

IWATSU

World-class technology!!

with "High Temperature at +150°C", "100MHz Wide Frequency Bandwidth" and "φ1mm Extreme thin cable diameter"

Total of 101 models

Rogowski Coil Current Probe

SS-280 Series

SS-290 Series

SS-620 Series

SS-660 Series

SS-680 Series

1.2kV with Extreme thin φ1.2mm

SS-660P

60A 120A 300A

600A 1.2kA

Frequency BW

30MHz

Max. Voltage

1.2kv

Temperature range

-40°C ~ +125°C

Coil length

84mm ±4mm

max 1.2mm

Extreme thin φ1mm

SS-660

60A 120A 300A

600A 1.2kA

Frequency BW

30MHz

Max. Voltage

600v

Temperature range

-40°C ~ +125°C

Coil length

84mm ±4mm

max 1.0mm

SS-280A

30A 60A 120A 300A

600A 1.2kA 3.0kA

6.0kA 12kA 30kA

Frequency BW

30MHz

Max. Voltage

1.2kv

Temperature range

-40°C ~ +125°C

Coil length

84mm ±4mm

max 1.7mm

150°C High Temperature

SS-280A-H

30A 60A 120A 300A

600A 1.2kA 3.0kA

6.0kA 12kA 30kA

Frequency BW

30MHz

Max. Voltage

1.2kv

Temperature range

-40°C ~ +150°C

Coil length

84mm ±4mm

max 1.7mm



100MHz Wide BW

SS-680

120A 300A

600A 1.2kA

3.0kA 6.0kA

12kA

Frequency BW

100MHz

Max. Voltage

1.2kv

Temperature range

-10°C ~ +70°C



SS-620

60A 120A 300A

600A 1.2kA 3.0kA

6.0kA 12kA 30kA

Frequency BW

S type M type

25MHz 20MHz

L type XL type

15MHz 10MHz

Max. Voltage

5kv

Temperature range

-40°C ~ +125°C

Coil length

S:100mm

M:200mm

L:300mm

XL:500mm

max 3.0mm

120kA High Current

SS-290

1.2kA 3.0kA 6.0kA

12kA 30kA 60kA

120kA

Frequency BW

S type M type

20MHz 15MHz

L type XL type

10MHz 5MHz

Max. Voltage

10kv

Temperature range

-40°C ~ +125°C

Coil length

S:300mm

M:500mm

L:700mm

XL:1100mm

max 8.5mm

SS-680 Series



- Achieved 100MHz Measurement Frequency Bandwidth, suitable for evaluation of High-Speed Power Devices, such as SiC and GaN, etc.
- Downsizing and Low-profile of the Probe Head contribute Low-Ls Measurement.
- Max. 12,000A Measurement Capability. High Current Test can be performed without concern of Magnetic Saturation.
- Shielded Sensor Coil contributes to High-Performance against external environment, such as external noises, etc.
- Sensor Coil Temperature Range : -10°C to +70°C
- Max. Peak Voltage : 1.2kV

Frequency BW 100MHz

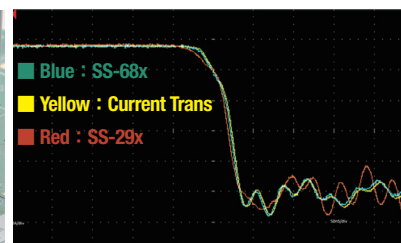
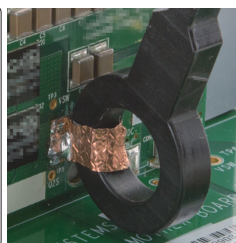
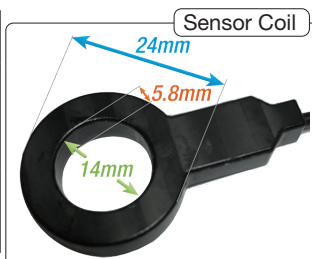
Max. Current 12,000A

