

Optical Components

BRJ Series

For Semiconductor Laser Diode Module Optical Isolators

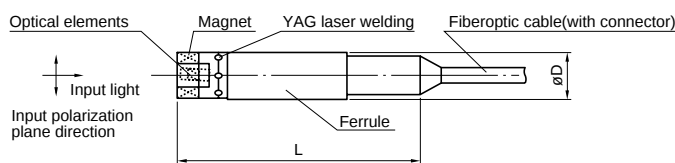
PIGTAILED TYPE

FEATURES

- Ultra-compact pigtail-type optical isolator features an industry-standard ferrule diameter of $\varnothing 2\text{mm}$ or $\varnothing 2.5\text{mm}$.
- This product helps miniaturize laser diode modules, minimizes the need for optical axis adjustments, simplifies assembly procedures, and thereby reduces manufacturing costs.



SHAPES AND DIMENSIONS



Part No.	ØD(mm)	L(mm)
BRJ2014FP□	2	14
BRJ2514FP□	2.5	14

CHARACTERISTICS

Part No.	Center wavelength(nm)*1	Polarizer	Insertion loss(dB)		Isolation(dB)min. at 25°C*2/at -40 to +85°C*3
			max.	typ.	
BRJ2514FPB BRJ2014FPB	1310	Polarizing glass	0.35	0.15	33/22
BRJ2514FPD BRJ2014FPD	1480	Polarizing glass	0.4	0.2	33/22
BRJ2514FPC BRJ2014FPC	1550	Polarizing glass	0.45	0.25	33/22
BRJ2514FPE BRJ2014FPE	1620	Polarizing glass	0.5	0.3	33/22

Faraday rotator	Bi-substituted garnet
Optical fiber end angle	0° to 8°
Element angle	0° to 6°
Fiberoptic cable	Single mode/Ø0.9mm or Ø0.25mm/L:1m*4
Optical connector	FC, SC, ST, LC *5
Operating temperature range	-40 to +85°C
Storage temperature range	-40 to +85°C

*1 TDK's standard specification. Please consult us for custom orders.

*2 At center wavelength and 25°C.

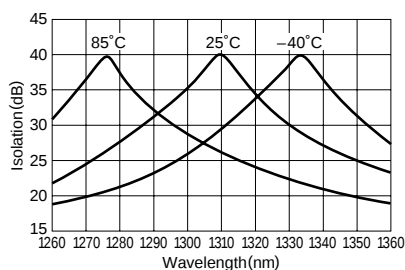
*3 At center wavelength $\pm 10\text{nm}$ and -40 to +85°C.

*4 The length of fiberoptic cable can be altered as required.

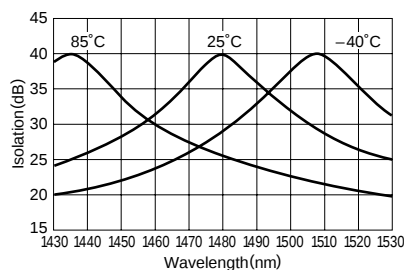
*5 Other connector types are available.

ISOLATION TEMPERATURE CHARACTERISTICS

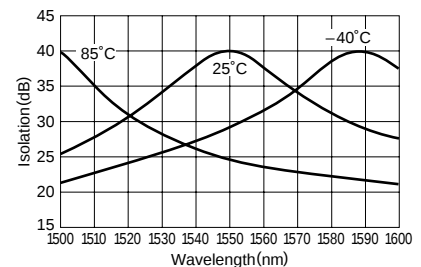
CENTER WAVELENGTH:1310nm



CENTER WAVELENGTH:1480nm



CENTER WAVELENGTH:1550nm



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For Semiconductor Laser Diode Module

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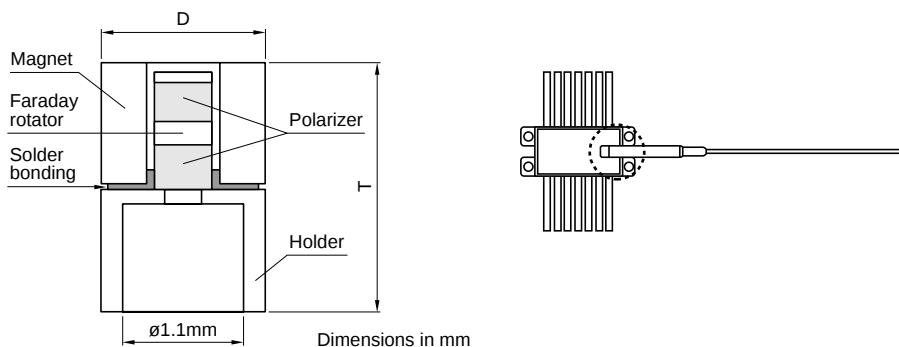
FERRULE MOUNTABLE TYPE

FEATURES

- These exceptionally small and lightweight optical isolators provide the added benefit of superb performance stability.
- Operating characteristics remain virtually unchanged throughout the most stringent reliability tests (involving high / low temperature cycling, high temperature plus high humidity, and resistance to thermal shock, mechanical shock, and vibration).



