



0.52" Seven-Segment Numeric LED Display

LTS-540A

LTD-5200

Series

LTC-5300/5800

Features

- 0.52 inch (13.2mm) digit height
- Continuous uniform segments.
- Choices of six bright colors-red/bright red/green/yellow/orange/high efficiency red.
- Low power requirement.
- Excellent characters appearance.
- High brightness.
- Wide viewing angle.
- Solid state reliability.
- Categorized for luminous intensity.
- I.C. compatible.
- Easy mounting on P.C. board or socket.

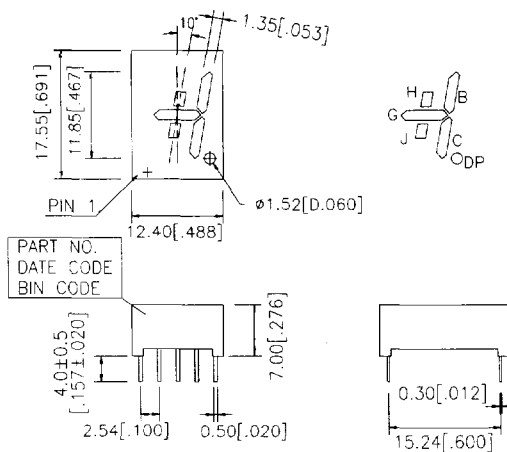
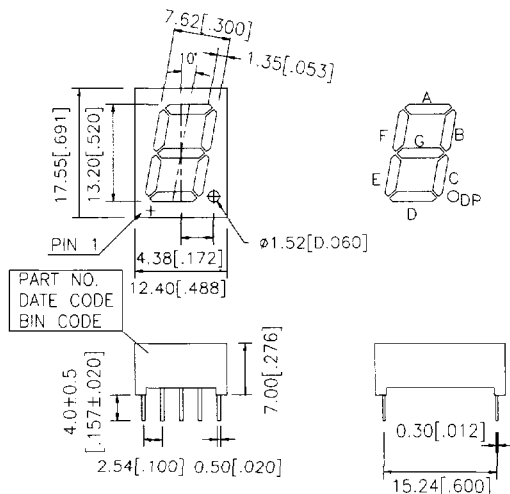
Description

The LTS-540A, LTD-5000, LTC-5000 series are 0.52 inch (13.2mm) height 7-Segment displays. The red series devices utilize LED chips which are made from GaAsP on a GaAs substrate. The bright red and green series devices utilize LED chips which are made from Gap on a transparent GaP substrate. The yellow orange and high efficiency red series devices are utilize LED chips which are made from GaAsP on a transparent GaP substrate. Red,bright red,yellow and orange displays have gray face and white segments. Green displays have gray face and green segments. High efficiency red displays have red face and red segments.

Package Dimensions

A.LTS-546A/547A

B.LTS-548A/549A



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

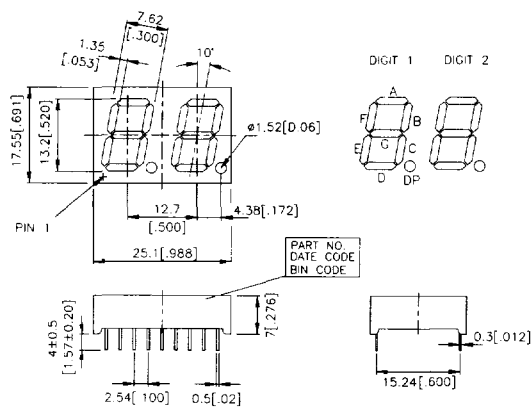
Devices

Part No.LTS-						Description	Package Dimension	Internal Circuit Diagram
Red	Bright Red	Green	Yellow	Orange	Hi.- Eff.Red			
546AR	546AP	546AG	546AY	546AE	546AHR	Common Anode, Rt. Hand Decimal	A	A
547AR	547AP	547AG	547AY	547AE	547AHR	Common Cathode, Rt. Hand Decimal	A	B
548AR	548AP	548AG	548AY	548AE	548AHR	Common Anode, Rt. Hand Decimal	B	C
549AR	549AP	549AG	549AY	549AE	549AHR	Common Cathode, Rt. Hand Decimal	B	D

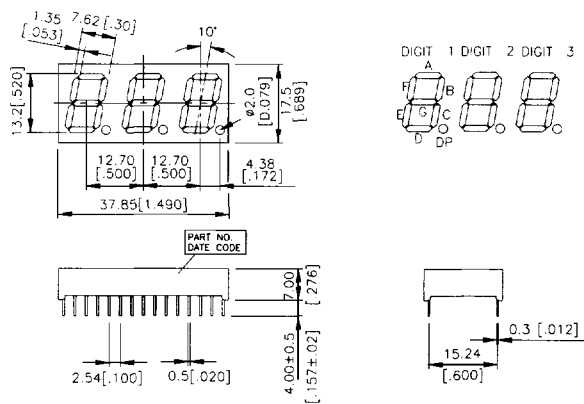
Part No.LTD-						Description	Package Dimension	Internal Circuit Diagram
Red	Bright Red	Green	Yellow	Orange	Hi.- Eff.Red			
5250R	5250P	5250G	5250Y	5250E	5250HR	Common Anode, Rt. Hand Decimal	C	E
5260R	5260P	5260G	5260Y	5260E	5260HR	Common Cathode, Rt. Hand Decimal	C	F

