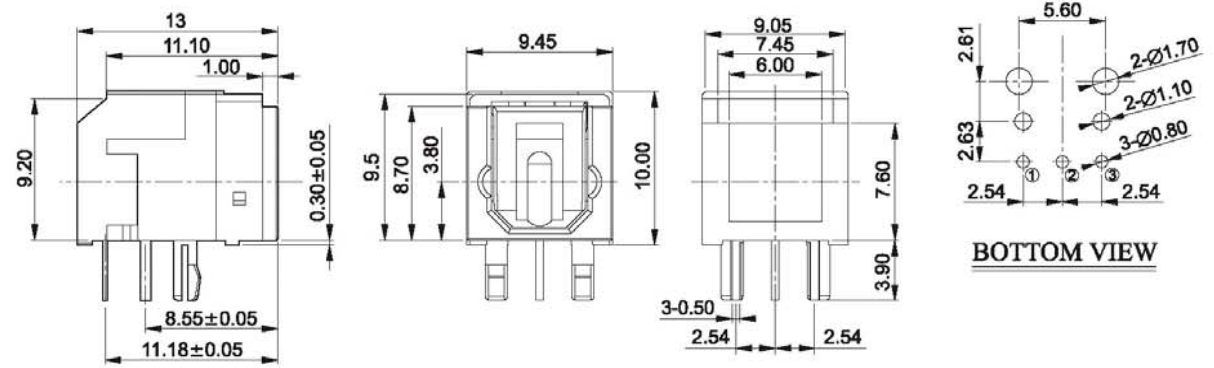


ISS.	AMEND	DATE



	PART NUMBER	TYPE	PIN OUT		
			1	2	3
Receiver	FC684208R	ORJ-8	V cc	GND	V out
Transmitter	FC684208T	OTJ-8	V in	V cc	GND

**RoHS**  
COMPLIANT

TOLERANCE  
 NO DEC. PLACE ±  
 1 DEC. PLACE ±  
 2 DEC. PLACE ±  
 HOLE Ø ±  
 ANGLES ±  
 UNLESS OTHERWISE STATED

**Cliff Electronic Components Ltd.**  
 76 Holmethorpe Avenue, Holmethorpe Industrial Estate,  
 Redhill, Surrey, RH1 2PF, England, UK  
 Tel: 01737-771375 Fax: 01737-766012 Website: www.cliffuk.co.uk

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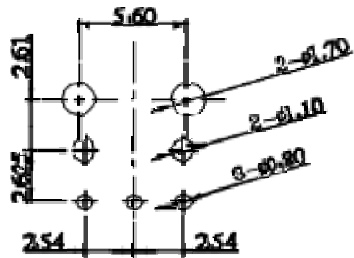
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3rd ANGLE PROJECTION:

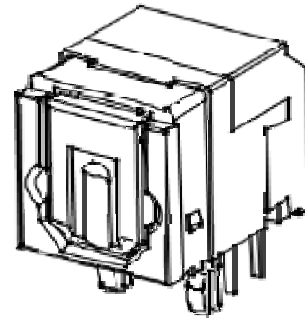
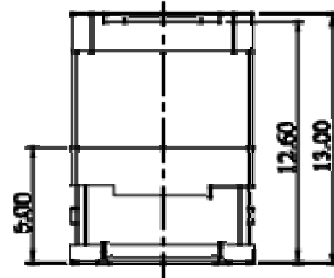
DO NOT SCALE