SHAPES AND DIMENSIONS



CHARACTERISTICS

Part No.	Center wavelength (nm)*1	Polarizer	Insertion loss(dB)		Isolation(dB)min. at 25°C*2/at -40 to +85°C*3	Dimensions(mm)	
			max.	typ.		D	T
BRJ1829SPB	1310	Polarizing glass	0.35	0.15	33	1.8	2.9
BRJ1829SPD	1480	Polarizing glass	0.40	0.20	33	1.8	2.9
BRJ1829SPC	1550	Polarizing glass	0.45	0.25	33	1.8	2.9
BRJ1829SPE	1620	Polarizing glass	0.50	0.30	33	1.8	2.9
BRJ2230SPB	1310	Polarizing glass	0.35	0.15	33	2.2	3.0
BRJ2230SPD	1480	Polarizing glass	0.40	0.20	33	2.2	3.0
BRJ2230SPC	1550	Polarizing glass	0.45	0.25	33	2.2	3.0
BRJ2230SPE	1620	Polarizing glass	0.50	0.30	33	2.2	3.0

Faraday rotator	Bi-substituted garnet
Operating temperature range	-40 to +85°C
Storage temperature range	-40 to +85°C

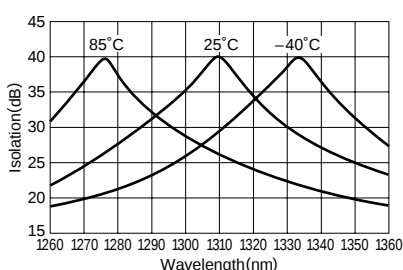
*1 TDK's standard specification. Please consult us for custom orders.

*2 At center wavelength and 25°C.

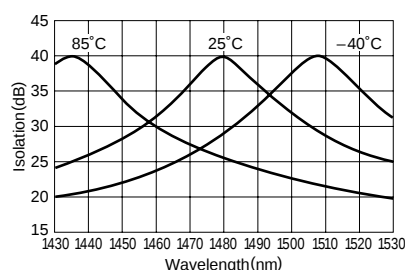
*3 At center wavelength ± 10 nm and -40°C to +85°C.

ISOLATION TEMPERATURE CHARACTERISTICS

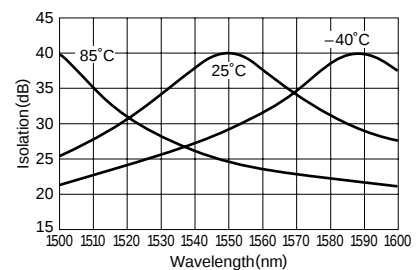
CENTER WAVELENGTH:1310nm



CENTER WAVELENGTH:1480nm



CENTER WAVELENGTH:1550nm



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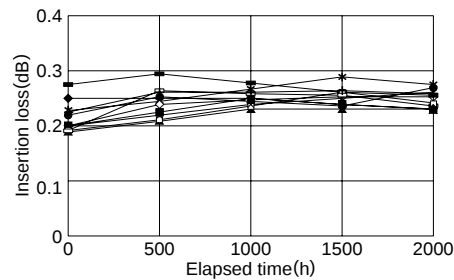
RELIABILITY TEST DATA

