



Classic LCDs & LEDs

LCD MODULE SPECIFICATION

ITEM CODE

FC0802E00-FHYYBW-51SK

SPECIFICATION ESTABLISHED DATE: 2019.07.12



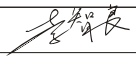
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AMENDMENT RECORD

MARK	DATE	DESCRIPTION	ITEM	PAGE	APPROVED
1	2019.07	INITIAL ISSUED	ALL	ALL	



1	2	3	4	5	6	—	7	8	9	10	11	12	—	13	14	15	16
F	C	08	01	A	23	—	F	H	Y	Y	B	W	—	5	2	L	E

No.	REMARKS	DESCRIPTION				
1	COMPANY ABBRAVIATION	F = FORDATA				
2	STANDARD MODULE TYPE	C = Character type standard LCD module (COB version) G = Graphic type standard LCD module (COB version)				
3	Character (FC series)	08, 10, 12, 16, 20, 24, 40, = Character number Per line				
	Graphic (FG series)	80, 100, 120, 122, 128, 160 = Row Dots Quantity				
4	Character (FC series)	01, 02, 04, = Character Lines				
	Graphic (FG series)	32, 64, 80, 128, 160 =Column Dots Quantity				
5	Serial Number	A~Z which is decided by the sizes of viewing area				
6	Identifying Code	00~99 which is decided by all the other aspects for the same viewing area				
7	Polarizer type	R = Positive Reflective M = Positive Transmissive B = Super Black technology <i>New!</i> F = Positive Transflective N = Negative Transmissive				
8	Backlight type	N = No Backlight S = Edge Type LED Backlight (Standard version) H = Edge Type LED Backlight (Long life span version) <i>New!</i> E = EL backlight without Invertor C = CCFL backlight without Invertor L = Array Type LED Backlight F = EL backlight with Invertor T = CCFL backlight with Invertor				
9	Backlight color	N = No Backlight R = Red B = Blue Y = Yellow-Green A = Amber G = Green W = White C = Blue-Green Q = RedGreenBlue three color <i>New!</i>				
10	LCD panel type	T = TN G = Gray STN H = HTN B = Blue STN Y = Yellow-Green STN F = FSTN				
11	Viewing angle	B = Bottom 6:00 T = Top 12:00 R = Right 3:00 L = Left 9:00				
12	Operation temperature range	S = 0°C ~ 50°C (Single Supply Voltage) W = -20°C ~ 70°C (Single Supply Voltage) T = -30°C ~ 80°C (Single Supply Voltage) D = 0°C ~ 50°C (Dual Supply Voltage) H = -20°C ~ 70°C (Dual Supply Voltage) E = -30°C ~ 80°C (Dual Supply Voltage)				
13	Driving Voltage Code (This code was updated from 2015-JAN-1ST)		Vlcm = 3.0V	Vlcm = 3.3V	Vlcm = 3.6V	Vlcm = 5.0V
		Vled = Indicated Voltage*	P	R	X	Q
		Vled = 4.2V	M	G	D	K
		Vled = 3.0V	9	A	3	4
		Vled = 3.3V	T	B	K	F
		Vled = 5.0V	8	C	2	5
14	Backlight Connect Method	0 = PIN1 LED-, PIN2 LED+ 1 = PIN15(17/19) LED+, PIN16(18/20) LED- 2 = PIN15(17/19) LED-, PIN16(18/20) LED+ 3 = PIN15(17/19) LED+, PIN16(18/20) NC 4 = PIN15(17/19) NC, PIN16(18/20) LED+ 5 = PINA LED+, PINK LED- 6 = No / EL / CCFL Backlight				
15	IC Manufacturer Code	A~Z or 01~99 which is decided by different IC manufacturers				
16	Font Set	A~Z or 01~99 which is decided by different font maps				