Low-Ls Measurement

SiC · GaN devices

Non-magnetic saturation

Frequency bandwidth	100MHz
Temperature range (Sensor&cable)	-10°C~+70°C
Maximum peak voltage	1.2kV
Sensor Coil dimensions	Outer diameter : 24mm Inner diameter : 14mm Thickness : 5.8mm



Comparison

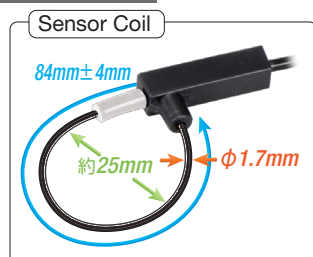
Model	IWATSU SS-680	Current Trans	Other Rogowski
Frequency Bandwidth	100MHz	70MHz	30MHz
Noise-tolerant	◎	◎	△
Size[Low-Ls]	○	△	◎
Max current	12,000A	10A	12,000A
Saturation	◎	×	◎

* Contact us for made-to-order specifications

*1 SS-686/SS-687/SS-688/SS-689 : Production by order

Model	Peak current [A]	Frequency BW [-3dB]	Sensitivity [mV/A]	Peak di/dt [kA/μs]	Noise [mV rms]	Absolute Max. di/dt	
						Peak [kA/μs]	RMS [kA/μs]
SS-683	120	65Hz ~ 100MHz	10	30	1.8	150	3.0
SS-684	300	32Hz ~ 100MHz	5	85			
SS-685	600	15Hz ~ 100MHz	2	150			
SS-686*1	1,200	8Hz ~ 100MHz	1	90	1.8	90	3.0
SS-687*1	3,000	5Hz ~ 50MHz	0.5				
SS-688*1	6,000	3Hz ~ 30MHz	0.2				
SS-689*1	12,000	2Hz ~ 30MHz	0.1				

SS-280A-H Series

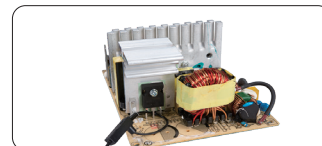


High Temperature +150°C

- Equipped with 1.7mm Thin Sensor Coil Wire Diameter, suitable for direct probing to TO Type MOSFET, IGBT Devices which are widely used for Power Electronics Equipment, such as Switching Power Supplies.
- Achieved 30MHz Measurement Frequency Bandwidth, suitable for observation of High-Speed Switching Waveforms.
- Measurement Range of 30A to 30,000A contributes to Wide Range Current Measurement.
- High Current Test can be performed without concern of Magnetic Saturation.
- Sensor Coil Temperature Range : A-H Type -40°C to +150°C, A Type -40°C to +125°C

Frequency Bandwidth	30MHz
Temperature range (Sensor&cable)	-40°C~+150°C
Maximum peak voltage	1.2kV
Sensor Coil dimensions	84mm ± 4mm
Sensor Coil diameter	1.7mm (Max.)

Probing example



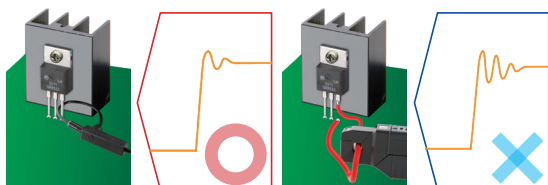
SS-280A Series

Frequency Bandwidth	30MHz
Temperature range (Sensor&cable)	-40°C~+125°C
Maximum peak voltage	1.2kV
Sensor Coil dimensions	84mm ± 4mm
Sensor Coil diameter	1.7mm (Max.)

