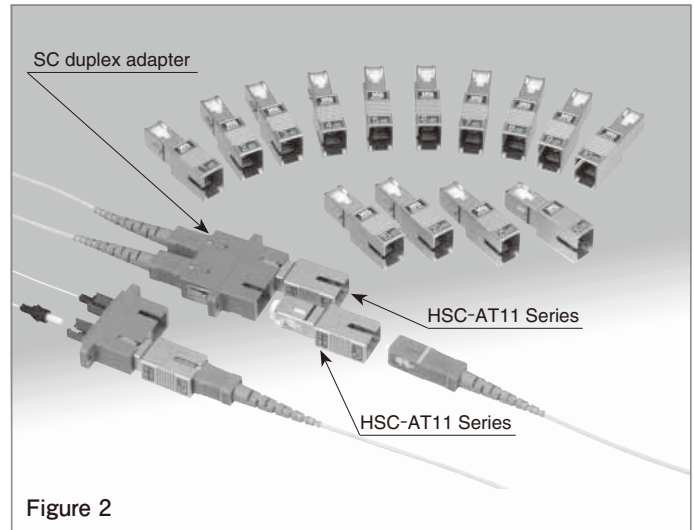
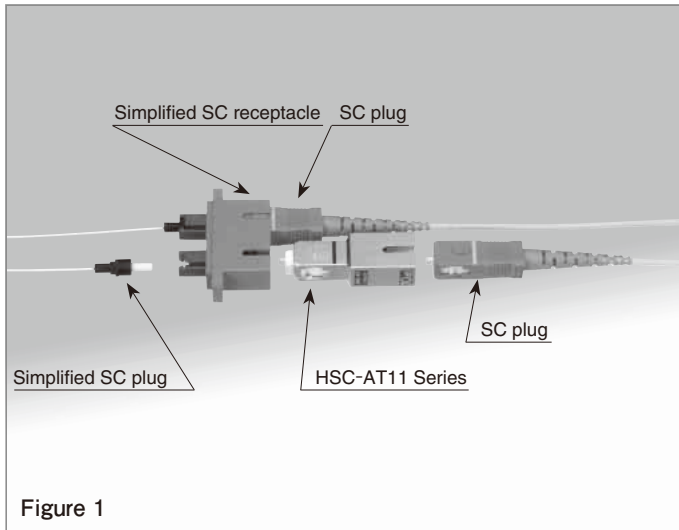


SC Type Fixed Attenuators (for single mode)

HSC-AT11 Series



■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

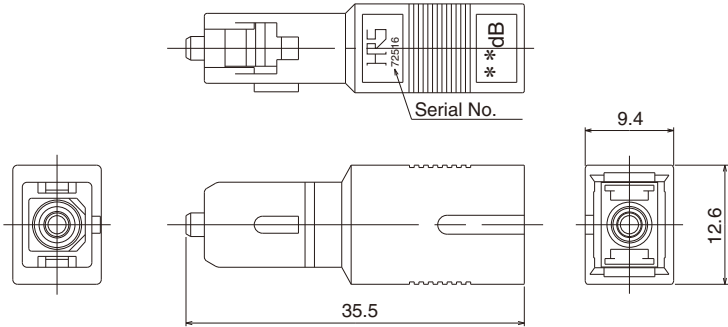
AdPC (Advanced PC) Polishing type: Return Loss ≥ 40 dB

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 $\pm$ 30 nm and a point within wavelength of 1550 $\pm$ 30 nm.	See the attenuation table on the next page
	Return Loss		≥ 40 dB
Mechanical Characteristics	Engagement and Separation forces	Engagement and separation forces at 50mm/s.	Engagement force ≤ 19.6 N Separation force ≤ 19.6 N
	Gauge retention force	Zirconia gauge at $\phi 2.499 \pm 0.0005$ mm.	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/s ² , 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°C to 65°C 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°C to +80°C, 100 cycles	
	Dray heat	500 hours at 85°C.	
	Cold	500 hours at -40°C.	
	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

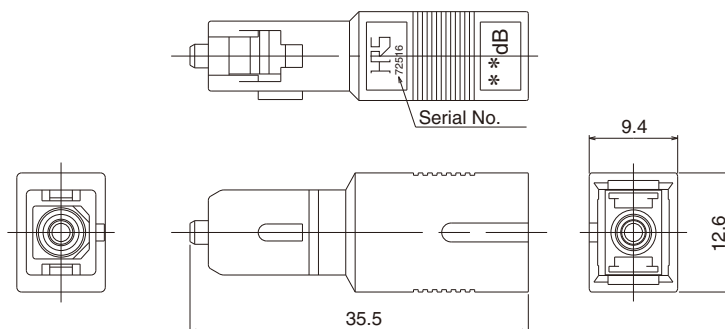
●UPC Polishing type : Return Loss $\geq$ 50dB

