

LED NUMERIC DISPLAY

KLS9 **D** - **180** **1** **1** **A** **EG** - **1** **1** - **XXX**
 1 2 3 4 5 6 7 8 9 10

- 1 Brand:KLS ELECTRONIC
- 2 Digit Mode: D-Display
- 3 Digit Character Height: 180-1.80" May be two symbols (If first X is 0 , neglected)
- 4 Digit Number: 1- Single digit 2-Dual digit 3-Three digit 4-Four digit
- 5 Model Number:
- 6 Drive Mode: A. C. E. - Common Cathode B. D. F. - Common Anode Z-Universal
- 7 Color Code:

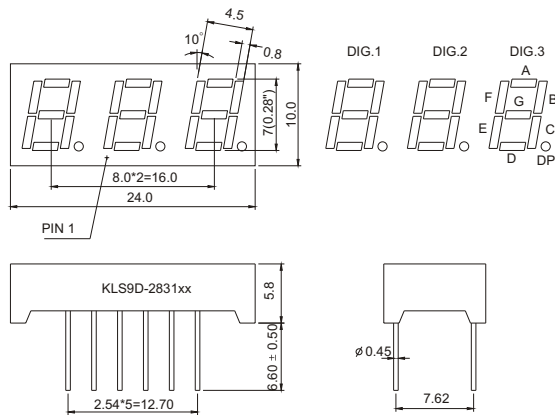
H: Red	GaP/GaP	700nm	UG: High Bright Green	AlGaInP	574nm
S: High Bright Red	GaAlAs/GaAs	SH 660nm	PG: Super Pure Green	AlGaInP	525nm
D: Super Bright Red	GaAlAs/GaAs	DH 660nm	BG: Super Bluish Green	AlGaInP	505nm
UR: Ultra Bright Red	GaAlAs/GaAlAs	DDH 660nm	B: Blue	GaN/SiC	430nm
UHR:Ultra Bright Red	AlGaInP	640nm	UB: Super Bright Blue	InGaN/SiC	470nm
E: Orange	GaAsP/GaP	635nm	V: UV	InGaN/SiC	405nm
UE: High Bright Orange	AlGaInP	630nm	W: White		
Y: Yellow	GaAsP/GaP	585nm	EG: Orange+Green Bi-Color		
UY: High Bright Yellow	AlGaInP	590nm	SG: High Red+Green Bi-Color		
G: Green	GaP/GaP	568nm	RGB:Multicolor		

- 8 Reflector Surface Color: 0-White Surface 1-Black Surface 2-Gray Surface 3-Red Surface
- 9 Segment Epoxy Color: 0-Water Clear 1-White Diffused 2-Red Diffused 3-Green Diffused 4-Yellow Diffused
- 10 Special Device: -Lxx: Pin Length -B: Both Side Decimal Point -N: No Decimal Point