mE~eE=ENe# a f ^ qba=sl i q^ d b=qN→a=â= m ÖEQ=âÇ=m ÖERK



FEATURES

AVAILABLE OPTIONS	CHARACTERISTICS	CODE	No.
a f p m i ^ v = d o j ^ q	8 Characters by 2 Lines	FC0802E00	NúS
m l i ^ o f w b o = l m q f l k p	Positive Transflective	F	T
_ ^ ` h i f d e q = q m b = l m q f l k p	Edge Type LED Backlight (Long life span version)	H	U
_ ^ ` h i f d e q = l i l o = l m q f l k p	Yellow-Green color	Y	V
i ` a = m ^ k b i = l m q f l k p	Yellow-Green STN	Y	NM
s f b t f k d = ^ k d i b = l m q f l k p	6:00 (Bottom)	B	NN
q b j m b o ^ q r o b = o ^ k d b = l m q f l k p	-20°C ~ 70°C, Single Supply Voltage	W	NO
p r d d b p q b a = a o f s f k d = s l i q ^ d b	Vlcm = 5.0V Vled = 5.0V	5	NP
p r d d b p q b a = i b a = a o f s f k d = j l a b	PIN15: LED+, PIN16: LED-	1	NQ
` l k q o l i i b o ▲1	ST7066U	S	NR
c l k q = j ^ n = ` l a b	K Version	K	NS
a o f s f k d = a r q v	1/16	—	—
a o f s f k d = _ f ^ p	1/5	—	—

▲1 m a = c i ~ e = e a = d e = c i ~ e U E E i = q n U E = a e a i a a e C = A a i e a e = a i a = c l o a ^ q ^ = e = t o a ^ q ^ B = + i U c e e C = e i e a i i c e e K r i = A ~ a = M C = U E = e a i E C = a n e a ~ i a a = A a C a O ^ = C a ` = A U ~ e ~ A i E e a i a e i t e e C = e E ~ C q a a a O e a O e a I f a e i a A i a a i ~ A e = a C e E e A e a i a e l a a o ^ j = C = d o ^ j I = o E e i c i a A i a a = a C e c a a = a C a = i U E C ~ i ~ e U E E i = N a a i e a e K = =

▲1 v c i = A ~ a = e a = d e = U E = e a = e a = c i ~ e = e e O e = a = e a = a O ~ O E F = a = c l o a ^ q ^ = e = t o a ^ q ^ B = + i U c e e C = e i e a i i c e e K


MECHANICAL SPECIFICATIONS

OVERALL SIZE	40.0W x 35.4H	mm	THICKNESS	max 13.0	mm
VIEWING AREA	30.4W x 13.9H	mm	HOLE-HOLE	36.0W x 30.0H	mm
CHARACTER SIZE	2.95W x 4.75H	mm	CHARACTER PITCH	0.40W x 0.40H	mm
DOT SIZE	0.55W x 0.55H	mm	DOT PITCH	0.05W x 0.05H	mm

ABSOLUTE MAXIMUM RATINGS

ITEM	SYMBOL	CONDITION	MIN	TYP	MAX	UNIT
m l t b o = p r m m i v = E # i d f ^ F	s ÇÇ	OR = `	-0.3	—	7.0	V
m l t b o = p r m m i v = E ^ a F	s M	OR = `	Vdd -13.5	—	Vdd +0.3	V
f k m r q = s l i q ^ d b	s a a	OR = `	-0.3	—	Vdd +0.3	V
l m b o ^ q f k d = q b j m b o ^ q r o b	s ç é é	—	-20	—	70	°C
p q l o ^ d b = q b j m b o ^ q r o b	s e i Ö	—	-30	—	80	°C

ELECTRONIC CHARACTERISTICS *

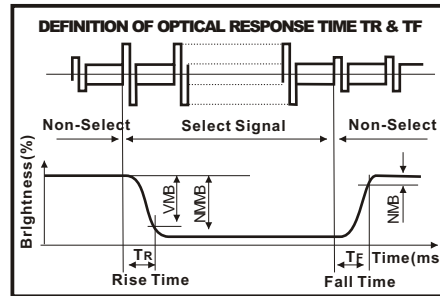
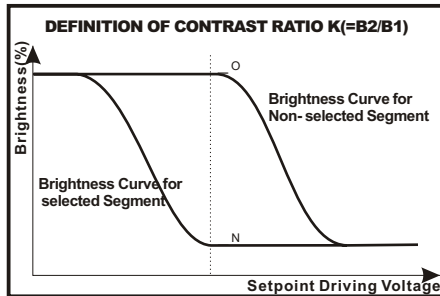
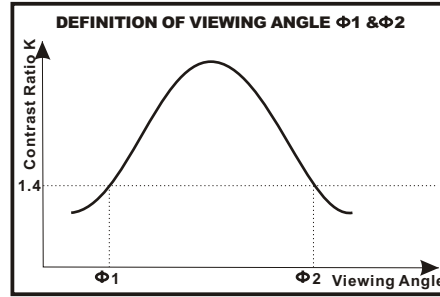
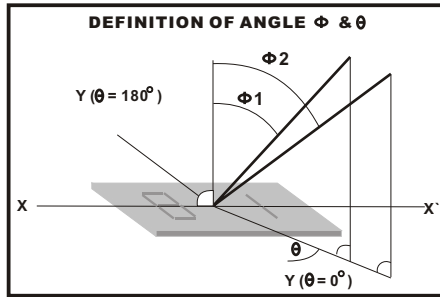
ICONS	ITEM	SYMBOL	CONDITION	MIN	TYP	MAX	UNIT
	f k m r q = s l i q ^ d b	s ÇÇ	—	—	5.0	—	V
	p r m m i v = ` r o o b k q	f ÇÇ	Vdd=5V	—	1.5	—	mA
	a o f s f k d = s l i q ^ d b c l o = i ` a = m ^ k b i	s a A Ç = E s ÇÇ = M F	-20°C	4.40	—	4.90	V
			0°C	4.35	—	4.90	
			25°C	4.30	4.50	4.90	
50°C			4.25	—	4.80		
			70°C	4.20	—	4.70	

