



ELECTRO-OPTICAL CHARACTERISTICS

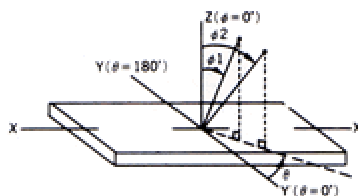
TN Type LCD and LCD Module

Item	symbol	Condition	Min.	Typ.	Max.	Unit	Note
Viewing Angle	$\Delta 2-\Delta 1$	ka=2	20	-	-	degree	1,2
Contrast Ratio	k	$\Delta=10\Delta, \varphi=0\Delta$	3	-	-	-	3
Rising Time	tr	$\Delta=10\Delta$ $\Delta=0\Delta$	-	100	200	ms	4,6
				150	200		
Falling Time	tf	$\Delta=10\Delta$ $\Delta=0\Delta$	-	100	200	ms	4,6
				150	200		

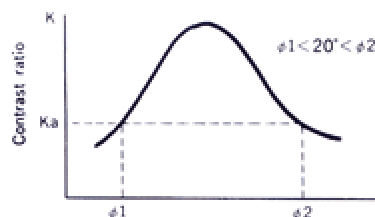
STN Type and LCD Module

Item	symbol	Condition	Min.	Typ.	Max.	Unit	Note
Viewing Angle	$\varphi 2-\varphi 1$	ka=4 $\varphi=0\Delta$	40	-	-	degree	10,11
	φ	ka=4 $\varphi\Delta$	+30	-	-		
Contrast Ratio	k	$\varphi=0\Delta$ $\varphi=0\Delta$	5	-	-	-	3
Rising Time	tr	$\varphi=0\Delta$ $\varphi=0\Delta$		150	250	ms	6,7
				200	250		
				250	300		
Falling Time	tr	$\varphi=0\Delta$ $\varphi=0\Delta$		150	250	ms	6,7
				200	250		
				250	300		

Note 1: definition of θ AND φ



Note 2: definition of viewing angles $\varphi 1$ AND $\varphi 2$



Note 3: definition of contrast ratio K

Brightness of non selection dot

$$K = \frac{B2}{B1}$$

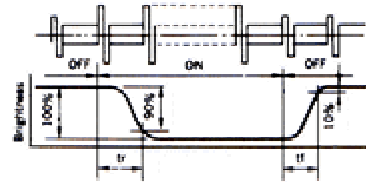
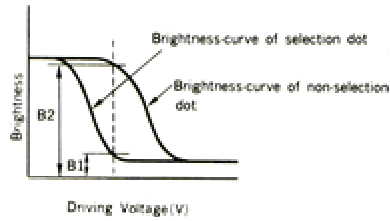
Brightness of selection (B1)

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Note 6: definition of optical response



Note 4: applied to:
1/8, 1/16, 1/32, Duty Driving LCD and LCD Module

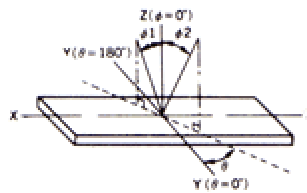
Note 5: applied to:
1/64, Duty Driving LCD and LCD Module

Note 7: applied to:
1/16, 1/32, Duty Driving LCD and LCD Module

Note 8: applied to:
1/64, 1/100, Duty Driving LCD and LCD Module

Note 9: applied to:
1/200, Duty Driving LCD and LCD Module

Note 10: definition of ϕ & θ



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