●APC Polishing type : Return Loss $\geq$ 60dB

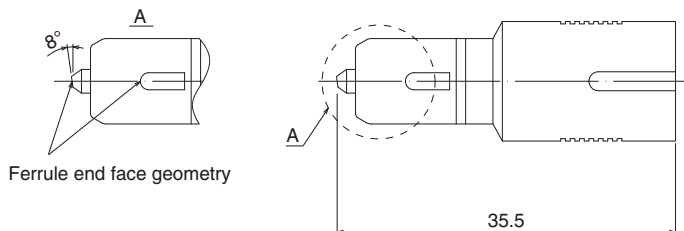
Ratings	Operating temperature range	-40°C to +75°C	Storage temperature range	-40°C to +85°C
	Max. Input Power	250mW	Fiber type	SMF

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		$\geq$ 50dB	$\geq$ 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 : $\leq$ 0.5dB return loss $\geq$ 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 °C Time : 182.5 hours Humidity : 15 to 90 %		
	Uncontrolled Operating Environment	Temperature : -40 to 75 °C Cycles : 21 cycles (8h/cycle)		
	Non-Operating Environment	Low-Temperature Exposure and Thermal Shock Temperature : 23 → -40 → -40 → 23 Time : 2.1h 72h 4min		
		High-Temperature 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 °C Humidity : 90 to 100 % Cycles : 14 cycles(12h/cycle)		
	Water Immersion	Temperature : 43 °C 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	1)During, after test, change in attenuation (fluctuation) and return loss shall be as follows. attenuation : $\leq$ 0.5dB return loss $\geq$ 50dB 2)No distortion, package cracks, hardening or softening of materials, and also no damage to the attenuation element.	
	Side Pull Load	Angle : 90 ° Load : 12.25 N		
	Cable Retention	Load : 19.6N	1)After test, change in attenuation (fluctuation) and return loss shall be as follows. attenuation : $\leq$ 0.5dB return loss $\geq$ 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 high to the concrete floor. 8 times in each 3 axis		

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



(APC Polishing type)

UPC Polishing type : Return Loss ≥ 50 dB

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	≥ 50 dB	1310nm 1550nm	Zirconia	SM	Dark blue
HSC-AT11U-A01	820-9501-5	1dB	± 0.5 dB					
HSC-AT11U-A02	820-9502-8	2dB	± 0.5 dB					
HSC-AT11U-A03	820-9503-0	3dB	± 0.6 dB					
HSC-AT11U-A04	820-9504-3	4dB	± 0.6 dB					
HSC-AT11U-A05	820-9505-6	5dB	± 0.6 dB					
HSC-AT11U-A06	820-9506-9	6dB	± 0.6 dB					
HSC-AT11U-A07	820-9507-1	7dB	± 0.7 dB					
HSC-AT11U-A08	820-9508-4	8dB	± 0.8 dB					
HSC-AT11U-A09	820-9509-7	9dB	± 0.9 dB					
HSC-AT11U-A10	820-9510-6	10dB	± 1.0 dB					
HSC-AT11U-A11	820-9511-9	11dB	± 1.1 dB					
HSC-AT11U-A12	820-9512-1	12dB	± 1.2 dB					
HSC-AT11U-A13	820-9513-4	13dB	± 1.3 dB					
HSC-AT11U-A14	820-9514-7	14dB	± 1.4 dB					
HSC-AT11U-A15	820-9515-0	15dB	± 1.5 dB					
HSC-AT11U-A16	820-9516-2	16dB	± 1.5 dB					
HSC-AT11U-A20	820-9517-5	20dB	± 1.5 dB					
HSC-AT11U-A25	820-9518-8	25dB	± 1.5 dB					
HSC-AT11U-A30	820-9519-0	30dB	± 2.5 dB					

APC Polishing type : Return Loss ≥ 60 dB

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	≥ 60 dB	1310nm 1550nm	Zirconia	SM	Green
HSC-AT11CS-A02	820-9002-5	2dB	± 0.8 dB					
HSC-AT11CS-A03	820-9003-8	3dB	± 0.8 dB					
HSC-AT11CS-A04	820-9004-0	4dB	± 0.8 dB					
HSC-AT11CS-A05	820-9005-3	5dB	± 0.8 dB					
HSC-AT11CS-A06	820-9006-6	6dB	± 0.8 dB					
HSC-AT11CS-A07	820-9007-9	7dB	± 0.8 dB					
HSC-AT11CS-A08	820-9008-1	8dB	± 0.8 dB					
HSC-AT11CS-A09	820-9009-4	9dB	± 0.9 dB					
HSC-AT11CS-A10	820-9010-3	10dB	± 1.0 dB					
HSC-AT11CS-A11	820-9011-6	11dB	± 1.1 dB					
HSC-AT11CS-A12	820-9012-9	12dB	± 1.2 dB					
HSC-AT11CS-A13	820-9013-1	13dB	± 1.3 dB					
HSC-AT11CS-A14	820-9014-4	14dB	± 1.4 dB					
HSC-AT11CS-A15	820-9015-7	15dB	± 1.5 dB					
HSC-AT11CS-A16	820-9016-0	16dB	± 1.5 dB					
HSC-AT11CS-A20	820-9017-2	20dB	± 1.5 dB					
HSC-AT11CS-A25	820-9018-5	25dB	± 1.5 dB					
HSC-AT11CS-A30	820-9019-8	30dB	± 2.5 dB					