SC Type Fixed Attenuators (for single mode)

HSC-AT11 Series

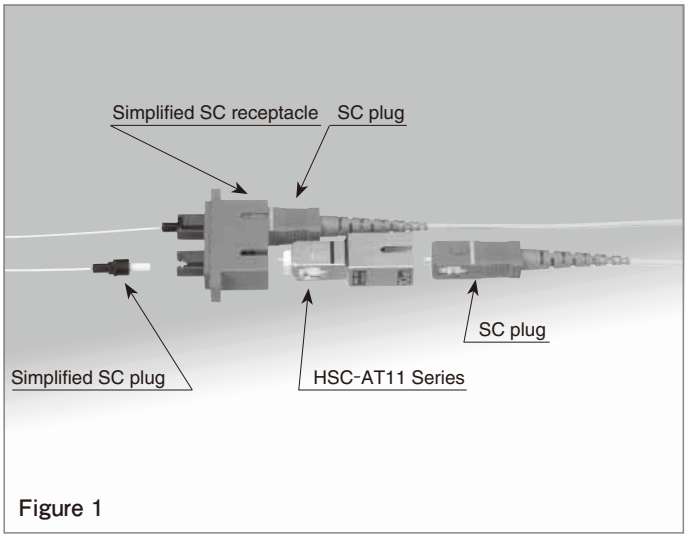


Figure 1

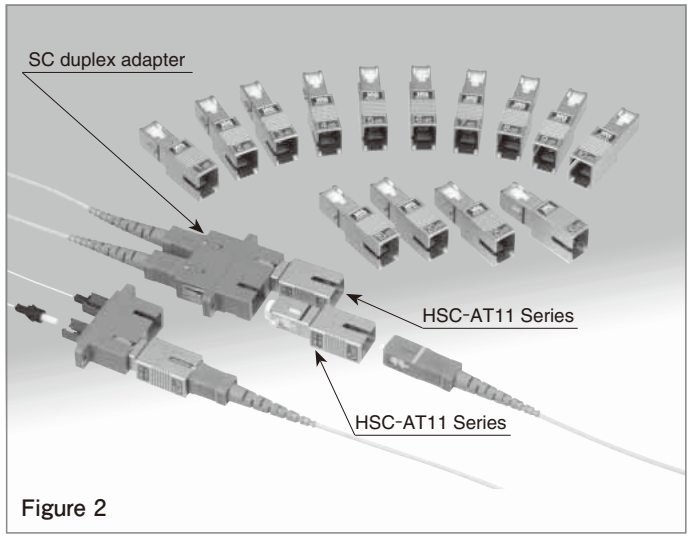


Figure 2

■Features

1. SC Type : IEC 61754-4 (JIS C 5973)

2. For high input power : 250mW max

3. Ensure mating with simplified SC plug / receptacle. (figure 1).

4. Enables adjacently connection with horizontal duplex adapter. (figure 2)

5. AdPC, UPC and APC (Angled PC) polishing types are available.

6. Wide attenuation lineup. Both wavelength 1310nm & 1550nm are available.

■Applications

Power level adjustment of optical fiber communication networks.

■Product Specifications

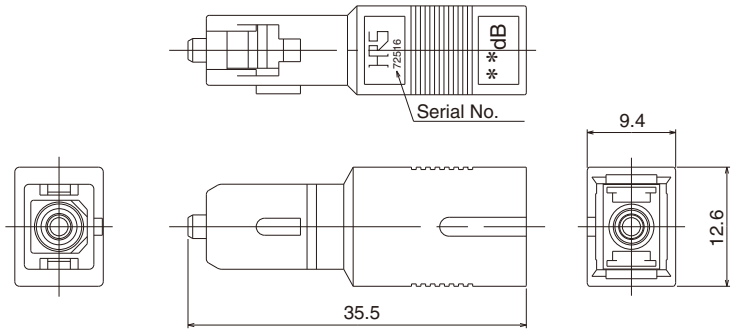
●AdPC (Advanced PC) Polishing type: Return Loss ≧ 40dB

