KUNMING

ELECTRONICS CO., LTD, ***SPECIFICATION***

TITLE	SPC. NO.	PAGE： 1 OF 10
8.5mm Height Vertical Optical	KM15010	DATE： 2011.06.24

SPECIFICATION

1. Standard atmospheric condition：

Unless otherwise specified, the standard range of atmospheric conditions for making measurements and tests are as follows：

Ambient temperature：5℃ to 35℃

Relative humidity ：45% to 85%

Air pressure ：86kPa to 106kPa

If there is any doubt about the results, measurements shall be made within the following limits：

Ambient temperature：20±2℃

Relative humidity：60% to 70%

Air pressure：86kPa to 106kPa

Operating temperature range：－20℃ to 70℃

Storage temperature：－30℃ to 80℃

Humidity range：85%RH MAX.

Supply voltage of optical receiving unit ：-0.5 to 7V MAX

ISSUE	DATE	WRTN	CHKD	APVD	DESCRIPTIONS
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【2.PERFORMANCE】

2-1. KM15010 Series Electrical Performance

	Item	Condition	Requirement / Specifications
2-1-1	Rated voltage/ Rated Current		DC 3V

2-2. KM15010 Series Electro-Optical Characteristics

Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Operating Voltage	Vcc	—	2.7	—	5.5	V
Peak Detective Wavelength	λp	—	640	—	670	nm
Transmission Speed		NRZ signal	—	—	16	Mbps
Transmission Distance		Using APF*	0.2	—	20	m
Pulse Width Distortion	△tw	16Mbps NRZ Signal	-25	—	25	ns
Fiber Coupling Light Output	Pf	*1	-21	-17	-15	dBm
Dissipation Current	Icc	*2	—	5	10	mA
High Level Output Voltage	V_{IH}		2	—	—	V
Low Level Output Voltage	V_{IL}		—	—	0.8	V
Rise Time	t_r	*3	—	30	40	ns
Fall Time	t_f	*3	—	20	30	ns
Low→High propagation delay time	t_{PLH}	*3	—	—	100	ns
High→Low propagation delay time	t_{PHL}	*3	—	—	100	ns
Jitter time	△tj	*3	—	1.5	15	ns

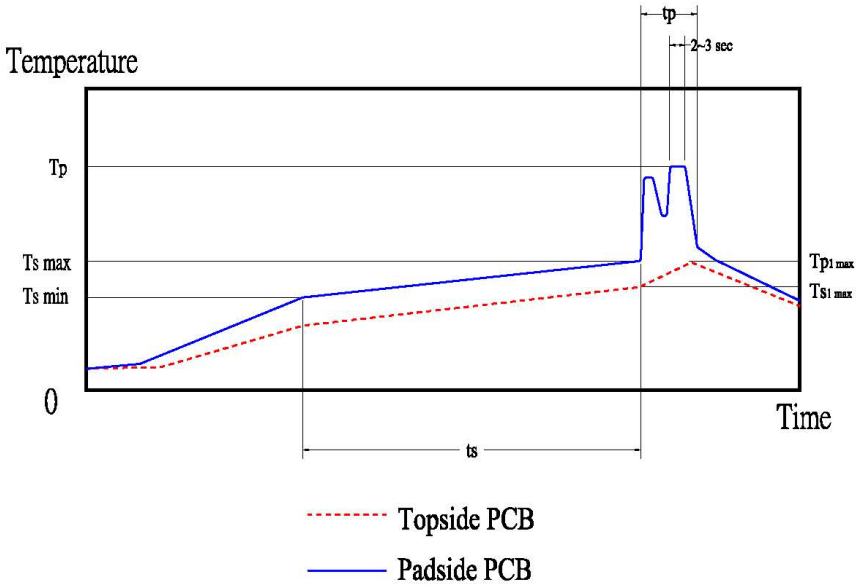
- Light Input after APF should satisfy Pi range
- Icc (dissipation current) : CURRENT ATTENUATE DIFFERENCE < 20%
- Pf（fiber coupling light output）：BRIGHTNESS ATTENUATE DIFFERENCE<20%
- TPLH (propagation L→H delay time): DELAY TIME DIFFERENCE < 20%
- TPHL (propagation H→L delay time): DELAY TIME DIFFERENCE < 20%
- Tr (rise time): TIME DIFFERENCE <20%
- Tf (fall time): TIME DIFFERENCE <20%

