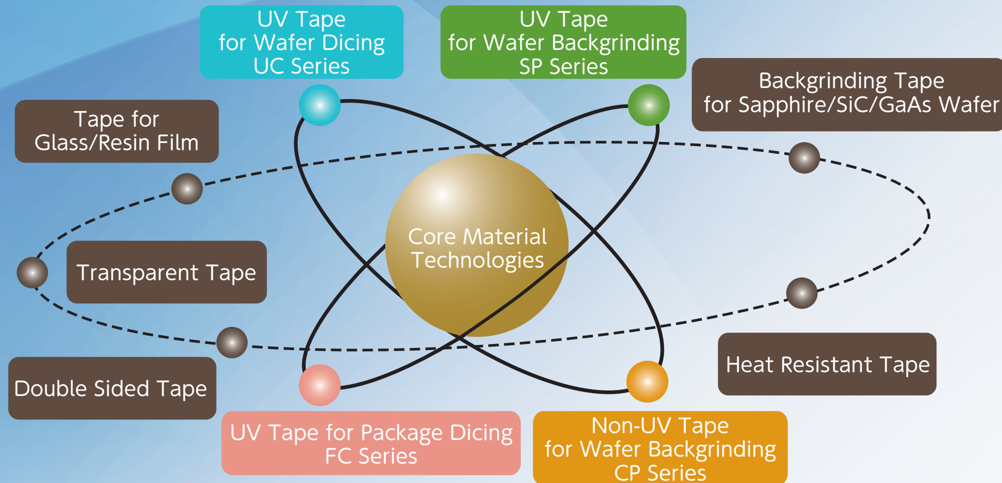
FC Series UV Tape for Package Dicing

- Optimized tackiness holds packages during dicing process.
- Easy die pick up for BGA, QFN, and other package types, after UV irradiation.

Tape			FC-217M-170	FC-224M-170	FC2143M-165	FS-8304-170
Backing Film Thickness(μm)			150	150	150	150
Adhesive Thickness(μm)			20	20	15	20
Adhesive Strength (N/25mm)	#280-SUS	Before UV	6.7	6.2	9.8	4.7
		After UV	0.4	0.4	0.2	0.5
	Si-Wafer	Before UV	6.6	4.8	7.3	5.5
		After UV	0.3	0.3	0.1	0.3
Adhesive Strength (N/10mm)	PKG	Before UV	0.5	0.6	1.3	0.6
		After UV	0.1	0.1	0.1	0.1
Tensile Strength (N/10mm)	MD		34	44	63	48
	TD		32	42	60	46
Elongation (%)	MD		790	340	780	650
	TD		920	400	820	680
Features			• Standard	• Burr Suppressed Backing Film	• For Small Package	• Anti-ESD Before UV:9E+10 After UV:5E+11

UV Tape for Special Application

UV Tape for Special Application



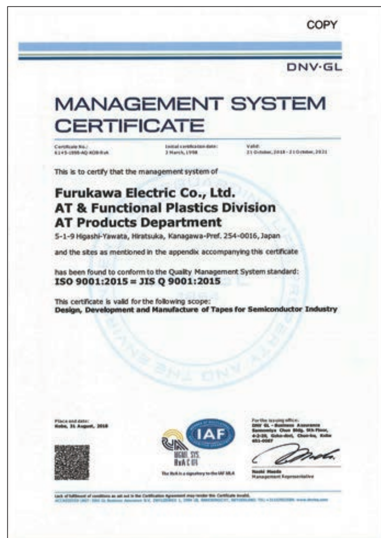
Tape			UC3160M-95	UC3145M-170	UC3166M-115	UC3098M-110
Backing Film Thickness(μm) Adhesive Thickness(μm)			80 15	150 20	100 15	100 10
Adhesive Strength (N/25mm)	#280-SUS	Before UV	1.8	11.4	8.1	6.1
		After UV	0.3	0.4	0.3	0.4
	Si-Wafer	Before UV	0.5	10.4	7.7	2.5
		After UV	0.1	0.1	0.2	0.1
	Glass	Before UV	0.5	8.1	7.1	2.3
		After UV	0.1	0.1	0.1	0.1
Features			• For Glass Chip Separation By Expansion • For Glass Chip Carrier	• For Glass Blade Dicing	• For Glass Chip Carrier/Cleaning	• For Glass/Resin Film Blade Dicing