Ratings	Operating temperature range	-40°C to +75°C	Storage temperature range	-40°C to +85°C
	Max. Input Power	250mW	Fiber type	SM

Item		Test Method	Requirments
Optical Characteristics	Attenuation	Measurement at a point within wavelength of 1310±30 nm and a point within wavelength of 1550±30 nm.	See the attenuation table on the next page
	Return Loss		≧40dB
Mechanical Characteristics	Engagement and Separation forces	Engagement and separation forces at 50mm/s.	Engagement force ≦ 19.6N Separation force ≦ 19.6N
	Gauge retention force	Zirconia gauge at ϕ2.499 ±0.0005mm.	2.0N to 3.9N
	Durability	500 times	1)Attenuation and return loss shall be satisfied before and after the test. 2)No breakage, crack or looseness on components.
	Flex test	8.82N load, 100 cycles Telcordia GR-910-CORE	
	Twist test	13.23N load, 10 cycles Telcordia GR-910-CORE	
	Side test	12.25 N load, 90° angle Telcordia GR-910-CORE	
	Vibration	Frequency: 10 to 55 Hz, single amplitude of 0.75 mm, 3 hours in each of the 3 axis.	
	Impact test	Acceleration of 981 m/s², 6 ms duration,half sine shock pulse, 3 cycles in each of the 3 axis.	
Environmental Characteristics	Heat/humidity cycles	Humidity : 90% to 96% Temperature : -10℃ to 65℃ Time : 480 hours(20 Cycles)	1)Attenuation and return loss shall be satisfied before and after the test. 2)No breakage, crack or looseness on components.
	Heat cycles	Temperature : -40℃ to +80℃, 100 cycles	
	Dray heat	500 hours at 85℃.	
	Cold	500 hours at -40℃.	
	Salt mist	48 hours in a 5% concentration of salt mist	No significant corrosion.

■Materials

Part	Material
Body	Zinc alloy
Ferrule	Zirconia
Split sleeve	Zirconia



Part Number	CL No.	Attenuation	Attenuation Tolerance	Return Loss	Wavelength	Split Sleeve	Fiber type	Label color
HSC-AT11K-A00	820-6001-6	0dB	±0.4dB	≧40dB	1310nm 1550nm	Zirconia	SM	mauve
HSC-AT11K-A01	820-6002-9	1dB	±0.5dB					
HSC-AT11K-A02	820-6003-1	2dB	±0.5dB					
HSC-AT11K-A03	820-6004-4	3dB	±0.6dB					
HSC-AT11K-A04	820-6005-7	4dB	±0.6dB					
HSC-AT11K-A05	820-6006-0	5dB	±0.6dB					
HSC-AT11K-A06	820-6007-2	6dB	±0.6dB					
HSC-AT11K-A07	820-6013-5	7dB	±0.7dB					
HSC-AT11K-A08	820-6014-8	8dB	±0.8dB					
HSC-AT11K-A09	820-6015-0	9dB	±0.9dB					
HSC-AT11K-A10	820-6008-5	10dB	±1.0dB					
HSC-AT11K-A11	820-6016-3	11dB	±1.1dB					
HSC-AT11K-A12	820-6017-6	12dB	±1.2dB					
HSC-AT11K-A13	820-6018-9	13dB	±1.3dB					
HSC-AT11K-A14	820-6019-1	14dB	±1.4dB					
HSC-AT11K-A15	820-6009-8	15dB	±1.5dB					
HSC-AT11K-A16	820-6020-0	16dB	±1.5dB					
HSC-AT11K-A20	820-6010-7	20dB	±1.5dB					
HSC-AT11K-A25	820-6011-0	25dB	±1.5dB					
HSC-AT11K-A30	820-6012-2	30dB	±2.5dB					