Model	Peak current [A]	Frequency BW [-3dB]	Sensitivity [mV/A]	Peak di/dt [kA/μs]	Noise [mV rms]	Absolute Max. di/dt	
						Peak [kA/μs]	RMS [kA/μs]
SS-281A / A-H	30	110Hz ~ 30MHz	200	2	3.5	80	1.0
SS-282A / A-H	60	65Hz ~ 30MHz	100	4	2.5		
SS-283A / A-H	120	32Hz ~ 30MHz	50	8	2.0		
SS-284A / A-H	300	9Hz ~ 30MHz	20	20	1.8	80/40	1.5
SS-285A / A-H	600	6Hz ~ 30MHz	10	40			
SS-286A / A-H	1,200	3Hz ~ 30MHz	5	80/40	1.4	80/40	2.0
SS-287A / A-H	3,000	2Hz ~ 30MHz	2				
SS-288A / A-H	6,000	2Hz ~ 30MHz	1				
SS-289A / A-H	12,000	2Hz ~ 30MHz	0.5				
SS-280A / A-H*1	30,000	2Hz ~ 30MHz	0.2				

* Contact us for made-to-order specifications

*1 SS-280A/AH: Production by order



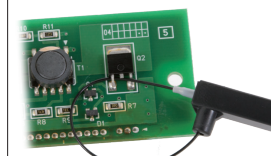
SS-660 / SS-660P Series

Extreme thin coil $\phi 1\text{mm}$



- Equipped with 1.0mm Extreme thin Sensor Coil Wire Diameter (1.2mm for P Type), suitable for direct probing to narrow spaces on Surface Mount Devices.
- Achieved 30MHz Measurement Frequency Bandwidth, suitable for observation of High-Speed Switching Waveforms.
- Wide Range Current Measurement Range of 60A to 1,200A.
- High Current Test can be performed without concern of Magnetic Saturation.
- Sensor Coil Temperature Range : -40°C to $+125^{\circ}\text{C}$

Probing example



Series	SS-660	SS-660P
Frequency Bandwidth	30MHz	
Temperature range (Sensor&cable)	$-40^{\circ}\text{C} \sim +125^{\circ}\text{C}$	
Maximum peak voltage	600V	1.2kV
Sensor Coil dimensions	84mm \pm 4mm	
Sensor Coil diameter	1mm (Max.)	1.2mm (Max.)

Sensor Coil



* Contact us for made-to-order specifications

*1 SS-660P Series and SS-662/SS-666: Production by order

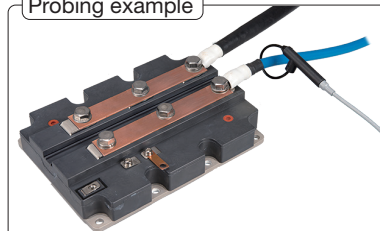
Model	Peak current [A]	Peak Voltage [V]	Frequency BW [-3dB]	Sensitivity [mV/A]	Peak di/dt [kA/μs]	Noise [mV rms]	Absolute Max. di/dt	
							Peak [kA/μs]	RMS [kA/μs]
SS-662*1	60	600V	110Hz ~ 30MHz	100	4	5.0	80	3.0
SS-662P*1		1,200V						
SS-663	120	600V	65Hz ~ 30MHz	50	8	3.5		
SS-663P*1		1,200V						
SS-664	300	600V	32Hz ~ 30MHz	20	20	2.5		
SS-664P*1		1,200V						
SS-665	600	600V	17Hz ~ 30MHz	10	40	2.0		
SS-665P*1		1,200V						
SS-666*1	1,200	600V	9Hz ~ 30MHz	5	80	1.8		
SS-666P*1		1,200V						

SS-620 Series



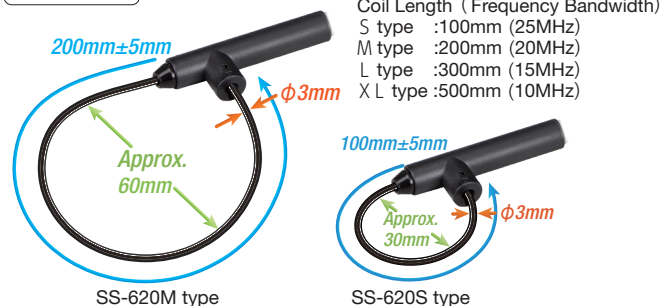
- Equipped with 3.0mm Thin Sensor Coil Wire Diameter, and Max. 5kV peak withstanding Voltage.
- Wide Range Current Measurement from 60A to 30,000A.
- High Current Test can be performed without concern of Magnetic Saturation.
- 4 Types of Coil Length (100 to 500mm) are selectable.