MATERIAL: \_\_\_\_\_  
 FINISH: \_\_\_\_\_  
 DRAWN: \_\_\_\_\_ APPROVED: \_\_\_\_\_

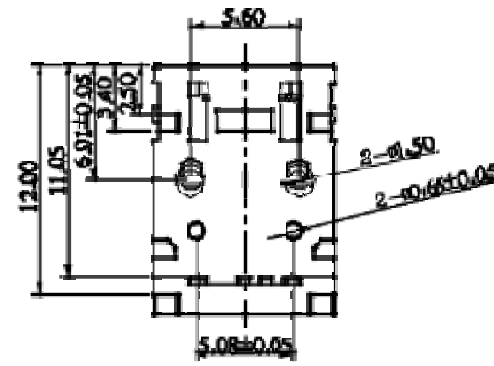
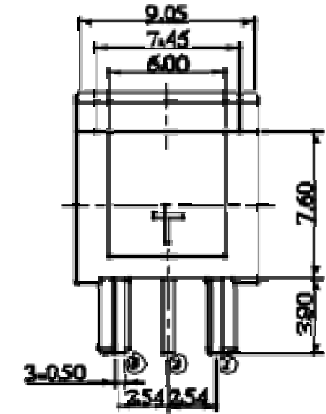
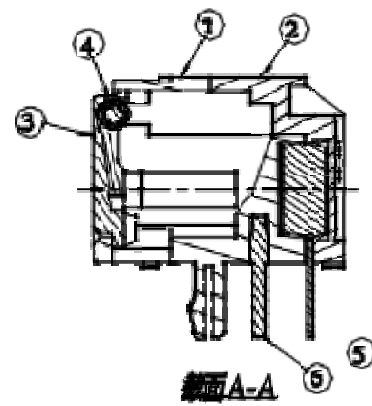
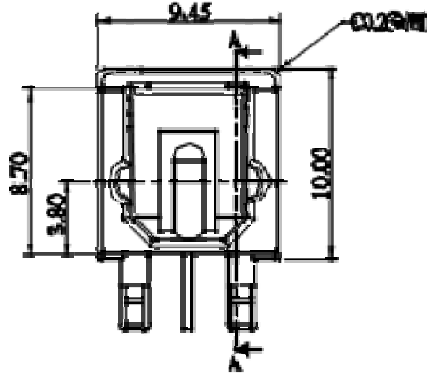
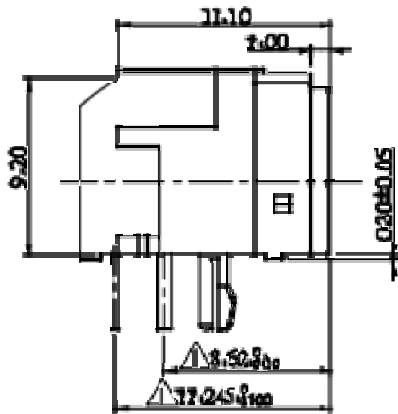
TITLE: OPTICAL JACK  
 DRWG. No. \_\_\_\_\_ FORM: A4DRWGH



**BOTTOM VIEW**  
**PCB TOLERANCE ±0.05**  
**Recommended PCB thickness: 1.6mm**



	公差	公差	公差	公差
0.5-3	±0.05	±0.1	±0.2	-
3-6	±0.05	±0.1	±0.3	±0.5
6-30	±0.1	±0.2	±0.5	±1
30-70	±0.15	±0.3	±0.8	±1.5
70-400	±0.2	±0.5	±1.2	±2.5
板厚公差	±0.05			



Transmitter	
①	Vin
②	Vcc
③	GD

6	NO.1 PIN	2	Ø100W	
5	Transmitter	1	5V/5mm	
4	Crit. Stopper	1	Ø10PA	
3	Socket	1	NYLONPA66GWB	BLACK/GAC
2	Case	1	NYLONPA66GWB	BLACK
1	Body	1	NYLONPA66GWB	BLACK
NO. PART NAME		PCS	MATERIAL	FINISH

NOTE	ALTERNATE	APPROVAL	DATE	REV	DESCRIPTION
		DATE	TIME	BY	CHK
		DATE	TIME	BY	CHK
		DATE	TIME	BY	CHK
		DATE	TIME	BY	CHK

# SPECIFICATION

CUSTOMER MODEL NO. / TITLE  
OPTICAL TRANSMITTER JACK

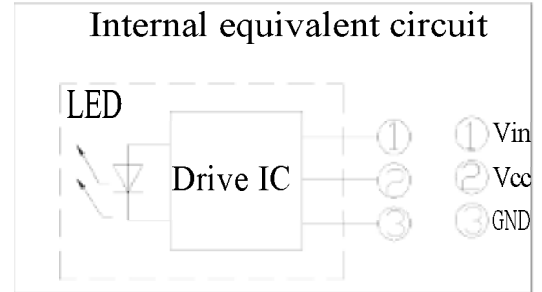
SPECIFICATION NO.  
FC684208T

PAGE : 1 OF 5  
DATE : OCT,16,2006

## OPTICAL CONNECTOR

### 1. Features

- (1) Uni-directional data transmission using plastic fiber.
- (2) Signal transmission speed: MAX. 12.5Mbps
- (3) Low voltage drive  
Operating voltage: 2.75 to 5.25V
- (4) Minimum input optical power: MIN. -21dBm (EIAJ)
- (5) TTL and high speed CMOS LOGIC IC compatible.