PART No. :BRJ2514FPC(BRJ2014FPC, BRJ1829SPC, BRJ2230SPC)/NUMBER OF SAMPLES:11

INSERTION LOSS CHARACTERISTICS

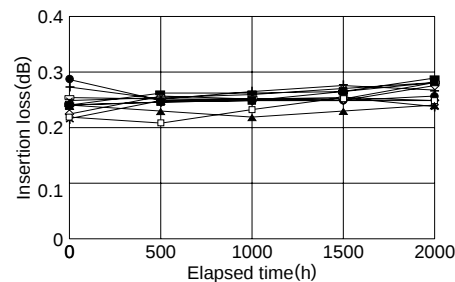
HIGH TEMPERATURE STORAGE TEST

Ambient temperature test condition: +85°C



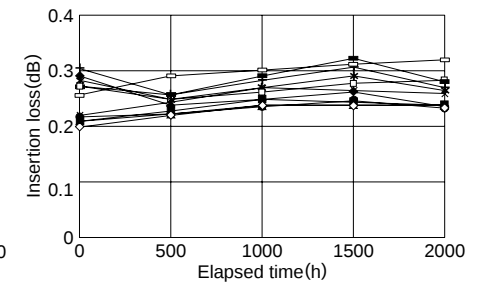
LOW TEMPERATURE STORAGE TEST

Ambient temperature test condition: -40°C



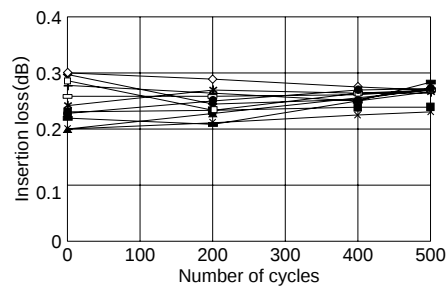
DAMP HEAT TEST

Ambient temperature / humidity test condition: +85°C • 85(%)RH



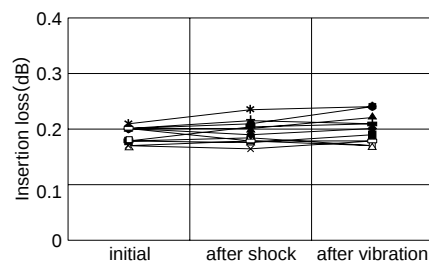
THERMAL SHOCK TEST

One cycle: -40°C • 30min/+85°C • 30min



MECHANICAL SHOCK AND VIBRATION TEST

See test conditions at right.



Test Conditions

Shock Test: MIL-STD-883(Method 2002)

Test Condition B, 14700m/s², 0.5ms, 5 times/axis

Vibration Test: MIL-STD-883(Method 2007)

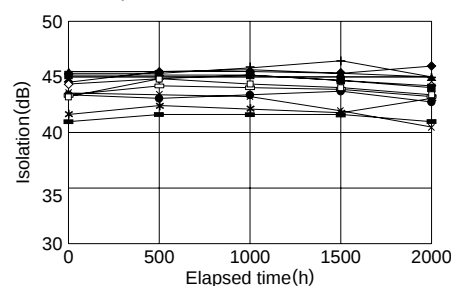
Test Condition A, 196m/s², 20 to 2000Hz,

4 min/cycle, 4 cycles/axis

ISOLATION CHARACTERISTICS

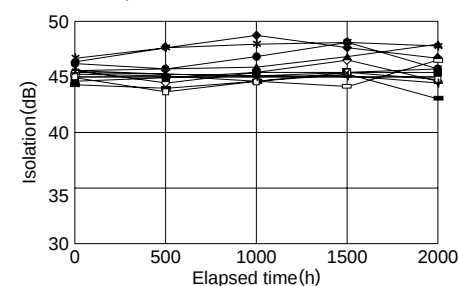
HIGH TEMPERATURE STORAGE TEST

Ambient temperature test condition: +85°C



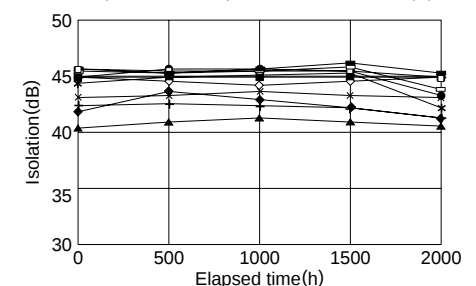
LOW TEMPERATURE STORAGE TEST

Ambient temperature test condition: -40°C



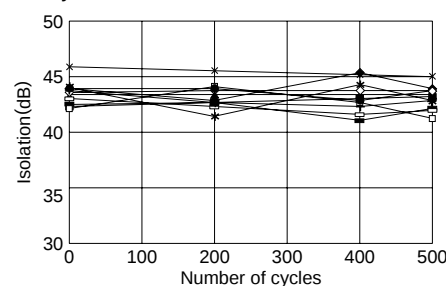
DAMP HEAT TEST

Ambient temperature / humidity test condition: +85°C • 85(%)RH



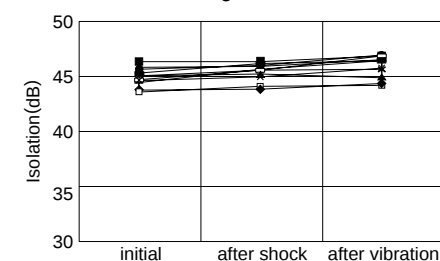
THERMAL SHOCK TEST

One cycle: -40°C • 30min/+85°C • 30min



MECHANICAL SHOCK AND VIBRATION TEST

See test conditions at right.



Test Conditions

Shock Test: MIL-STD-883(Method 2002)

Test Condition B, 14700m/s², 0.5ms, 5 times/axis

Vibration Test: MIL-STD-883(Method 2007)

Test Condition A, 196m/s², 20 to 2000Hz,

4 min/cycle, 4 cycles/axis