

1. BASIC SPECIFICATION

1.1 Mechanical specifications

Items	Nominal Dimension	Unit
Active screen size	2.4" diagonal	-
Dot Matrix	240*RGB*320	Pixel
Module Size (W x H x T)	42.7 x 59.45 x 3.0	mm.
Active Area (W x H)	36.72 x 48.96	mm.
Pixel Size (W x H)	0.153 x 0.153	mm.
Color depth	262K	color
Interface	8/9/16/18-bit MPU parallel	-
Driving IC Package	COG	-
Module weight	14±10%	g

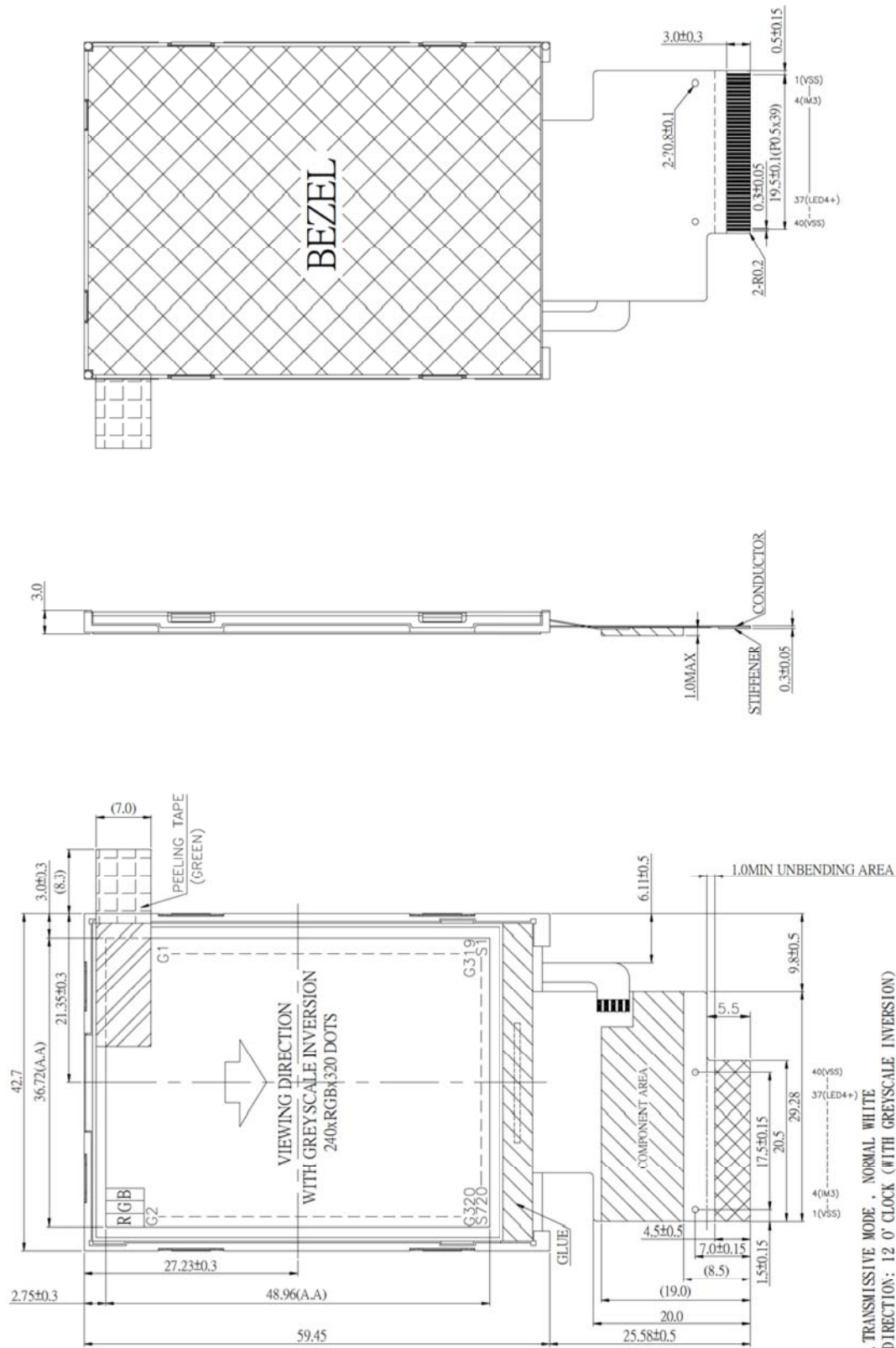
1.2 Display specification

Display	Descriptions	Note
LCD Type	a-Si TFT	-
LCD Mode	TN/Normal White	-
Polarizer Mode	Transmissive	-
Polarizer Surface	Normal	-
Pixel arrangement	RGB-stripe	-
Backlight Type	LED	-
Viewing Direction(Gray inversion)	12 O'clock Direction	1

* Color tone is slightly changed by temperature and driving voltage.