* ^ a a = c i ~ e = e a = d e = c i ~ e U E E i = q n U E = a e a i a a e C = A a i e a e = a i a = c l o a ^ q ^ = e = t o a ^ q ^ B = + i U c e e C = e i e a i i c e e K r i = A ~ a = M C = U E = e a i E C = a n e a ~ i a a = A a C a O ^ = C a ` = A U ~ e ~ A i E e a i a e i t e e C = e E ~ C q a a a O e a O e a I f a e i a A i a a i ~ A e = a C e E e A e a i a e l a a o ^ j = C = d o ^ j I = o E e i c i a A i a a = a C e c a a = a C a = i U E C ~ i ~ e U E E i = N a a i e a e K = =



LCD CHARACTERISTICS

FOR STN/FSTN TYPE LCD Panel (TA=25 °C, Vlcd=5.0V ± 0.5V)							
ICONS	ITEM	SYMBOL	CONDITION	MIN	TYP	MAX	UNIT
	sfbt fkd=^k di b	$\Phi_2 \text{ } \Phi_1$	K=4	40	—	—	deg
		θ		60			
	l k qo ^pq=^ql	K	—	6	—	—	—
	obpml kpb=qfj bE fpbF	To	—	—	150	250	ms
	obpml kpb=qfj bE^ i i F	Tc	—	—	150	250	ms



LED CHARACTERISTICS

ICONS	ITEM	SYMBOL	CONDITION	MIN	TYP	MAX	UNIT
	i ba=cl ot ^oa=sl i q^ db	sÑ	25°C If = 5mA	—	5.0	—	V
	i ba=cl ot ^oa= r oobkq ▲2	fÑ	25°C	—	5	—	mA
	i ba=obsbopb= r oobkq	fê	25°C Vr=5.0V	—	—	10	µA
	i ba=nb^h=t ^sb=ibk dqe	λé	25°C If = 5mA	569	—	575	nm
	i ba_ofdeqkbpp= fql r qf` aF	i î	25°C If = 5mA	—	220	—	cd/m²
	i ba_ofdeqkbpp= kfcl oj fqv	i îã ãli îã ~ñ	25°C If = 5mA	70	—	—	Ratio
	i ba=icb=qfj b	—	25°C If = 5mA	20K	—	—	Hours

