

0.4" AllnGaP Seven-Segment Numeric LED Display

LTS-4X01A

LTD-4000 Series

LTC-4000

Features

- 0.4 inch (10.0mm) digit height.
- Choices of three bright colors: AllnGaP super red/AllnGaP yellow orange/AllnGaPyellow.
- Low power requirement.
- Excellent characters appearance.
- Categorized for luminous intensity.
- I.C. compatible.
- Easy mounting on P.C. board or socket.

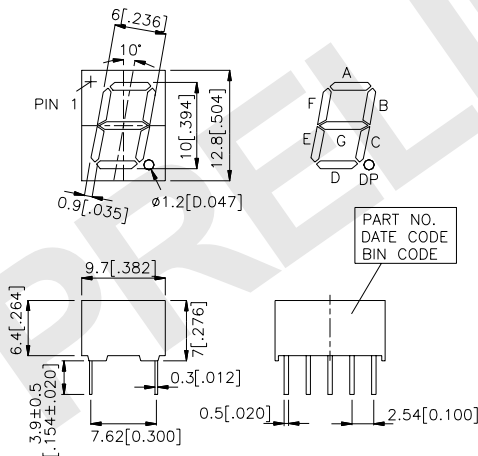
Descriptions

The LTS-4X01A, LTD-4000, LTC-4000 series are 0.4 inch (10.0mm) height single, dual, triple and quadruple digit displays. All device have gray face and white segment.

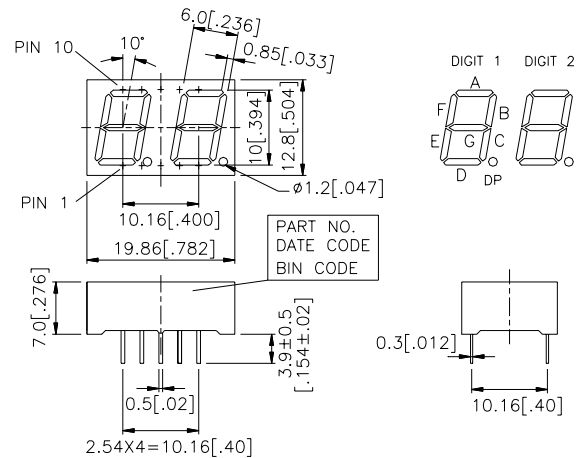
The AllnGaP super red, AllnGaP yellow orange and AllnGaP yellow series devices utilize LED chips which are made from AllnGaP on a non-transparent GaAs substrate.

Package Dimensions

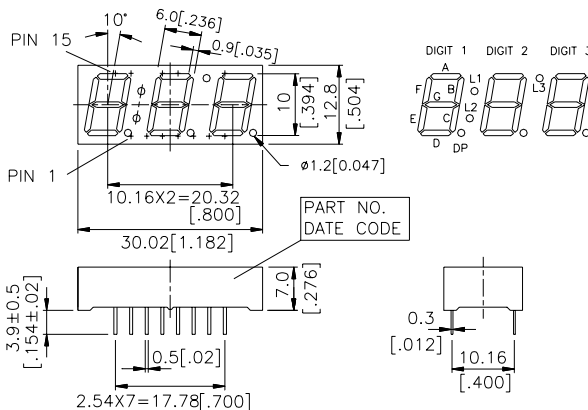
A.LTS-4301/4801



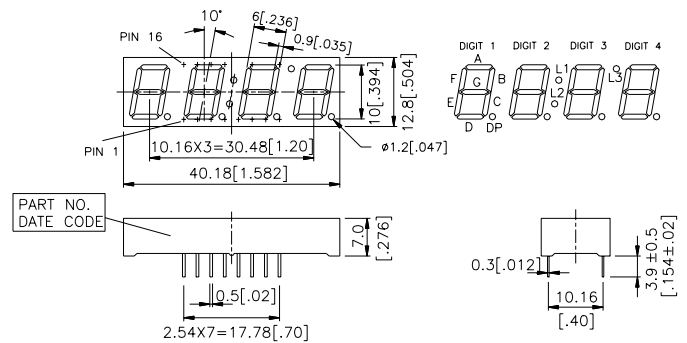
B.LTD-4608/4708



C.LTC-4624/4724



D.LTC-4627/4727



Notes: All dimensions are in millimeters (inches). Tolerance: $\pm 0.25\text{mm}$ (0.01") unless otherwise noted.