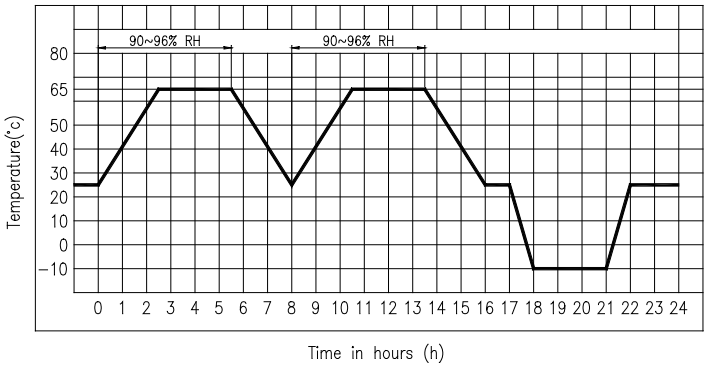
2-3. KM15010 Series Mechanical Performance

	Item	Test Condition	Requirement / Specifications
2-3-1	Operating Force	Insertion Force	4N~40N（0.4Kgf~4Kgf）
		Withdrawal Force	4N~40N（0.4Kgf~4Kgf）

2-4. KM15010 Series Endurance characteristics

	Item	Test Condition	Requirement / Specifications
2-4-1	Operating Endurance	The life test shall consist of 500 cycles of insertion and withdrawal with gauge plug.	Electro-Optical and mechanical Performance shall be satisfied.
2-4-2	Humidity Test	Temperature：40℃±2℃ Relative humidity：90% for 96 hours. Upon completion of the exposure, dewdrops shall be blown out and removed from the testing jack. Then the testing jack shall be left alone for 30 minutes in a room ambient, before measurement shall be made.	Mechanical Performance and Electro-Optical characteristics shall be satisfied.
2-4-3	Dry Heat	The pin jack shall be subjected to temperature of 70℃±2℃ for a period of 96 hours, then shall be allowed to remain in room ambient conditions for 30 minutes.	Mechanical Performance and Electro-Optical characteristics shall be satisfied.
2-4-4	Cold	The pin jack shall be subjected to temperature of -25℃±3℃ for a period of 96 hours, then shall be allowed to remain in room ambient conditions for 30 minutes.	Mechanical Performance and Electro-Optical characteristics shall be satisfied.
2-4-5	Solder Test	Temperature of solder：250℃±5℃ Time of dip：3±0.5 seconds Length of dip：2±0.5mm （from top of terminal）	The soldered area shall be covered a minimum of 90% of surface being immersed.
2-4-6	Salt Spray Test	The pin jack shall be subjected continuously to a fine mist of salt solution at a temperature of 35℃±2℃ for 48 hours.（Salt solution concentration：5±1% by weight）.Then it shall be subjected to standard atmospheric condition for 16 hours. As depend on above request make that have three times test more. After removing the salt deposits, the pin jack's appearance shall be checked.	Electro-Optical and mechanical Performance shall be satisfied. The jack shall not show remarkable failure.

<table>
<tr><th></th><th>Item</th><th colspan="3">Condition</th><th>Specifications</th></tr>
<tr><td rowspan="8">2-4-7</td><td rowspan="8">Resistance to Soldering Heat Test</td><td colspan="3">Wave soldering Process</td><td rowspan="5">Electro-Optical and mechanical Performance shall be satisfied, and not show remarkable failure.</td></tr>
<tr><td rowspan="2">Profile Feature</td><td colspan="2">Pb-Free Assembly</td></tr>
<tr><td>Topside PCB</td><td>Padside PCB</td></tr>
<tr><td>Preheat
-Temperature min
-Temperature max
-Time (ts min to max)</td><td>120℃
(Ts1 max)</td><td>110℃
(Ts min)
150℃
(Ts max)
75 sec</td></tr>
<tr><td>Peak/Classification Temperature</td><td>165℃ (Tp1)</td><td>260℃ ±5℃
(Tp)</td></tr>
<tr><td>Time within 5℃ of actual Temperature (tp)</td><td></td><td>10 sec (within 2 times every time 2-3 sec)</td></tr>
<tr><td>Time 25℃ to Peak temperature</td><td></td><td>3 minutes max</td></tr>
<tr><td colspan="4">Wave Soldering Temperature Profile are as below
 