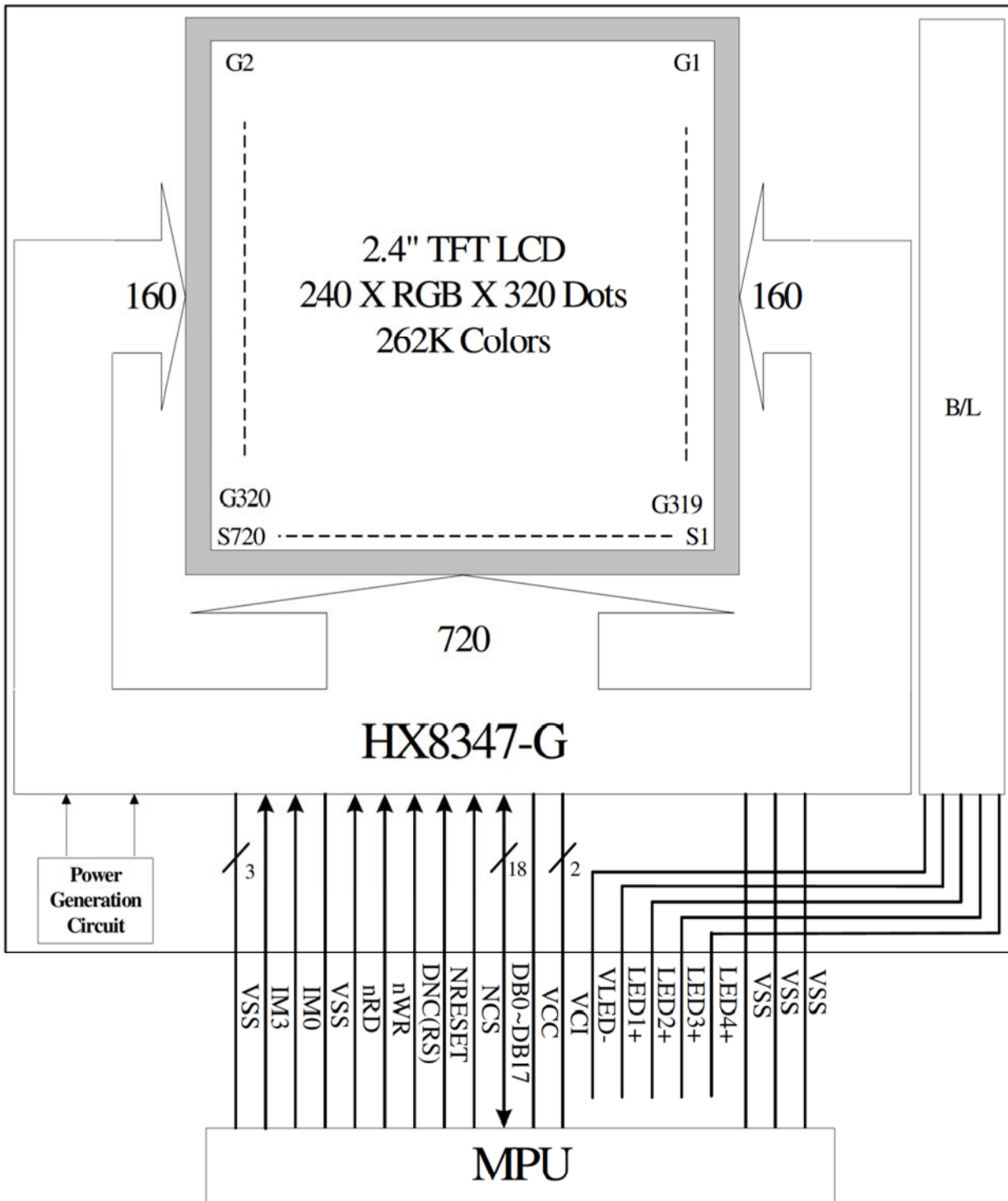
Note 1 : The viewing direction defined in this specification is according to the rubbing direction of its TFT surface treatment by the TFT glass manufacturer. The grayscale inversion is at this direction as well. However, the optimal viewing direction for human view is normally where the color does NOT change to grayscale inversion, and this would be the opposite site of the specified viewing direction in this specification. In any case we advise customers to judge by themselves, and be aware of this phenomenon.