Devices

Part No.			Description	Package Dimension	Internal Circuit Diagram
AllnGaP Super Red	AllnGaP Yellow Orange	AllnGaP Yellow			
LTS-4301JR	LTS-4301JF	LTS-4301JS	Common Cathode, Rt. Hand Decimal	A	A
LTS-4801JR	LTS-4801JF	LTS-4801JS	Common Anode, Rt. Hand Decimal	A	B
LTD-4608JR	LTD-4608JF	LTD-4608JS	Dualplex Common Anode, Rt. Hand Decimal	B	C
LTD-4708JR	LTD-4708JF	LTD-4708JS	Dualplex Common Cathode, Rt. Hand Decimal	B	D
LTC-4624JR	LTC-4624JF	LTC-4624JS	Multiplex Common Anode, Rt. Hand Decimal	C	E
LTC-4724JR	LTC-4724JF	LTC-4724JS	Multiplex Common Cathode, Rt. Hand Decimal	C	F
LTC-4627JR	LTC-4627JF	LTC-4627JS	Multiplex Common Anode, Rt. Hand Decimal	D	G
LTC-4727JR	LTC-4727JF	LTC-4727JS	Multiplex Common Cathode, Rt. Hand Decimal	D	H

Pin Connection

Pin No.	Connection	
	A.LTS-4301	B.LTS-4801
1.	Anode G	Cathode G
2.	Anode F	Cathode F
3.	Common Cathode	Common Anode
4.	Anode E	Cathode E
5.	Anode D	Cathode D
6.	Anode D.P.	Cathode D.P.
7.	Anode C	Cathode C
8.	Common Cathode	Common Anode
9.	Anode B	Cathode B
10.	Anode A	Cathode A

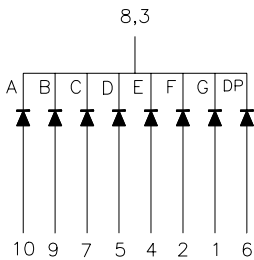
Pin No.	Connection	
	C.LTD-4608	D.LTD-4708
1.	Cathode C	Anode C
2.	Cathode D.P.	Anode D.P.
3.	Cathode E	Anode E
4.	Common Anode Digit 2	Common Cathode Digit 2
5.	Cathode D	Anode D
6.	Cathode F	Anode F
7.	Cathode G	Anode G
8.	Cathode B	Anode B
9.	Common Anode Digit 1	Common Cathode Digit 1
10.	Cathode A	Anode A

Pin No.	Connection	
	E.LTC-4624	F.LTC-4724
1.	Common Anode Digit 1	Common Cathode Digit 1
2.	Cathode E	Anode E
3.	Cathode C, L3	Anode C, L3
4.	Cathode D	Anode D
5.	Common Anode Digit 2	Common Cathode Digit 2
6.	Cathode D.P.	Anode D.P.
7.	Common Anode Digit 3	Common Cathode Digit 3
8.	Cathode G	Anode G
9.	No Pin	No Pin
10.	No Pin	No Pin
11.	Cathode B, L2	Anode B, L2
12.	Cathode A, L1	Anode A, L1
13.	No Pin	No Pin
14.	Common Anode L1, L2, L3	Common Cathode L1, L2, L3
15.	Cathode F	Anode F

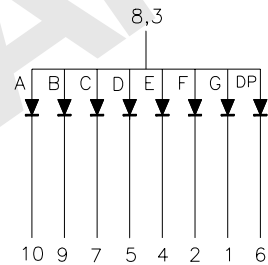
Pin No.	Connection	
	G.LTC-4627	H.LTC-4727
1.	Common Anode Digit 1	Common Cathode Digit 1
2.	Common Anode Digit 2	Common Cathode Digit 2
3.	Cathode D	Anode D
4.	Common Anode L1, L2, L3	Common Cathode L1, L2, L3
5.	Cathode E	Anode E
6.	Common Anode Digit 3	Common Cathode Digit 3
7.	Cathode D.P.	Anode D.P.
8.	Common Anode Digit 4	Common Cathode Digit 4
9.	No Connection	No Connection
10.	No Pin	No Pin
11.	Cathode F	Anode F
12.	No Pin	No Pin
13.	Cathode C, L3	Anode C, L3
14.	Cathode A, L1	Anode A, L1
15.	Cathode G	Anode G
16.	Cathode B, L2	Anode B, L2