Part No.LTC-						Description	Package Dimension	Internal Circuit Diagram
Red	Bright Red	Green	Yellow	Orange	Hi.- Eff.Red			
5336R	5336P	5336G	5336Y	5336E	5336HR	Common Cathode, Rt. Hand Decimal	D	G
5836R	5836P	5836G	5836Y	5836E	5836HR	Common Anode, Rt. Hand Decimal	D	H
5337R	5337P	5337G	5337Y	5337E	5337HR	Common Cathode, Rt. Hand Decimal	E	I
5837R	5837P	5837G	5837Y	5837E	5837HR	Common Anode, Rt. Hand Decimal	E	J

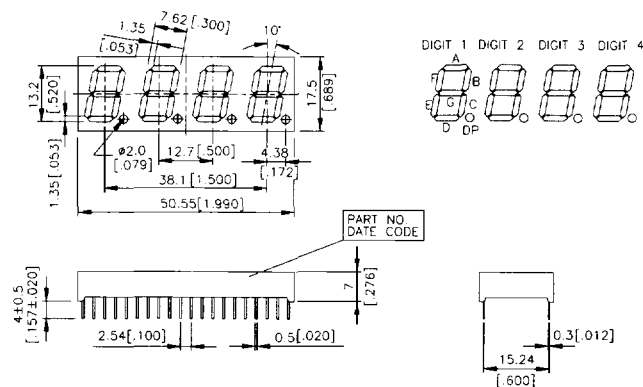
C.LTD-5250/5260



D.LTC-5336/5836



E.LTC-5337/5837



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

Pin Connection

Pin No.	Connection			
	A.LTS-546A	B.LTS-547A	C.LTS-548A	D.LTS-549A
1.	Cathode E	Anode E	Cathode J	Anode J
2.	Cathode D	Anode D	No Connection	No Connection
3.	Common Anode*	Common Cathode*	Common Anode*	Common Cathode*
4.	Cathode C	Anode C	Cathode C	Anode C
5.	Cathode D.P.	Anode D.P.	Cathode D.P.	Anode D.P.
6.	Cathode B	Anode B	Cathode B	Anode B
7.	Cathode A	Anode A	No Connection	No Connection
8.	Common Anode*	Common Cathode*	Common Anode*	Common Cathode*
9.	Cathode F	Anode F	Cathode H	Anode H
10.	Cathode G	Anode G	Cathode G	Anode G

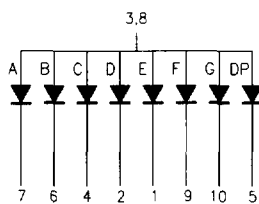
Notes: 1. Pin 3 & 8 are internally connected.

Pin No.	Connection	
	E.LTD-5250	F.LTD-5260
1.	Cathode E (Digit 1)	Anode E (Digit 1)
2.	Cathode D (Digit 1)	Anode D (Digit 1)
3.	Cathode C (Digit 1)	Anode C (Digit 1)
4.	Cathode D.P. (Digit 1)	Anode D.P. (Digit 1)
5.	Cathode E (Digit 2)	Anode E (Digit 2)
6.	Cathode D (Digit 2)	Anode D (Digit 2)
7.	Cathode G (Digit 2)	Anode G (Digit 2)
8.	Cathode C (Digit 2)	Anode C (Digit 2)
9.	Cathode D.P. (Digit 2)	Anode D.P. (Digit 2)
10.	Cathode B (Digit 2)	Anode B (Digit 2)
11.	Cathode A (Digit 2)	Anode A (Digit 2)
12.	Cathode F (Digit 2)	Anode F (Digit 2)
13.	Common Anode (Digit 2)	Common Cathode (Digit 2)
14.	Common Anode (Digit 1)	Common Cathode (Digit 1)
15.	Cathode B (Digit 1)	Anode B (Digit 1)
16.	Cathode A (Digit 1)	Anode A (Digit 1)
17.	Cathode G (Digit 1)	Anode G (Digit 1)
18.	Cathode F (Digit 1)	Anode F (Digit 1)