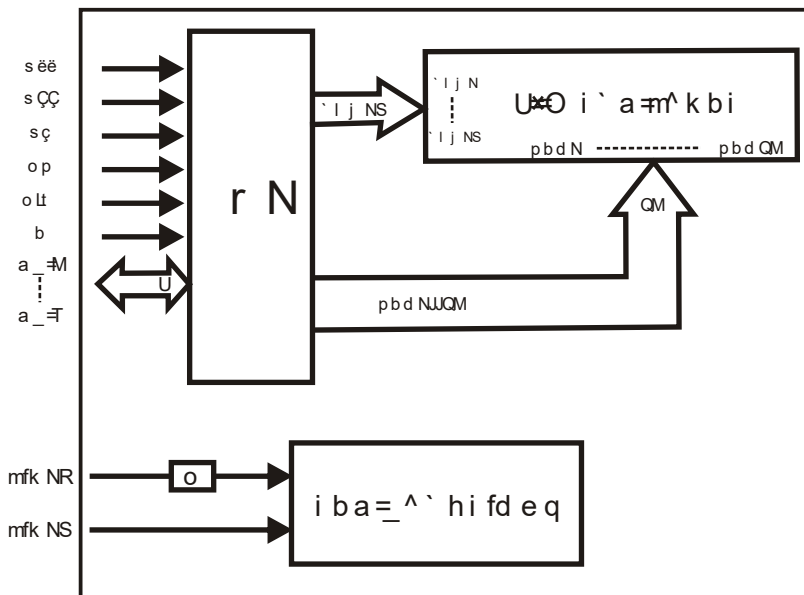
▲2 请注意，驱动背光考虑的是恒流而不是恒压。所以，这个数值非常重要！
 vl ro=^qqbk qflk Wf=é Aqæi~ái AíéEáiEáí Aqæi~áiç at ÇE FÛ= ièÜç i äÇE=ééãÇÛ ÉaÇãããÖb a~AããÜKÜÉÉÑÉI= iÜæÇ~í~æÉ éóãæçê~ái>
 * 当工作温度高于OR²=时，fÑ IfÑ和mÇ必须降低；电流降低率是JMPSONã ^ L²= (直流驱动)，或JMUSGNã L²= (脉冲驱动)，功率降低率是JTRGNã t L²=K
 产品工作电流不能大于对应的工作条件温度fÑ或fÑ的=3VB K
 ççéçéEé-íqã= Açi É-OR²=íqUE fÑ=fÑ-CmÇã i ei-AE ÇEé-íEQíUE= i éai-ÇEé-íãÖæ=JMPSONã ^ L²=Ñéã`=Çãã É=ãÇãJMUSGNã ^ L²=Ñémi æÉÇã ÉI= iUEéçíÉ éÇééáé-íqã=æ#RÖãt L²=çqUEéçÇiã iç éãããAiééáiã iãçíç-AE=ç éÉÛ-ã=3MB=çÑUE fÑ=ããÑ=AAçÇããçç=UEçç éãããÉæÉé-ñÉÉK



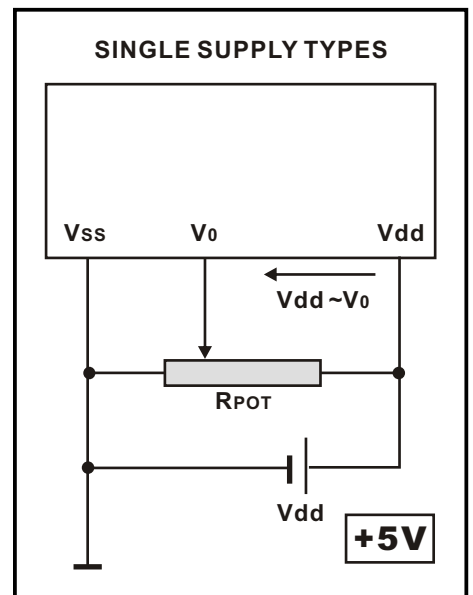
PIN ASSIGNMENT

PIN	SYMBOL	DESCRIPTION	REMARKS
1	Vss	GND	
2	Vdd	Power supply for LCM	5.0V
3	V0	Contrast Adjust	
4	RS	Register Select Signal	
5	R/W	Data Read / Write	
6	E	Enable Signal	
7	DB0	Data bus line	
8	DB1	Data bus line	
9	DB2	Data bus line	
10	DB3	Data bus line	
11	DB4	Data bus line	
12	DB5	Data bus line	
13	DB6	Data bus line	
14	DB7	Data bus line	
15	LED+	Power supply for BKL	5.0V
16	LED-	Power supply for BKL	

BLOCK DIAGRAM



POWER SUPPLY DIAGRAM



r ééÉè i çï È QÄä	ééÉè QÄä	iiii	iiie	iiiei	iiiee	ieiii	ieiee	ieeii	ieeee	eiiii	eiiie	eieii	eieee	eeiii	eeiee	eeeee
iiii	´ d o ^ j ENF															
iiie	EOF															
iiiei	EPF															
iiiee	EOF															
ieiii	ERF															
ieiee	ESF															
ieeii	ETF															
ieeee	EUF															
eiiii	ENF															
eiiie	EOF															
eieii	EPF															
eieee	EOF															
eeiii	ERF															
eeiee	ESF															
eeeii	ETF															
eeeee	EUF															



