



NINGBO FORYARD OPTO
ELECTRONICS CO.,LTD.

DOT MATRIX DISPLAY

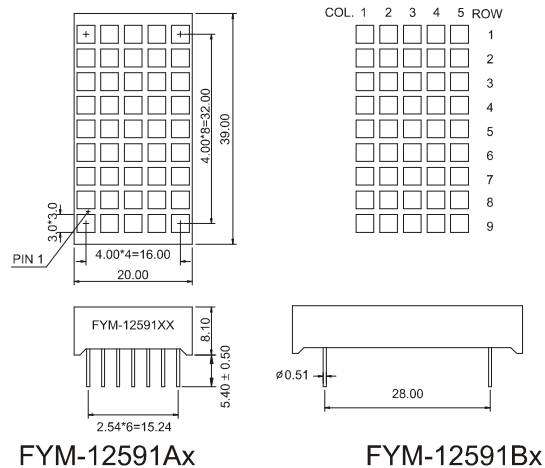
PartNO.:FYM-12591AW/BW-XX

DESCRIPTION

- 39.00mm (1.5") 3.0x3.0 dot matrix LED display.
- Standard brightness.
- Low current operation.
- Excellent character appearance.
- Easy mounting on P.C.boards or sockets

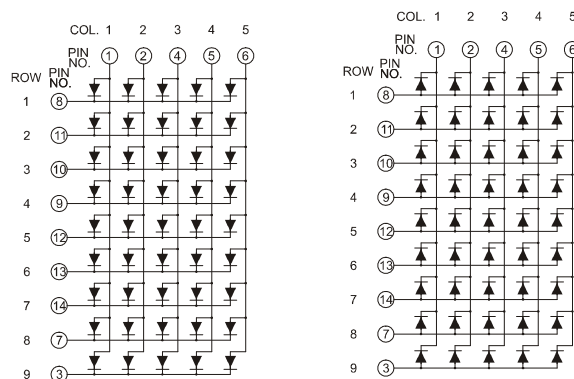
Package Dimensions & Internal Circuit Diagram

FYM-12591 Series



FYM-12591Ax

FYM-12591Bx



Notes:

- All dimensions are in millimeters (inches)
- Tolerance is $\pm 0.25(0.01)$ unless otherwise noted.
- Specifications are subject to change without notice.

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PartNO.:FYM-12591AW/BW-XX

: Absolute maximum ratings (Ta=25℃)

Parameter	Symbol	Test Condition	Value		Unit
			Min	Max	
Reverse Voltage	VR	IR=30μA	5	-----	V
Forward Current	IF	-----	-----	30	mA
Power Dissipation	Pd	-----	-----	100	mW
Pulse Current	Ipeak	Duty=0.1mS, 1KHz	-----	150	mA
Operating Temperature	Topr	-----	-40	+85	° C
Storage Temperature	Tstr	-----	-40	+85	° C

• -XX: Surface / Lens color:

Number	0	1	2	3	4	5
Ref Surface Color	White	Black	Gray	Red	Green	
Epoxy Color	Water clear	White diffused	Red Diffused	Green Diffused	Yellow Diffused	

■ **Description:**

• Color Code & Chip characteristics: (Test Condition: IF=20mA)

Emitting Color		Dice Material	Peak Wave Length(λ _P)	Spectral Line halfwidth(Δλ1/2)	Forward Voltage(VF) Unit:V		Luminous Intensity (Iv) Unit:mcd
					Typ	Max	
W	White	InGaN	X=0.29,y=0.30		2.80	3.80	180-200
U W	Ultra White	InGaN	X=0.29,y=0.30		2.80	3.80	180-200



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Color temperature	4534K			
Chromaticity coordinate	X: 0.3628 Y: 0.3844			
Luminous flux	0.38991lm			
Luminous efficiency	7.031lm/w			
Measure environmental temperature	150 °C			
Double value working temperature	20 °C			
Color rendering index	R1=75	R2=90	R3=95	R4=66
	R4=59	R5=75	R6=80	R7=40
	R9=-1	R10=73		