### 2. Applications

- (1) CD players
- (2) MD players
- (3) DVD players

### 3. Absolute Maximum Ratings

(Ta=25°C)

Parameter	Symbol	Rating	Unit
Supply voltage	Vcc	-0.5 to +7.0	V
Input voltage	Vin	-0.5 to Vcc +0.5	V
Operating temperature	Topr	-20 to +70 °C	
Storage temperature	Tstg	-30 to +80 °C	
Soldering temperature	Tsol	Solder Pool	260 ±3°C 5s <sup>+1s</sup> <sub>-0s</sub>
		Soldering Iron	380 ±10°C 3s <sup>+1s</sup> <sub>-0s</sub>

A	C	C	W
P	H	H	R
V	K	K	T
D	D	D	N

REV. NAME DATE REMARK

CLIFF ELECTRONIC COMPONENTS LTD

# SPECIFICATION

CUSTOMER MODEL NO. / TITLE OPTICAL TRANSMITTER JACK	SPECIFICATION NO. FC684208T	PAGE : 2 OF 5 DATE : OCT,16,2006
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## 4. Recommended Operating Conditions

Parameter	Symbol	MIN.	TYP.	MAX.	Unit
Operating supply voltage	V <sub>cc</sub>	2.75	3.0	5.25	V
Operating transfer rate	T	-	-	12.5	Mbps

## 5. Electro-optical Characteristics

Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit
<b>Peak emission wavelength</b>	$\lambda_p$			630	<b>660</b>	<b>690</b> nm
Optical power output coupling with fiber	P <sub>c</sub>	Refer to Fig.1	-21	-18	<b>-15</b>	<b>dBm</b>
Dissipation current	I <sub>cc</sub>	Refer to Fig.2	-	8	13	mA
High level input voltage	V <sub>IH</sub>	Refer to Fig.2	2.1	-	-	V
Low level input voltage	V <sub>IL</sub>	Refer to Fig.2	-	-	0.8	V
Low → High delay time	t <sub>pLH</sub>	Refer to Fig.3	-	-	180	ns
High → Low delay time	t <sub>pHL</sub>	Refer to Fig.3	-	-	180	ns
<b>Pulse width distortion</b>	$\Delta tw$	Refer to Fig.3	-15	-	+15	ns
Jitter	$\Delta tj$	Refer to Fig.3	-	1	15	ns

## 6. Mechanical Characteristics

### 6-1.

Parameter	Symbol	MIN.	TYP.	MAX.	Unit
Insertion force.	-	3	-	40	N
Withdrawal force.	-	6	-	40	N

### 6-2. Repeated operation

Inserting and withdrawing shall be made at a speed of 20 times or less/min using mating plug 500 times.