Probing example



Type	SS-620XL	SS-620L	SS-620M	SS-620S
Frequency Bandwidth	10MHz	15MHz	20MHz	25MHz
Temperature range (Sensor&cable)	$-40^{\circ}\text{C} \sim +125^{\circ}\text{C}$			
Maximum peak voltage	5kV			
Sensor Coil dimensions	Approx. 500mm	Approx. 300mm	200mm \pm 5mm	100mm \pm 5mm
Sensor Coil diameter	3mm (Max.)			

Sensor Coil



Coil Length (Frequency Bandwidth)
 S type : 100mm (25MHz)
 M type : 200mm (20MHz)
 L type : 300mm (15MHz)
 XL type : 500mm (10MHz)

* Contact us for made-to-order specifications

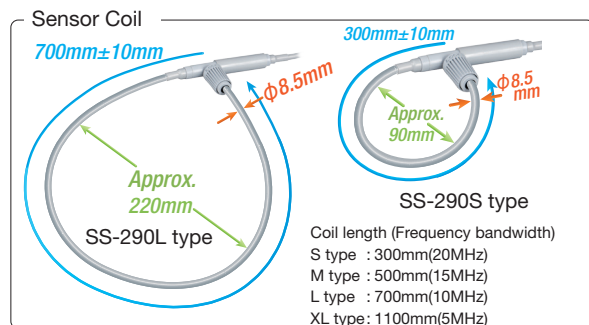
* Coil length L type and XL type : Custom-made products

*1 SS-622 · SS-630 Series : Production by order

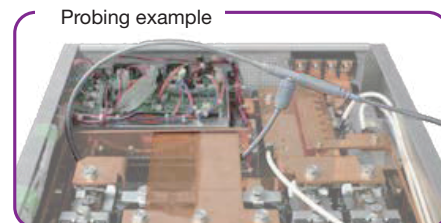
Model	Size	Peak current [A]	Frequency BW [-3dB]	Sensitivity [mV/A]	Peak di/dt [kA/μs]	Noise [mV rms]	Absolute Max. di/dt	
							Peak [kA/μs]	RMS [kA/μs]
SS-622*1	M	60	25Hz ~ 20MHz	100	TBD	5.0	80	3.0
	S		~ 25MHz		4			
SS-623	M	120	10Hz ~ 20MHz	50	6			
	S		~ 25MHz		8			
SS-624	M	300	4Hz ~ 20MHz	20	16			
	S		~ 25MHz		20			
SS-625	M	600	2Hz ~ 20MHz	10	32			
	S		~ 25MHz		40			
SS-626	M	1,200	1Hz ~ 20MHz	5	60			
	S		~ 25MHz		3.5			
SS-627	M	3,000	0.8Hz ~ 20MHz	2	2.0			
	S		~ 25MHz		2.0			
SS-628	M	6,000	0.6Hz ~ 20MHz	1	1.4			
	S		~ 25MHz		1.4			
SS-629	M	12,000	0.4Hz ~ 20MHz	0.5	1.2			
	S		~ 25MHz		1.2			
SS-630*1	M	30,000	0.2Hz ~ 20MHz	0.2	1.1			
	S		~ 25MHz		1.1			

SS-290 Series

Type	SS-290L	SS-290S
Frequency Bandwidth	Up to 10MHz	Up to 20MHz
Temperature range (Sensor&cable)	-40°C~+125°C	
Maximum peak voltage	10kV	
Sensor Coil dimensions	700mm ±10mm	300mm ±10mm
Sensor Coil diameter	8.5mm (Max.)	