</td></tr>
<tr><td colspan="3">Soldering Iron Test
Temperature of soldering Iron：380±10℃
Soldering time：3±1 seconds</td><td>Same as Wave soldering Process</td></tr>
<tr><td rowspan="2">Optical Receiver Unit</td><td>Insertion force：</td><td>4N～40N（0.4Kgf～4Kgf）</td></tr>
<tr><td>Withdrawal force：</td><td>4N～40N（0.4Kgf～4Kgf）</td></tr>
</table>

2-4-8	**Composite temperature / humidity cyclic test**	**The jack shall be subjected to 4 cycles. Then jack shall be stored at standard atmospheric conditions for 24 hours for recovery, after which measurement shall be made.**	**Dimensional requirements shall be satisfied. Electro-Optical and mechanical Performance shall be satisfied.**
		 **（4 cycles）**	

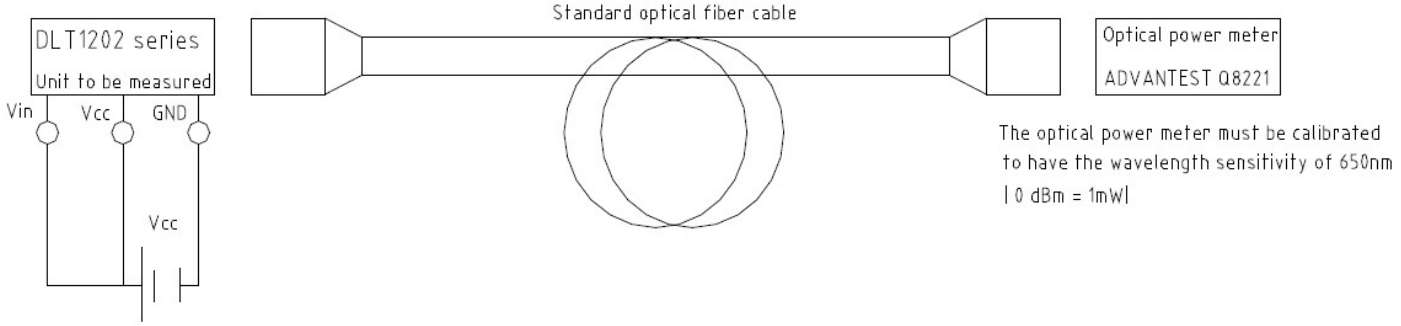
3. Amendment：

When the amendment of this specification comes into necessity, it shall be made by the mutual consultation and agreement between manufacturer and customer.

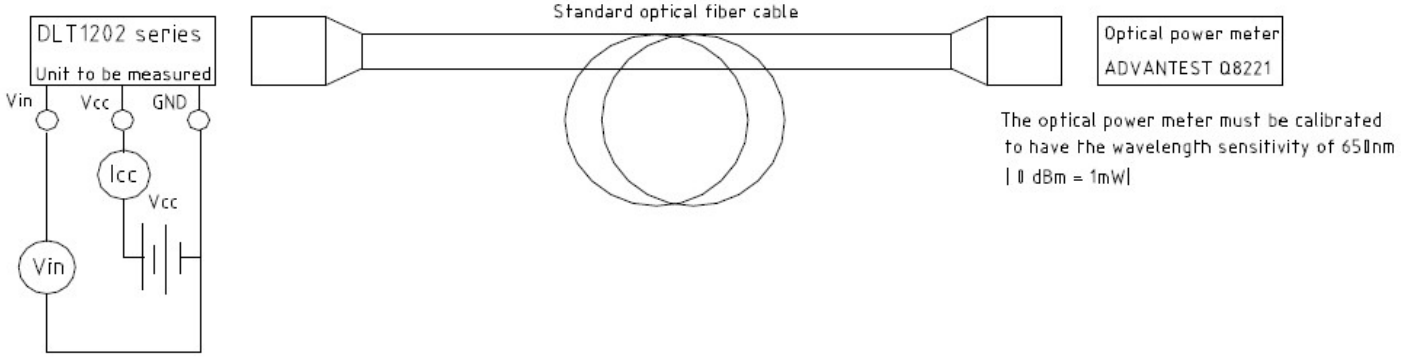
4. Preheat time：1 minute MAX.