Classification	Text Item	Test Conditions	Result
Endurance Test	Operation Life	Connect with a power if=30mA Ta=Under room temperature Test time=1,000hrs	0/100
	High Temperature High Humidity Storage	Ta=85°C ± 5°C RH=90% -95% Test time=1,000hrs	0/100
	High Temperature Storage	High Ta=105°C ± 5°C Test time=1,000hrs	0/100
	Low Temperature Storage	Low Ta=35°C ± 5°C Test time=1,000hrs	0/100
Environmental Test	Temperature Cyling	-35°C ~ 25°C ~ 105°C ~ 25°C 30min 5min 30min 5min Test Time=10cycle	0/100
	Thermal Shock	105°C ± 5°C ~ -35°C ± 5°C 10min 10min Test Time=10cycle	0/100
	Solder Resistance	T.sol=260°C ± 5°C Dwell Time=10 ± 1sec.	0/50
	Solderability	T.sol=230°C ± 5°C Dwell Time=5 ± 1sec.	0/50
	Lead Bending Stress	0° ~ 90° ~ 0° bend, 3cycles Weight 250g	0/50



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- (1) - GaAsP/GaAs 655nm/Red
- (2) - GaP 570nm/Yellow Green
- (3) - GaAsP/GaP 585nm/Yellow
- (4) - GaAsP/GaP 635nm/Orange & Hi-Eff Red
- (5) - GaP 700nm/Bright Red
- (6) - GaAlAs/GaAs 660nm/Super Red
- (8) - GaAsP/GaP 610nm/Super Red

- (9) - GaAlAs 880nm
- (10) - GaAs/GaAs & GaAlAs/GaAs 940nm
- (A) - GaN/SiC 430nm/Blue
- (B) - InGaN/SiC 470nm/Blue
- (C) - InGaN/SiC 505nm/Ultra Green
- (D) - InGaAl/SiC 525nm/Ultra Green



FORWARD VOLTAGE (Vf)
FORWARD CURRENT VS.
FORWARD VOLTAGE



FORWARD CURRENT (mA)
RELATIVE LUMINOUS
INTENSITY VS. FORWARD
CURRENT



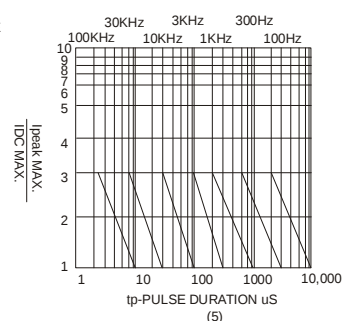
AMBIENT TEMPERATURE Ta (°C)
FORWARD CURRENT VS. AMBIENT
TEMPERATURE



AMBIENT TEMPERATURE Ta (°C)



tp-PULSE DURATION μS
(1,2,3,4,6,8,B,D,J,K)



tp-PULSE DURATION μS
(5)

NOTE: 25 °C free air temperature unless otherwise specified

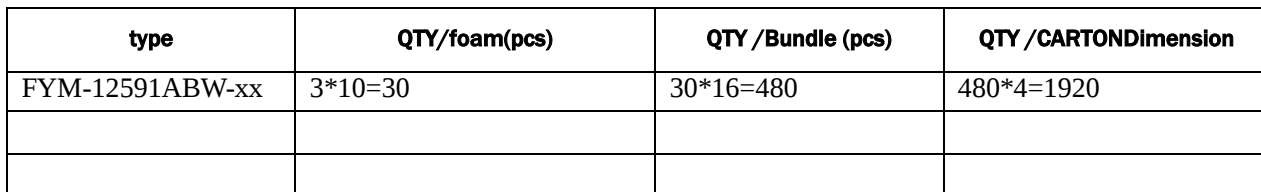
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