Internal Circuit Diagrams

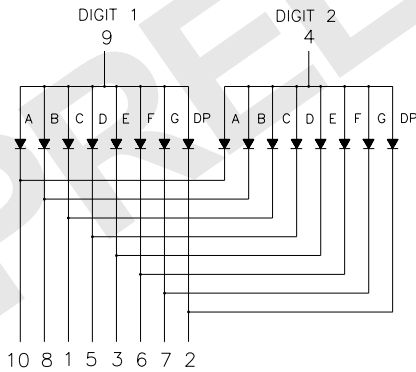
A.LTS-4301



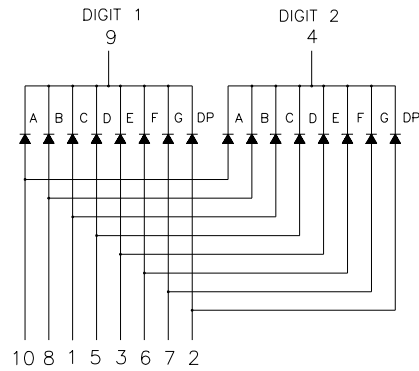
B.LTS-4801



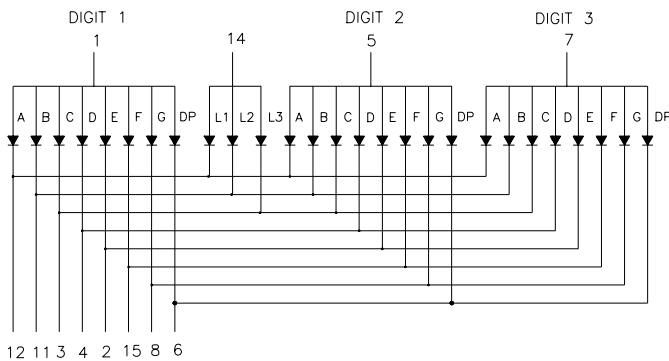
C.LTD-4608



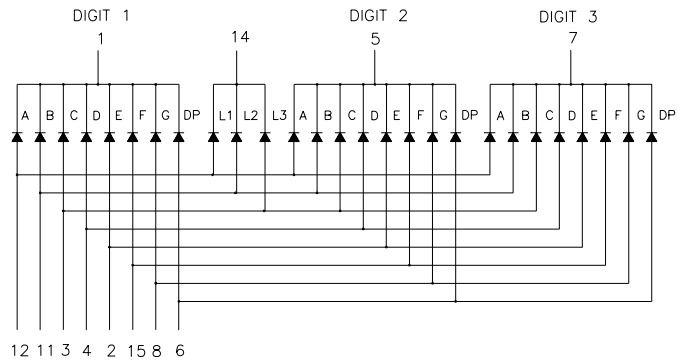
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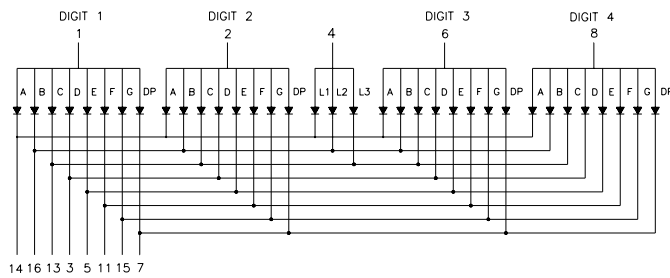
E.LTC-4624