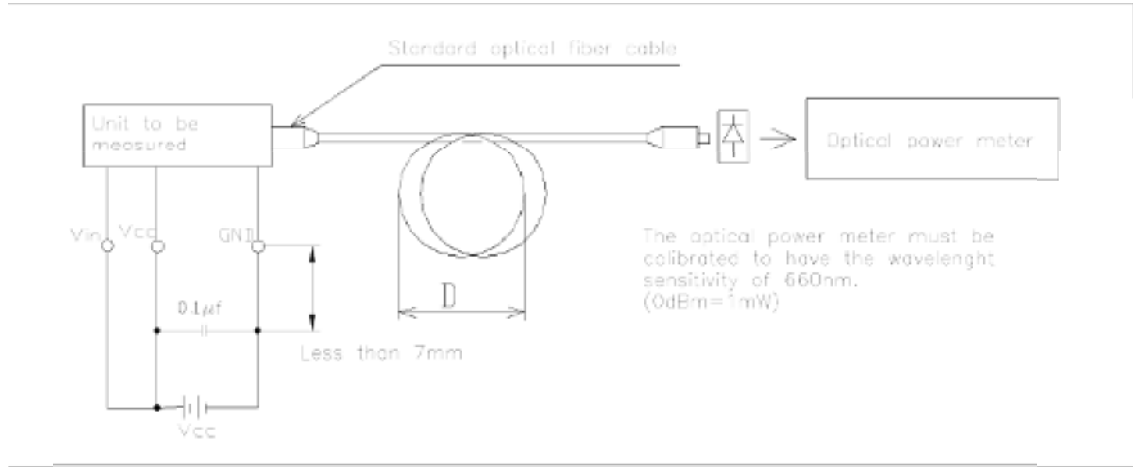
### 6-3. Strength of tapping part

The tapping part shall be capable of a torque of 8kgf-cm for 5 seconds by TP3 ×8 tapping tight screw and panel (t=0.8), the jack shall not be broken.

# SPECIFICATION

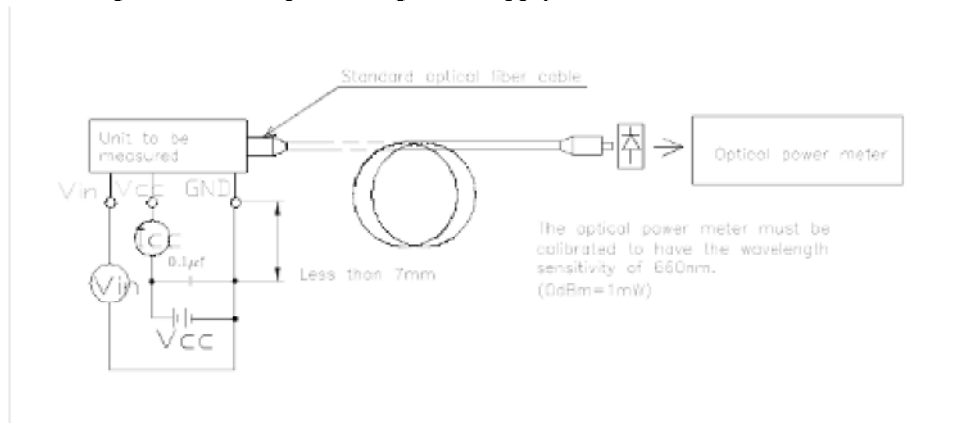
CUSTOMER MODEL NO. / TITLE OPTICAL TRANSMITTER JACK	SPECIFICATION NO. FC684208T	PAGE : 3 OF 5 DATE : OCT,16,2006
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Fig.1 Measuring Method of Optical Output Coupling with Fiber.



- Notes: (1) OC-08 Vcc=3.0V (State of operating).  
 (2) To bundle up the standard fiber optic cable, make it into a loop with the diameter D=10cm or more. (The standard fiber optic cable will be specified elsewhere.)

Fig.2 Measuring Method of Input Voltage and Supply Current.



**Input conditions and judgement method.**

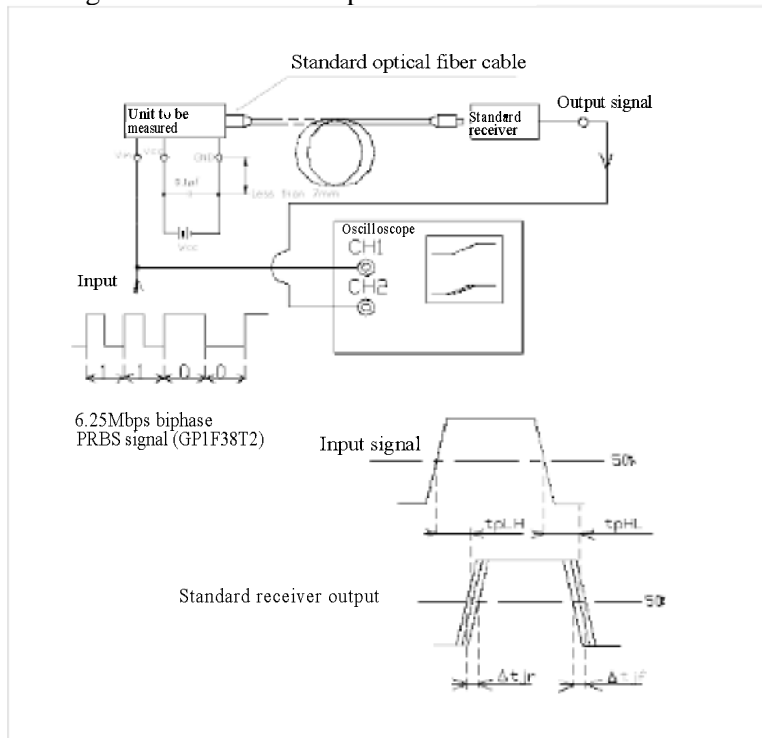
Condition	Judgment method
$V_{in} = 2.1V$ or more.	$-21 \leq P_c \leq -15dBm$ , $I_{cc} = 13mA$ or less.
$V_{in} = 0.8V$ or less.	$P_c \leq -36dBm$ , $I_{cc} = 13mA$ or less.