5. Optical receiving unit measuring method

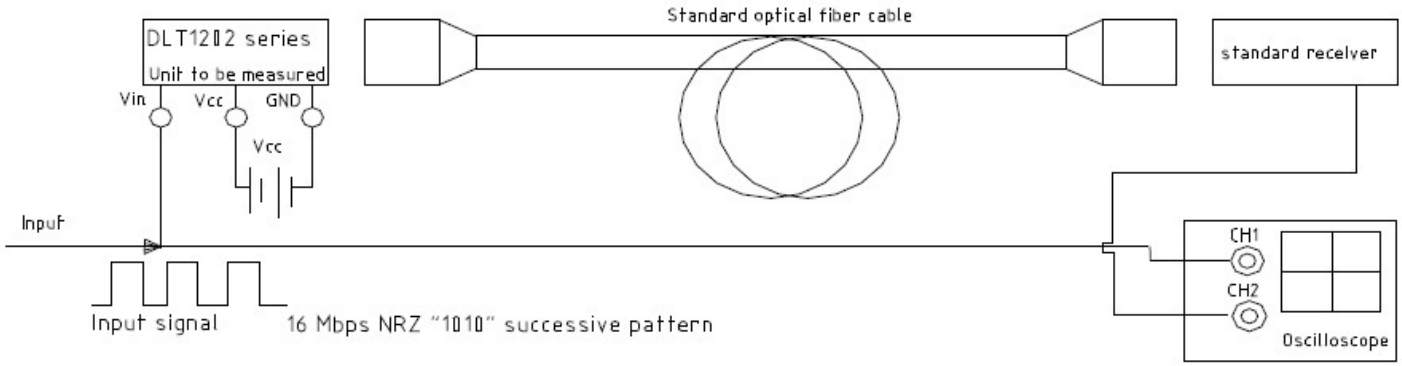
5.1 Measuring method of optical output coupling fiber.