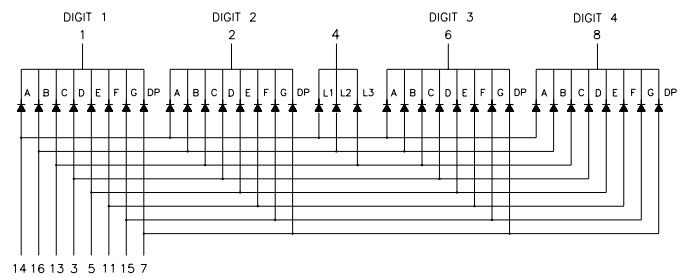
F.LTC-4724



G.LTC-4627



H.LTC-4727



Absolute Maximum Ratings at Ta=25°C

Parameter	AllInGaP Super Red	AllInGaP Yellow Orange	AllInGaP Yellow	Unit
Average Power Dissipation Per Dot	75	75	75	mW
Peak Forward Current Per Dot	100	100	100	mA
Average Forward Current Per Dot	25	25	25	mA
Derating Linear from 25°C Per Dot	0.33	0.33	0.33	mA/°C
Reverse Voltage Per Dot	5	5	5	V
Operating Temperature Range	-35°C to +85°C			
Storage Temperature Range	-35°C to +85°C			
Solder Temperature 1/16 Inch Below Seating Plane for 3 Seconds at 260°C				

LTS-4301JR/4801JR/LTD-4608JR/4708JR/LTC-4624JR/4724JR/4627JR/4727JR

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Condition
Average Luminous Intensity	I _v	200	650		μ cd	I _F =1mA
Peak Emission Wavelength	λ _P		639		nm	I _F =20mA
Spectral Line Half-Width	Δλ		20		nm	I _F =20mA
Dominant Wavelength	λ _d		631		nm	I _F =20mA
Forward Voltage, any Dot	V _F		2.0	2.6	V	I _F =20mA
Reverse Current, any Dot	I _R			100	μ A	V _R =5V
Luminous Intensity Matching Ratio	I _v -m			2:1		I _F =10mA

LTS-4301JF/4801JF/LTD-4608JF/4708JF/LTC-4624JF/4724JF/4627JF/4727JF

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Condition
Average Luminous Intensity	I _v	200	650		μ cd	I _F =1mA
Peak Emission Wavelength	λ _P		611		nm	I _F =20mA
Spectral Line Half-Width	Δλ		17		nm	I _F =20mA
Dominant Wavelength	λ _d		605		nm	I _F =20mA
Forward Voltage, any Dot	V _F		2.05	2.6	V	I _F =20mA
Reverse Current, any Dot	I _R			100	μ A	V _R =5V
Luminous Intensity Matching Ratio	I _v -m			2:1		I _F =10mA

LTS-4301JS/4801JS/LTD-4608JS/4708JS/LTC-4624JS/4724JS/4627JS/4727JS

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Condition
Average Luminous Intensity	I _v	200	650		μ cd	I _F =1mA
Peak Emission Wavelength	λ _P		588		nm	I _F =20mA
Spectral Line Half-Width	Δλ		15		nm	I _F =20mA
Dominant Wavelength	λ _d		587		nm	I _F =20mA
Forward Voltage, any Dot	V _F		2.05	2.6	V	I _F =20mA
Reverse Current, any Dot	I _R			100	μ A	V _R =5V
Luminous Intensity Matching Ratio	I _v -m			2:1		I _F =10mA

Note: Luminous intensity is measured with a light sensor and filter combination that approximates the CIE (Commission Internationale De L'Eclairage) eye-response curve.

Typical Electrical/Optical Characteristic Curves (25°C Ambient Temperature Unless Otherwise Noted)