Note) Vcc=3.0V (State of operating).

# SPECIFICATION

CUSTOMER MODEL NO. / TITLE OPTICAL TRANSMITTER JACK	SPECIFICATION NO. FC684208T	PAGE : 4 OF 5 DATE : OCT,16,2006
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Fig.3 Measuring Method of Pulse Response and Jitter.



Test item

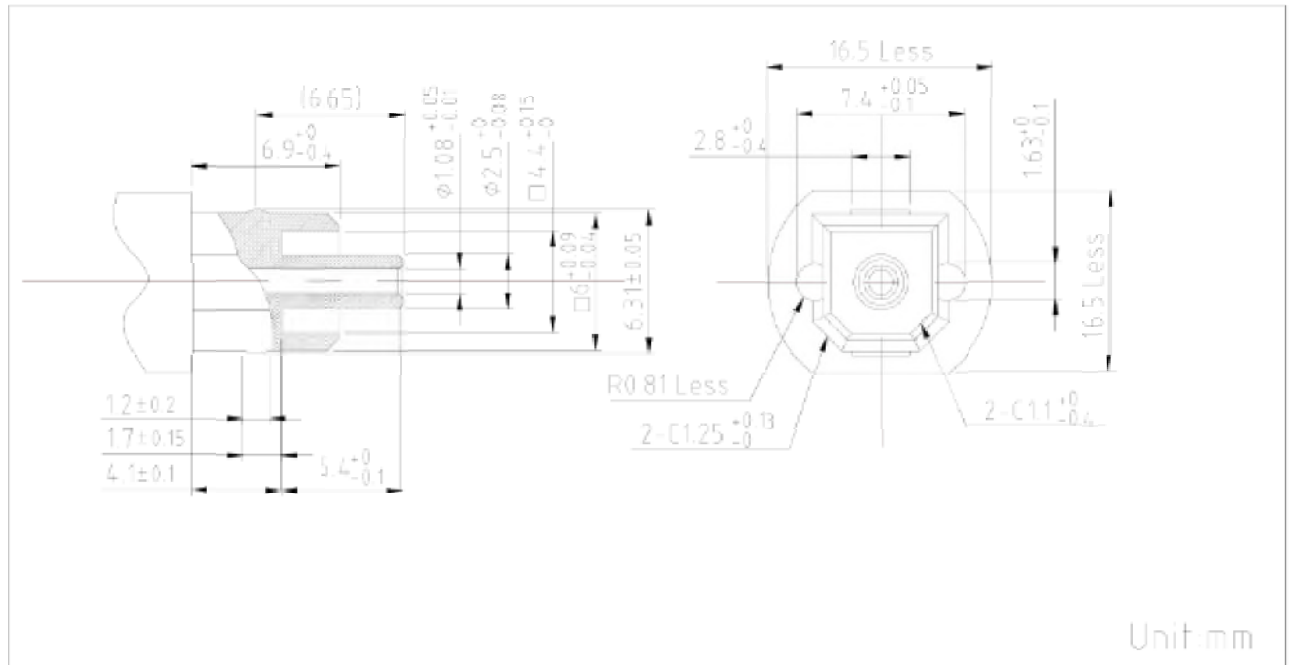
Test item	Symbol	Test condition
Low → High pulse delay time	$t_{PLH}$	Refer to the above prescriptions
High → Low pulse delay time	$t_{PHL}$	Refer to the above prescriptions
<b>Pulse width distortion</b>	$\Delta tw$	$\Delta tw = t_{PHL} - t_{PLH}$
Low → High Jitter	$\Delta t_{jr}$	Set the trigger on the rise of input signal to measure the jitter of the rise of output
High → Low Jitter	$\Delta t_{jf}$	Set the trigger on the fall of input signal to measure the jitter of the rise of output