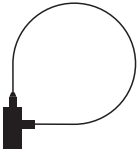
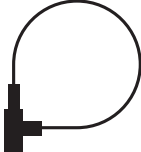




Model	Size	Peak current [A]	Frequency BW [-3dB]	Sensitivity [mV/A]	Peak di/dt [kA/μs]	Noise [mV rms]	Absolute Max. di/dt	
							Peak [kA/μs]	RMS [kA/μs]
SS-293	L	1,200	1Hz ~ 10MHz	5	32	3.5	80	3.0
	S				60			
SS-294	L	3,000	0.8Hz ~ 10MHz	2	80	2		
	S							
SS-295	L	6,000	0.6Hz ~ 10MHz	1		1.4		
	S							
SS-296	L	12,000	0.4Hz ~ 10MHz	0.5		1.2		
	S							
SS-297*1	L	30,000	0.2Hz ~ 10MHz	0.2		1.1		
	S							
SS-298*1	L	60,000	0.1Hz ~ 10MHz	0.1		1		
	S							
SS-299*1	L	120,000	0.1Hz ~ 5MHz	0.05				
	S							



- * Contact us for made-to-order specifications
- * Coil length M type and XL type : Custom-made products
- *1 SS-297 / SS-298 / SS-299 Series : Production by order

Rogowski Coil current probe common specifications

Series			SS-680	SS-660	SS-660P	SS-280A-H	SS-280A	SS-620	SS-290	
Sensor Coil										
Basic	Sensitivity accuracy		±2% (10°C ~ +70°C)	±2% (-10°C ~ +70°C) + additional ±250ppm/°C for -10°C or lower and +70°C or higher					±2% (-10°C ~ +60°C) + additional ±300ppm/°C for -10°C or lower and +60°C or higher	
	Out-put	Connector type	BNC							
		Voltage range	±1.5V or ±1.2V with 50Ω termination	±6V (Load at ≥ 100kΩ) *±2V at 50Ω termination, Sensitivity can be half.						±6V (load at ≥ 100kΩ)
	Input Coupling of the Measurement Instrument		50Ω	1MΩ AC/DC						
	Linearity		±0.05% (for full scale)							
	ZERO adj. range		±3mV or more	±300mV or more						
Sensor coil	Coil length/ Outer dimensions		OD : 24mm ID : 14mm Thickness : 5.8mm	Approx. 84mm±4mm		Approx. 84mm ±4mm	Approx. 84mm ±4mm (* 60mm also available, contact us for quote)	SS-620S: Approx. 100mm±5mm SS-620M: Approx. 200mm±5mm	SS-290S: Approx. 300mm±10mm SS-290L : Approx. 700mm±10mm	
	Sensor coil wire diameter		–	1.0mm, Max.	1.2mm, Max.	1.7mm, Max.		3mm, Max.	8.5mm, Max.	
	Max. voltage		1.2kVpeak	600Vpeak	1.2kVpeak	1.2kVpeak		5kVpeak	10kVpeak	
	Sensor coil cable length		1.5m ±50mm						3.0m ±100mm	
	Temperature range (Sensor & cable)		-10°C ~ +70°C	-40°C ~ +125°C		-40°C ~ +150°C		-40°C ~ +125°C		
Amplifier mainframe	Dimensions		Approx. 80(W)×165(D)×35(H) mm (excluding externals)							
	Weight		Approx. 0.37kg						Approx. 0.4kg	SS-29xS : Approx. 0.48kg SS-29xL : Approx. 0.50kg
	Power supply		AA type *4pcs. (approx. 18hours with Alkaline batteries), AC adaptor is also available(optional)							AA type (4pcs.) (approx. 30hours with Alkaline batteries)
	Accessories		BNC-BNC coaxial cable (50cm, 1pc.), Instruction manual (1), Adjustment driver (1), Hardcase (1), AA type Alkaline batteries (4)							
Environmental specification	Temp. range (operation)		0°C ~ +40°C, 80%RH or less							
	Temp. range (storage)		-10°C ~ +60°C, 80%RH or less							
	Operational altitude		≤2,000m at ≤25 °C							

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IWATSU

<https://www.iwatsu.com/tme/>

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