

(8~12)

Fig. 1 COG LCD
 , Fig. 2 COG ACF pre-bonding
 (driver IC chip)
 alignment hot plate



Fig. 1 Appearances of COG bonding

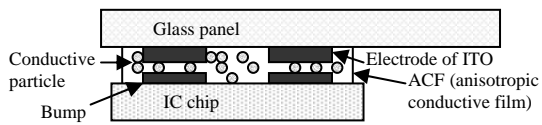


Fig. 2 Scheme of developed COG bonding technology

Hot plate alignment 가 ITO
 COG bump , ACF 가
 hot plate

3.

COG COG ITO ACF IC 가 가
 ACF 가 IC
 COG IC 35 mm x 3 mm
 (line beam) IC

15~30W, 1~10

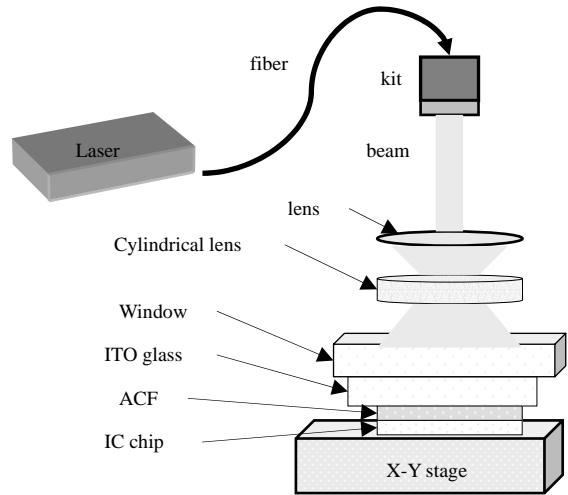


Fig. 3 Experimental Scheme of COG bonding system using high power diode laser

Fig.3 COG

808 nm
 30W CW

ACF spec.

Table. 1

Table.1 Standard speculation, Bonding and characteristic

	Item	Unit	ACF
Standard spec.	Smallest bump gap	um	10
	Width	mm	3
	Thickness	um	25
	Length	m	50
Pre-bonding	Temp.		80
	Time	sec.	>2
Final bonding	Temp.		190~210
	Time	sec.	5~10

ACF

ITO glass, ACF

IC
 가 ACF
 가
 가
 (Mecmesin Basic Force Gauge)
 IC ITO glass
 COG
 가

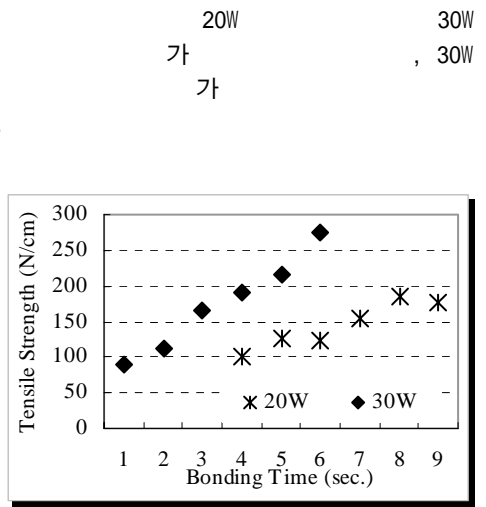


Fig.4 Adhesion strength in COG bonding with different laser power

4.
 (Adhesion strength)
 COG
 COG
 ACF
 가
 가
 bump
 가
 ACF
 가
 ACF
 가
 bump
 가
 bump
 가
 ACF
 가
 ACF
 200
 (180N/cm)
 8
 가
 가
 가

Hot plate
 200
 가
 20W
 8
 가
 200 N/cm
 가
 30W
 4

Fig.4
 (1~10)
 (20W, 30W)
 가
 COG
 100~300 N/cm
 가
 가

5.
 COG
 hot plate
 COG
 hot plate
 가 hot plate
 misalign
 COG
 가

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