5.2 Input voltage / power dissipation measuring method

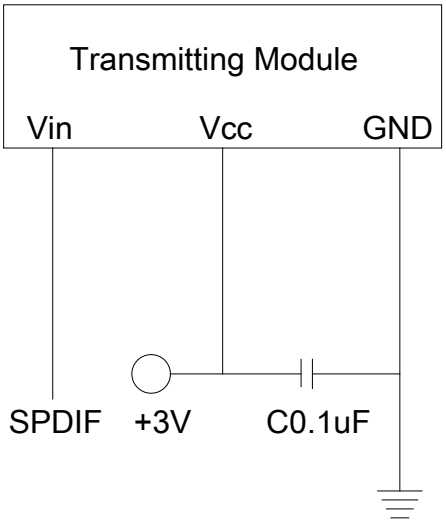


5.3 Pulse response and jitter measuring method.



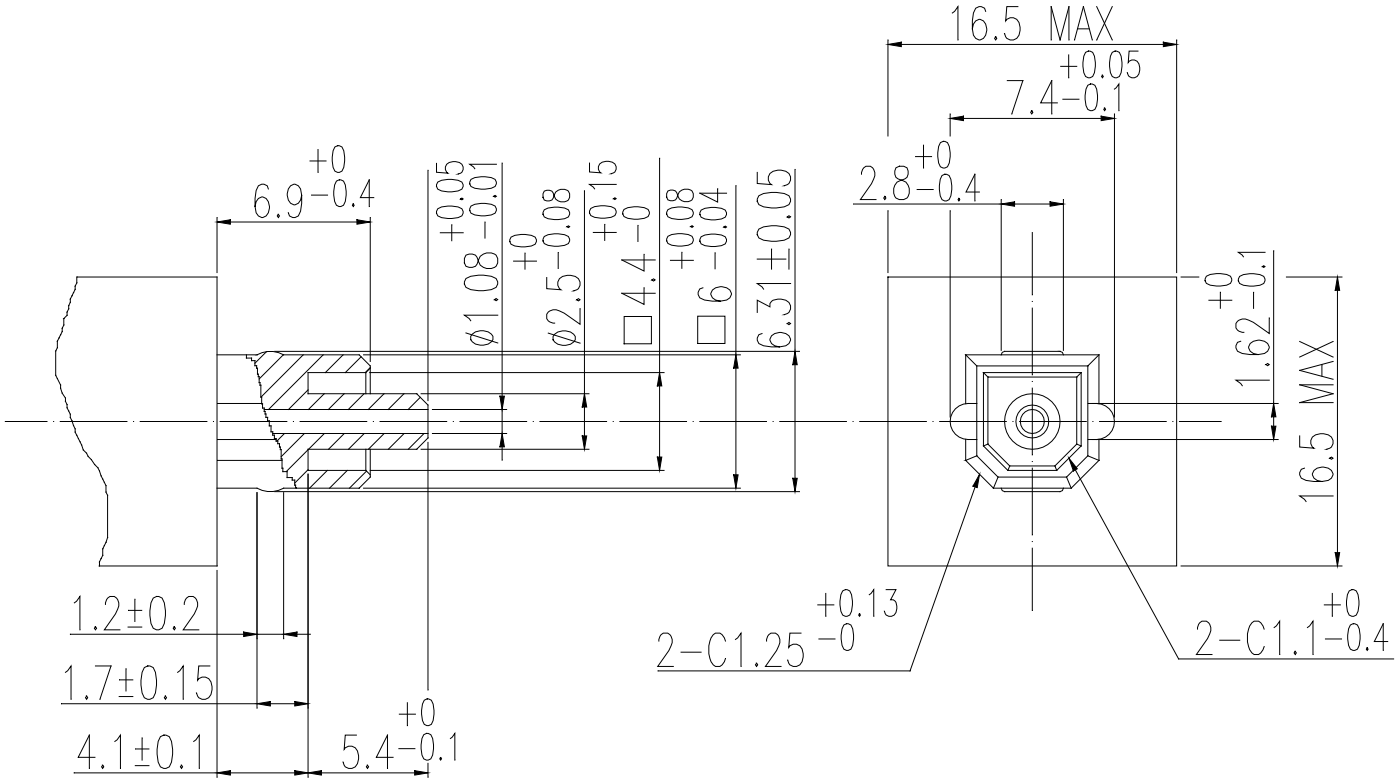
6. Precautions for Using Method

1. Connect a by –pass capacitor (0.1uF) close to the KM15010 with 7 mm of the unit lead frame.
2. Take proper electrostatic-discharge (ESD) precautions while handling these devices. These devices are sensitive to ESD.

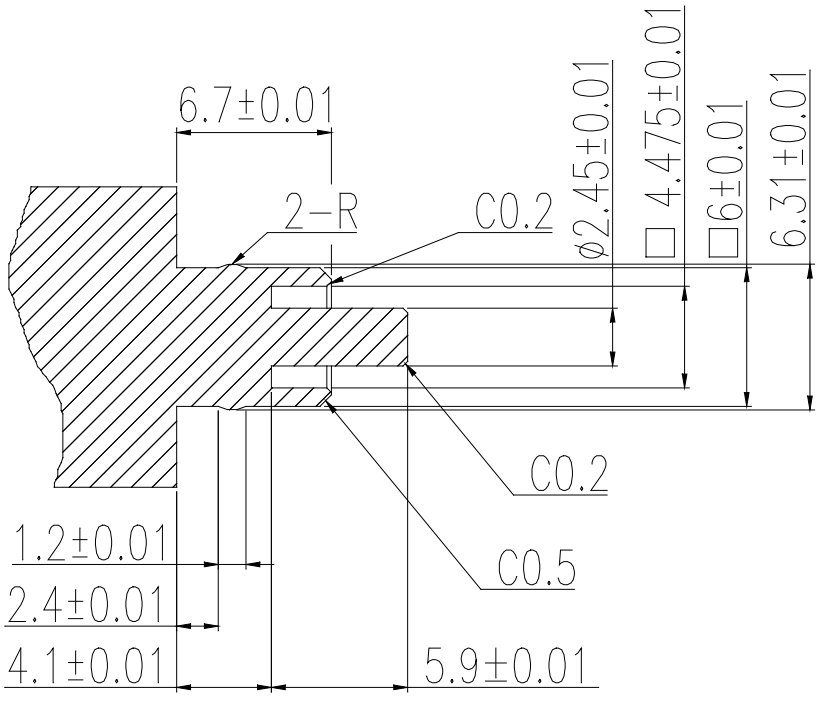


7. Optical connector

Gauge plug EIAJ RC-5720B Rectangular type plug(Unit：mm)



Standard dimension plug(Unit：mm)



8. Soldering condition shelf life about 6 months depend on storage condition of humidity, temperature and others factors.

9. Endurance test sequence：

Test Item / Test sequence / Test group		A	B	C	D	E	F	G	H		
2-3-1	Operating Force	1,3	1,3	1,3	1,3	1,3	1,3	1	1,3		
2-4-1	Operating Endurance	2									
2-4-2	Humidity Test		2								
2-4-3	Dry Heat			2							
2-4-4	Cold				2						
2-4-5	Solder Test					2					
2-4-6	Salt Spray Test						2				
2-4-7	Resistance to Soldering Heat Test							2			
2-4-8	Composite temperature / Humidity cyclic test								2		

Test sample quality：2 pcs min. / group