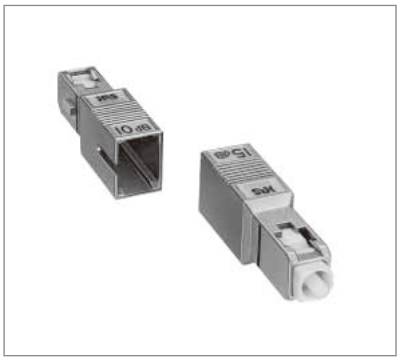
■Product Specifications

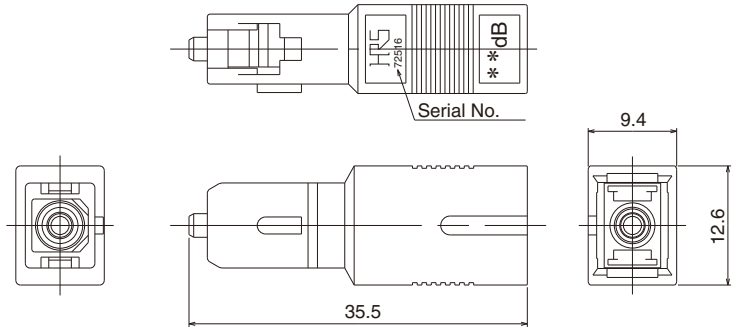
●UPC Polishing type : Return Loss ≧ 50dB
●APC Polishing type : Return Loss ≧ 60dB

Ratings	Operating temperature range	-40°C to +75°C	Storage temperature range	-40°C to +85°C
	Max. Input Power	250mW	Fiber type	SMF

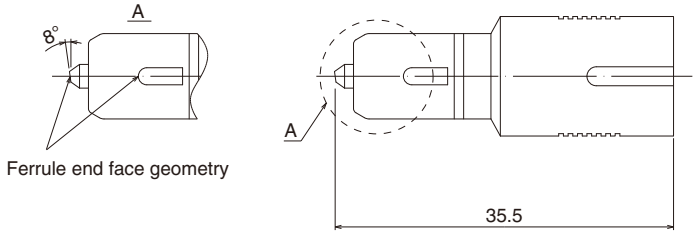
Item		Test Method (Telcordia GR-910-CORE)	Specifications	
	Polishing type		UPC	APC
Optical characteristics	Attenuation	Measurement at a point within wavelength of 1310±30 nm and a point within wavelength of 1550±30 nm.	See the attenuation table on the next page	
	Return Loss		≧50dB	≧60dB
	Input power	Input power : 250mW(LD) Wavelength : 1470nm Time : 100 hours	1)After test, change in attenuation (fluctuation) and return loss shall be as follows. attenuation : ≦0.5dB return loss ≧50dB 2)No distortion, package cracks, hardening or softening of materials, and also no damage to the attenuation element.	
Environmental characteristics	Controlled Operating Environment	Temperature : -5 to 50 ℃ Time : 182.5 hours Humidity : 15 to 90 %		
	Uncontrolled Operating Environment	Temparature : -40 to 75 ℃ Cycles : 21 cycles (8h/cycle)		
	Non-Operating Environment	Low-Temperture Exposure and Thermal Shock Temperature : 23 → –40 → –40 → 23 Time : 2.1h 72h 4min		
		High-Temperture Exposure and Thermal Shock Temperature : 23 → 70 → 70 → 23 Time : 1.6h 72h 5min		
		High Relative Humidity Exposure Temperature : 23 → 40 → 40 → 23 Time : 0.6h 96h 0.6h Humidity : 90 to 95 %		
	Humidity/Condensation Cycling Test	Temperature : -10 to 65 ℃ Humidity : 90 to 100 % Cycles : 14 cycles(12h/cycle)		
	Water Immersion	Temperature : 43 ℃ Time : 168 h Water : PH 5.5		
Mechanical characteristics	Vibration Test	Frequency range : 10 to 55 Hz Amplitude : 1.52mm Time : 2 hours in each 3 axis		
	Side Pull Load	Angle : 90 ° Load : 12.25 N	1)During, after test, change in attenuation (fluctuation) and return loss shall be as follows. attenuation : ≦0.5dB return loss ≧50dB 2)No distortion, package cracks, hardening or softening of materials, and also no damage to the attenuation element.	
	Cable Retention	Load : 19.6N	1)After test, change in attenuation (fluctuation) and return loss shall be as follows. attenuation : ≦0.5dB return loss ≧50dB 2)No distortion, package cracks, hardening or softening of materials, and also no damage to the attenuation element.	
	Durability	200 times		
	Impact Test	Drop the tested components from 1.8 m hight to the concrete floor. 8 times in each 3 axis		

Note) APC polishing type isn't compatible with UPC polishing type.