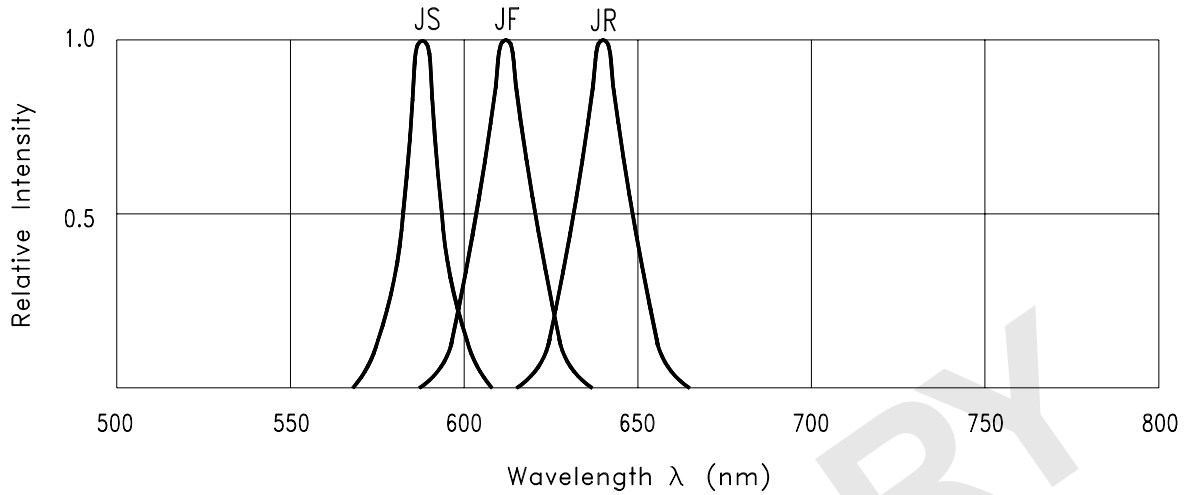


Fig.1 Relative Intensity vs. Wavelength

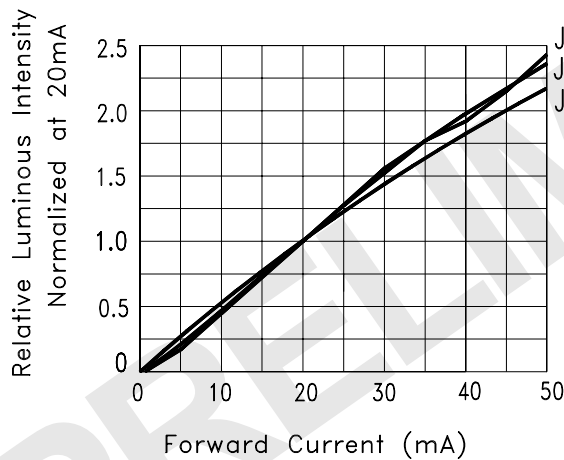


Fig.2 Relative Luminous Intensity vs. Forward Current

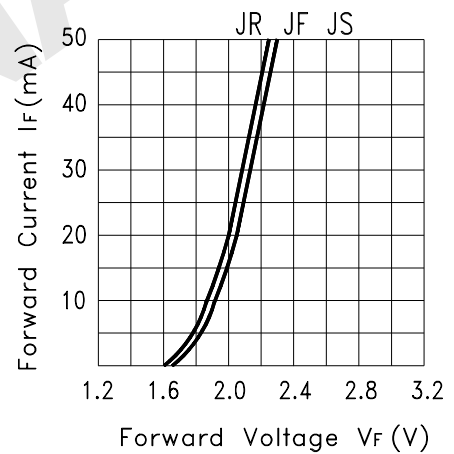


Fig.3 Forward Current vs. Forward Voltage

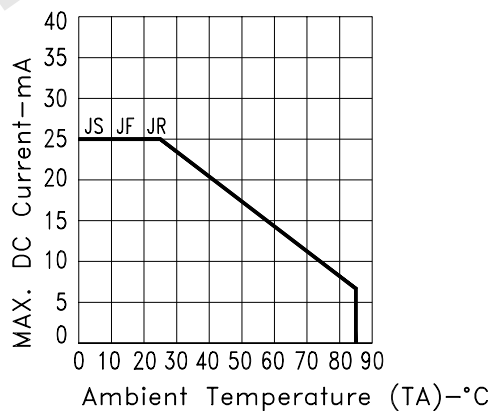


Fig.4 MAX. Allowable DC Current vs. Ambient Temperature.

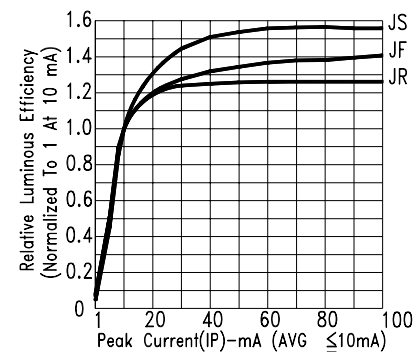


Fig.5. RELATIVE LUMINOUS EFFICIENCY (LUMINOUS INTENSITY PER UNIT CURRENT) vs. PEAK CURRENT