- Notes
- (1) The waveform write time shall be 4 seconds. But do not allow the waveform to be distorted by increasing the brightness too much.
  - (2)  $V_{cc} = 3.0V$  (State of operating)
  - (3) The probe for the oscilloscope must be more than  $1M\Omega$  and less than  $10pF$ .

# SPECIFICATION

CUSTOMER MODEL NO. / TITLE OPTICAL TRANSMITTER JACK	SPECIFICATION NO.	PAGE : 5 OF 5 DATE : OCT,16,2006
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## Mating plug



Document No.	Document name	Rev.	DATE
01-E	Management standards for "Environment-related substances to be controlled"	1.6	OCT,26,2006

1. This part should not contain any substances which are specified in follow .(Except cadmium is less than 5ppm, Lead is under 90ppm)
2. In this case, pre-processing methods and measurement methods shall conform to ROHS.
3. List of "Environment-related Substances to be Controlled ('The Controlled Substances')"

Substances		Allowable concentration
Heavy metals	Cadmium and cadmium compounds	Less 5ppm
	Lead and lead compounds	Less 90ppm
	Lead in the plastic,rubber,paints,ink	Less 50ppm
	Mercury and mercury compounds	
	Hexavalent chromium compounds	
Chlorinated organic compounds	Polychlorinated biphenyls (PCB)	
	Polychlorinated naphthalenes (PCN)	
	Chlorinated paraffins (CP)	
	Mirex (Perchlordecone)	
	Other chlorinated organic compounds	
Brominated organic compounds	Polybrominated biphenyls (PBB)	
	Polybrominated diphenylethers (PBDE)	
	Tetrabromobisphenol-A-bis- (2, 3-dibromopropylether) (TBBP-A-bis)	
	Other brominated organic compounds	
Organic tin compounds (tributy tin compounds, Triphenyl tin compounds)		
Asbestos		
Azo compounds		
Formaldehyde		
Polyvinyl chloride (PVC) and PVC blends		

4. Allowable concentrations:

Less than 90ppm is determined as an allowable total-concentration of four heavy metals (mercury, cadmium, hexavalent chromium, and lead). Less than 5ppm is determined as an allowable cadmium-concentration in a plastic (including rubber) part.

A	C	C	W
P	H	H	R
V	K	K	T
D	D	D	N

REV. NAME DATE REMARK

CLIFF ELECTRONIC COMPONENTS LTD



**E I DUPONT DE NEMOURS & CO INC**

ENGINEERING POLYMERS CHESTNUT RUN PLAZA PO BOX 80713 WILMINGTON DE 19880

Material Designation: **70G33L(+)**

Product Description: Polyamide 66 (PA66), glass reinforced, designated "Zytel" furnished as pellets.

Color	Min. Thick. (mm)	Flame Class	HWI	HAI	RTI Elec	RTI Imp	RTI Str	IEC GWIT	IEC GWFI
ALL	0.71	HB	4	0	130	120	130	-	-
	1.5	HB	4	0	130	120	130	-	-
	3.0	HB	4	0	130	120	130	-	-

**CTI: 0**                      **HVTR: 1**                      **D495: 5**                      **IEC BP: -**

(+) Virgin and Re grind up to 50% by weight inclusive, have the same basic material characteristics.

NOTE (1) Material designations that are color pigmented may be followed by suffix letters and numbers. (2) Material designations may be prefixed by "ZYT" or "MIN".

Report Date: 08/06/1996

Underwriters Laboratories Inc®

324299147

UL94 small-scale test data does not pertain to building materials, furnishings and related contents. UL 94 small-scale test data is intended solely for determining the flammability of plastic materials used in components and parts of end-product devices and appliances, where the acceptability of the combination is determined by ULI.