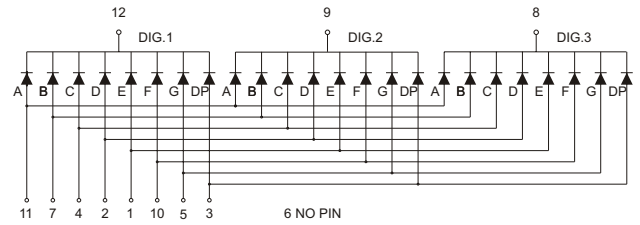
PACKAGE DIMENSION

INTERNAL CIRCUIT DIAGRAM

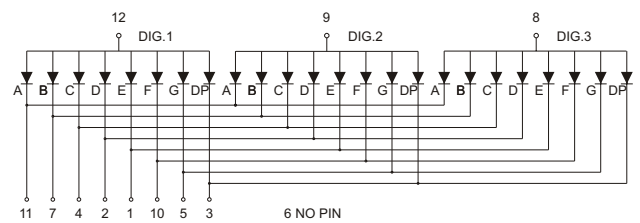
KLS9D-2831 Series



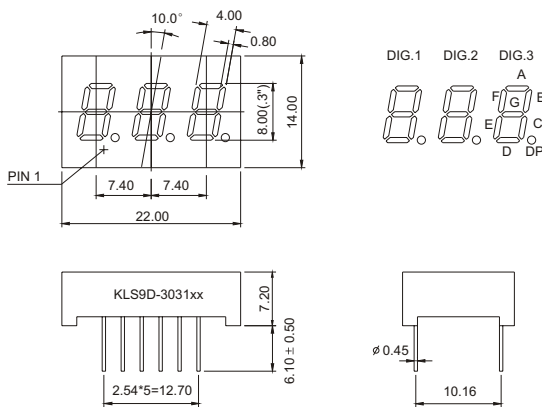
KLS9D-2831Ax



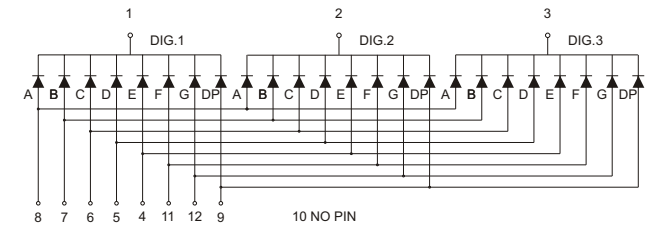
KLS9D-2831Bx



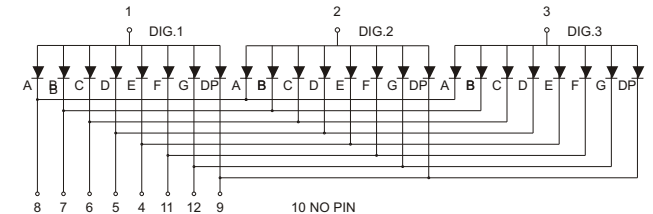
KLS9D-3031 Series



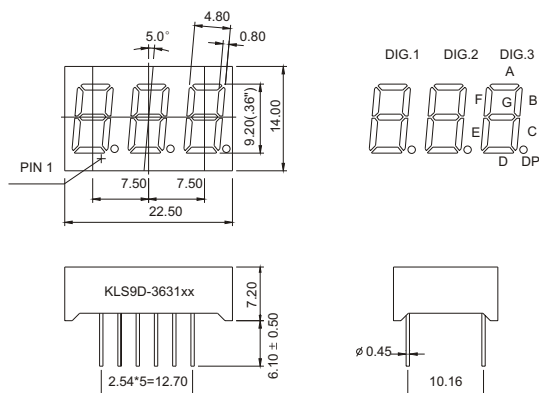
KLS9D-3031Ax



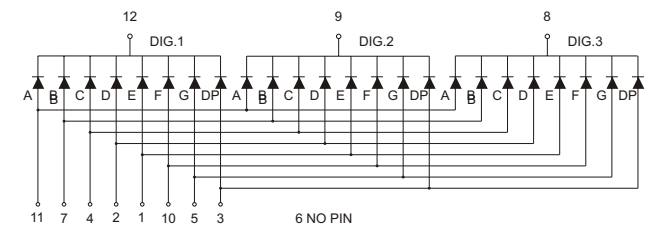
KLS9D-3031Bx



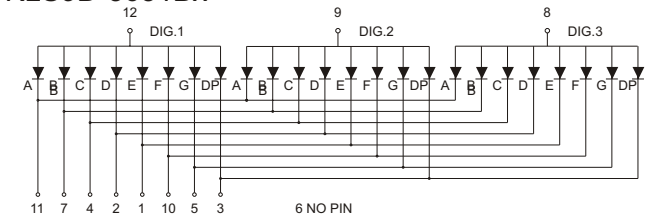
KLS9D-3631 Series



KLS9D-3631Ax



KLS9D-3631Bx



Electrical-Optical Characteristics (Ta=25°C)

PARAMETER	SYMBOL	DEVICES	CODE	TYP	MAX	UNIT	TEST CONDITIONS
Forward Voltage	V _F	RED	H	2.25	2.60	V	I _F =20mA
		HI-RED	S	1.85	2.20		
		SUPER-RED	D	1.85	2.20		
		ORANGE	E	2.10	2.50		
		GREEN	G	2.20	2.50		
		YELLOW	Y	2.10	2.50		
Peak Emission Wavelength	λ _p	RED	H	700		nm	I _F =20mA
		HI-RED	S	660			
		SUPER-RED	D	660			
		ORANGE	E	635			
		GREEN	G	568			
		YELLOW	Y	585			
Spectral Line Half-Width	Δλ	RED	H	90		nm	I _F =20mA
		HI-RED	S	20			
		SUPER-RED	D	20			
		ORANGE	E	35			
		GREEN	G	30			
		YELLOW	Y	35			
Reverse Current	I _R	RED	H		20	μ A	V _R =5V
		HI-RED	S				
		SUPER-RED	D				
		ORANGE	E				
		GREEN	G				
		YELLOW	Y				
Average Luminous Intensity	I _V	RED	H	500		μ cd	I _F =10mA
		HI-RED	S	3500			
		SUPER-RED	D	6000			
		ORANGE	E	2500			
		GREEN	G	2500			
		YELLOW	Y	2000			
Segment-to-Segment Luminous Intensity Ratio	I _V -M		ALL MODELS		1.5:1		I _F =20mA

Absolute Maximum Rating(Ta=25°C)

PARAMETER	RED (Gap)	Hi-RED (GaAlAs/GaAs)	SUPER-RED (GaAlAs/GaAs)	ORANGE (GaAsP/Gap)	GREEN (Gap)	YELLOW (GaAsP/Gap)	UNIT
Reverse voltage V _R	5	5	5	5	5	5	V
Forward current I _F	15	25	25	30	30	30	mA
Peak forward current I _{FP}	50	150	150	150	150	150	mA
Power dissipation P _D	40	60	60	80	80	80	mW
Operating temperature T _{OPR}	-40~+80	-40~+80	-40~+80	-40~+80	-40~+80	-40~+80	
Storage temperature T _{STG}	-40~+85	-40~+85	-40~+85	-40~+85	-40~+85	-40~+85	
Lead soldering temperature	1.60mm from body-maximum 3 second for 260±5						

Remark: Duty cycle: 1:10, Pluse width: 0.1ms

Typical Electrical-Optical Characteristics Curves