(APC Polishing type)



Ferrule end face geometry

UPC Polishing type： Return Loss ≧ 50dB

Part Number	CL No.	Attenuation	Attenuation Tolerance	Return Loss	Wavelength	Split Sleeve	Fiber type	Label color
HSC-AT11U-A00	820-9500-2	0dB	+0.4dB	≧50dB	1310nm 1550nm	Zirconia	SM	Dark blue
HSC-AT11U-A01	820-9501-5	1dB	±0.5dB					
HSC-AT11U-A02	820-9502-8	2dB	±0.5dB					
HSC-AT11U-A03	820-9503-0	3dB	±0.6dB					
HSC-AT11U-A04	820-9504-3	4dB	±0.6dB					
HSC-AT11U-A05	820-9505-6	5dB	±0.6dB					
HSC-AT11U-A06	820-9506-9	6dB	±0.6dB					
HSC-AT11U-A07	820-9507-1	7dB	±0.7dB					
HSC-AT11U-A08	820-9508-4	8dB	±0.8dB					
HSC-AT11U-A09	820-9509-7	9dB	±0.9dB					
HSC-AT11U-A10	820-9510-6	10dB	±1.0dB					
HSC-AT11U-A11	820-9511-9	11dB	±1.1dB					
HSC-AT11U-A12	820-9512-1	12dB	±1.2dB					
HSC-AT11U-A13	820-9513-4	13dB	±1.3dB					
HSC-AT11U-A14	820-9514-7	14dB	±1.4dB					
HSC-AT11U-A15	820-9515-0	15dB	±1.5dB					
HSC-AT11U-A16	820-9516-2	16dB	±1.5dB					
HSC-AT11U-A20	820-9517-5	20dB	±1.5dB					
HSC-AT11U-A25	820-9518-8	25dB	±1.5dB					
HSC-AT11U-A30	820-9519-0	30dB	±2.5dB					

APC Polishing type： Return Loss ≧ 60dB

Part Number	CL No.	Attenuation	Attenuation Tolerance	Return Loss	Wavelength	Split Sleeve	Fiber type	Label color
HSC-AT11CS-A01	820-9001-2	1dB	+0.8dB	≧60dB	1310nm 1550nm	Zirconia	SM	Green
HSC-AT11CS-A02	820-9002-5	2dB	±0.8dB					
HSC-AT11CS-A03	820-9003-8	3dB	±0.8dB					
HSC-AT11CS-A04	820-9004-0	4dB	±0.8dB					
HSC-AT11CS-A05	820-9005-3	5dB	±0.8dB					
HSC-AT11CS-A06	820-9006-6	6dB	±0.8dB					
HSC-AT11CS-A07	820-9007-9	7dB	±0.8dB					
HSC-AT11CS-A08	820-9008-1	8dB	±0.8dB					
HSC-AT11CS-A09	820-9009-4	9dB	±0.9dB					
HSC-AT11CS-A10	820-9010-3	10dB	±1.0dB					
HSC-AT11CS-A11	820-9011-6	11dB	±1.1dB					
HSC-AT11CS-A12	820-9012-9	12dB	±1.2dB					
HSC-AT11CS-A13	820-9013-1	13dB	±1.3dB					
HSC-AT11CS-A14	820-9014-4	14dB	±1.4dB					
HSC-AT11CS-A15	820-9015-7	15dB	±1.5dB					
HSC-AT11CS-A16	820-9016-0	16dB	±1.5dB					
HSC-AT11CS-A20	820-9017-2	20dB	±1.5dB					
HSC-AT11CS-A25	820-9018-5	25dB	±1.5dB					
HSC-AT11CS-A30	820-9019-8	30dB	±2.5dB					

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