Tape			UC3162T-120	UC-228W-110	SP-537T-130	SP6101T-40
Backing Film Thickness(μm) Adhesive Thickness(μm)			100 20	70 20+20	100 30	25 15
Adhesive Strength (N/25mm)	#280-SUS	Before UV	4.4	11	4.1	1.4
		After UV	0.2	0.2	1.6	0.1
	Si-Wafer	Before UV	2.2	3.3	1.7	0.9
		After UV	0.1	0.1	0.1	0.1
Features			• Transparent • For Laser Dicing/ Marking Through Tape	• Double Sided	• For Sapphire/ SiC/GaAs Wafer Backgrinding	• Heat Resistant • For Sputter

【Adhesive Strength Test Conditions】
Substrate : Mirror-Polished Silicon Wafer(Si-Wafer),
#280-Polished Stainless Steel Plate(#280-SUS),
Package(PKG), Glass
Peeling Angle : 90° Peeling Speed : 50mm/min (SP, UC, FC Series)
Peeling Angle : 180° Peeling Speed : 300mm/min (CP Series)

【Tensile Strength/Elongation Test Conditions】
Sampling : Before UV Stretching Speed : 300mm/min
MD : Machine Direction TD : Transvers Direction

ISO 9001 Certification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MANAGEMENT SYSTEM CERTIFICATE

This is to certify that the management system of

Furukawa Electric Co., Ltd.
AT & Functional Plastics Division
AT Products Department
5-1-9 Higashi-Yawata, Hiratsuka, Kanagawa-Pref. 254-0016, Japan

and the sites as mentioned in the appendix accompanying this certificate

has been found to conform to the Quality Management System standard:
ISO 9001:2015 = JIS Q 9001:2015

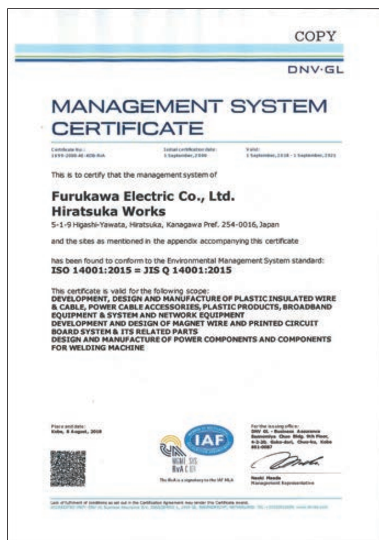
This certificate is valid for the following scope:
Design, Development and Manufacture of Tapes for Semiconductor Industry

IAF

Furukawa Electric has acquired the ISO 9001 certification for Global Quality Management System about design, development and manufacture of tapes for semiconductor process.

ISO 14001 Certification

Hiratsuka Works, Mie Works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5-1-9 Higashi-Yawata, Hiratsuka, Kanagawa Pref. 254-0016, Japan

and the sites as mentioned in the appendix accompanying this certificate

has been found to conform to the Environmental Management System standard:
ISO 14001:2015 = JIS Q 14001:2015

This certificate is valid for the following scope:
DEVELOPMENT, DESIGN AND MANUFACTURE OF PLASTIC INSULATED WIRE & CABLE, POWER CABLE ACCESSORIES, PLASTIC PRODUCTS, BROADBAND EQUIPMENT & SYSTEM AND NETWORK EQUIPMENT
DEVELOPMENT AND DESIGN OF MAGNET WIRE AND PRINTED CIRCUIT BOARD SYSTEM & ITS RELATED PARTS
DESIGN AND MANUFACTURE OF POWER COMPONENTS AND COMPONENTS FOR WELDING MACHINE

IAF

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FURUKAWA ELECTRIC CO., LTD.
MIE WORKS

20-16 Nobono-cho, Kameyama-shi, Mie, Japan

CERTIFICATE

Certificate No.: EC98J1097

ISO 14001:2015 · JIS Q 14001:2015

Development, design and manufacture of optical fibers, optical fiber cables, telecommunication cables, copper wires, magnet wires, automotive electric components, copper & copper-alloy strips and plated strips, manufacture of tapes for semiconductors

Our organization certifies above organization to be complied with the requirement of indicated above management system.

Registration Date 24/Nov/1998
Recertification Date 24/Nov/2019
Issue Date 25/Oct/2019
Certificate Expiry 23/Nov/2022

Japan Audit and Certification Organization for Environment and Quality

To be used in conjunction with attached Appendix

Furukawa Electric recognizes that preservation of the global environment is a critical issue for society, and shall incorporate consideration of environmental preservation issues into every phase of corporate activity, to contribute forwards the sustainable development of prosperous and bright society.

FURUKAWA ELECTRIC CO., LTD. https://www.furukawa.co.jp/uvtape/en/

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