1.3 Outline dimension



- NOTE:
1. LCD: TFT, TRANSMISSIVE MODE , NORMAL WHITE
 2. VIEWING DIRECTION: 12 O'CLOCK (WITH GREYSCALE INVERSION)
 3. TOP: -20 °C~70 °C ; TST: -30 °C~80 °C
 4. LED COLOR: WHITE , 4 PCS; IF=80.0mA, VLED=3.3 V(TYP)(Parallel Type , Constant Current)
 5. DRIVER IC: HX8347-G
 6. TOLERANCE FOR NOT ASSIGNED :±0.2 mm
 7. TFT PIXEL SIZE : 0.153 x 0.153 mm
 8. THE MINIMUM BENDABLE RADIUS(INNER) OF THE FPC IS 0.5 mm
 9. IF THE CUSTOMER BEND THE FPC INSIDE OF THE UNBENDING AREA, URT WON'T BE RESPONSIBLE FOR ANY DAMAGE

1.4 Block diagram:



1.5 Interface pin :

Pin No.	Pin Symbol	I/O	Description			
1~3	VSS	P	Power Supply for Ground (0V).			
4	IM3	I	Selects the MPU interface mode.			
5	IM0		IM3	IM0	MPU-Interface Mode	DB Pin in use
			0	0	i80-system 16-bit interface	DB[15:0]
			0	1	i80-system 8-bit interface	DB[7:0]
			1	0	i80-system 18-bit interface	DB[17:0]
1	1	i80-system 9-bit interface	DB[8:0]			
6	VSS	P	Power Supply for Ground (0V).			
7	nRD	I	Read enable pin I80 parallel bus system interface.			
8	nWR	I	Write enable pin I80 parallel bus system interface.			
9	DNC(RS)	I	Command / parameter or display data selection pin.			
10	NRESET	I	Reset pin. Setting either pin low initializes the LSI. Must be reset after power is supplied			
11	NCS	I	Chip select signal. Low: chip can be accessed; High: chip cannot be accessed.			
12~29	DB0~DB17	I/O	18-bit bi-directional data bus. The unused pins let to open.			
30	VCC	P	Digital IO Pad power supply. (+2.8V)			
31,32	VCI	P	Analog power supply. (+2.8V)			
33	VLED-	P	Cathode of the LED Backlight (0V).			
34	LED1+	P	Anode1 of the LED Backlight.			
35	LED2+	P	Anode2 of the LED Backlight.			
36	LED3+	P	Anode3 of the LED Backlight.			
37	LED4+	P	Anode4 of the LED Backlight.			
38~40	VSS	P	Power Supply for Ground (0V).			

2. ELECTRICAL CHARACTERISTICS

2.1 Absolute Maximum Ratings

Items	Symbol	Min.	Max.	Unit
Supply voltage for logics	VCC	-0.3	+4.6	V
Supply voltage for analog	VCI	-0.3	+4.6	V
Input voltage	V _i	-0.3	VCC+0.5	V
Operating temperature range	T _{OP}	-20	+70	°C
Storage temperature range	T _{ST}	-30	+80	°C

2.2 DC Characteristics

Items	Symbol	Min.	Typ.	Max.	Unit	Condition
Supply voltage (Logic)	VCC	1.65	2.8	3.3	V	Note 2
Supply voltage (analog)	VCI	2.3	2.8	3.3	V	Note 2
Input high level voltage	V _{IH}	0.7VCC	-	VCC	V	-
Input low level voltage	V _{IL}	-0.3	-	0.3VCC	V	-
Power supply current	I _{CC} +I _{CI}	-	-	8	mA	Note 2

Note 2 :

Measuring Condition :

Standard Value MAX.

T_a = 25°C

VCC-VSS = +2.8V

VCI-VSS = +2.8V

F_{osc} ≐ 2.75 MHz

Display Patten



0 gray black pattern

2.2.1 Back-light Characteristics

PARAMETER	SYMBOL	MIN	TYP	MAX	Unit	Test Condition	NOTE
Supply Current	I _f	-	80	-	mA	T _a =25°C I _f =80mA	-
Supply Voltage	V _F	-	3.3	-	V	T _a =25°C I _f =80mA	-
Half-Life Time	L _f	-	10000	-	hrs	T _a =25°C I _f =80mA	3

Note 3 : The “ Half-Life Time ”is defined as the module brightness decrease to 50% original brightness.