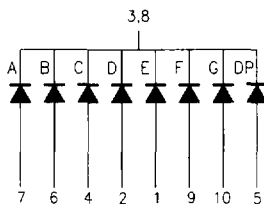
Pin No.	Connetcion			
	G.LTC-5336	H.LTC-5836	I.LTC-5337	J.LTC-5837
1.	Anode E (Digit 1)	Cathode E (Digit 1)	Anode E (Digit 1)	Cathode E (Digit 1)
2.	Anode D (Digit 1)	Cathode D (Digit 1)	Anode D (Digit 1)	Cathode D (Digit 1)
3.	Common Cathode (Digit 1)	Common Anode (Digit 1)	Common Cathode (Digit 1)	Common Anode (Digit 1)
4.	Anode C (Digit 1)	Cathode C (Digit 1)	Anode C (Digit 1)	Cathode C (Digit 1)
5.	Anode D.P.(Digit 1)	Cathode D.P. (Digit 1)	Anode D.P.(Digit 1)	Cathode D.P. (Digit 1)
6.	Anode E (Digit 2)	Cathode E (Digit 2)	Anode E (Digit 2)	Cathode E (Digit 2)
7.	Anode D (Digit 2)	Cathode D (Digit 2)	Anode D (Digit 2)	Cathode D (Digit 2)
8.	Common Cathode (Digit 2)	Common Anode (Digit 2)	Common Cathode (Digit 2)	Common Anode (Digit 2)
9.	Anode C (Digit 2)	Cathode C (Digit 2)	Anode C (Digit 2)	Cathode C (Digit 2)
10.	Anode D.P. (Digit 2)	Cathode D.P. (Digit 2)	Anode D.P. (Digit 2)	Cathode D.P. (Digit 2)
11.	Anode E (Digit 3)	Cathode E (Digit 3)	Anode E (Digit 3)	Cathode E (Digit 3)
12.	Anode D (Digit 3)	Cathode D (Digit 3)	Anode D (Digit 3)	Cathode D (Digit 3)
13.	Common Cathode (Digit 3)	Common Anode (Digit 3)	Common Cathode (Digit 3)	Common Anode (Digit 3)
14.	Anode C (Digit 3)	Cathode C (Digit 3)	Anode C (Digit 3)	Cathode C (Digit 3)
15.	Anode D.P. (Digit 3)	Cathode D.P. (Digit 3)	Anode D.P. (Digit 3)	Cathode D.P. (Digit 3)
16.	Anode B (Digit 3)	Cathode B (Digit 3)	Anode E (Digit 4)	Cathode E (Digit 4)
17.	Anode A (Digit 3)	Cathode A (Digit 3)	Anode D (Digit 4)	Cathode D (Digit 4)
18.	Common Cathode (Digit 3)	Common Anode (Digit 3)	Common Cathode (Digit 4)	Common Anode (Digit 4)
19.	Anode F (Digit 3)	Cathode F (Digit 3)	Anode C (Digit 4)	Cathode C (Digit 4)
20.	Anode G (Digit 3)	Cathode G (Digit 3)	Anode D.P.(Digit 4)	Cathode D.P. (Digit 4)
21.	Anode B (Digit 2)	Cathode B (Digit 2)	Anode B (Digit 4)	Cathode B (Digit 4)
22.	Anode A (Digit 2)	Cathode A (Digit 2)	Anode A (Digit 4)	Cathode A (Digit 4)
23.	Common Cathode (Digit 2)	Common Anode (Digit 2)	Common Cathode (Digit 4)	Common Anode (Digit 4)
24.	Anode F (Digit 2)	Cathode F (Digit 2)	Anode F (Digit 4)	Cathode F (Digit 4)
25.	Anode G (Digit 2)	Cathode G (Digit 2)	Anode G (Digit 4)	Cathode G (Digit 4)
26.	Anode B (Digit 1)	Cathode B (Digit 1)	Anode B (Digit 3)	Cathode B (Digit 3)
27.	Anode A (Digit 1)	Cathode A (Digit 1)	Anode A (Digit 3)	Cathode A (Digit 3)
28.	Common Cathode (Digit 1)	Common Anode (Digit 1)	Common Cathode (Digit 3)	Common Anode (Digit 3)
29.	Anode F (Digit 1)	Cathode F (Digit 1)	Anode F (Digit 3)	Cathode F (Digit 3)
30.	Anode G (Digit 1)	Cathode G (Digit 1)	Anode G (Digit 3)	Cathode G (Digit 3)
31.	-	-	Anode B (Digit 2)	Cathode B (Digit 2)
32.	-	-	Anode A (Digit 2)	Cathode A (Digit 2)
33.	-	-	Common Cathode (Digit 2)	Common Anode (Digit 2)
34.	-	-	Anode F (Digit 2)	Cathode F (Digit 2)
35.	-	-	Anode G (Digit 2)	Cathode G (Digit 2)
36.	-	-	Anode B (Digit 1)	Cathode B (Digit 1)
37.	-	-	Anode A (Digit 1)	Cathode A (Digit 1)
38.	-	-	Common Cathode (Digit 1)	Common Anode (Digit 1)
39.	-	-	Anode F (Digit 1)	Cathode F (Digit 1)
40.	-	-	Anode G (Digit 1)	Cathode G (Digit 1)

Internal Circuit Diagrams

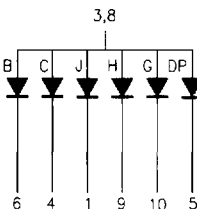
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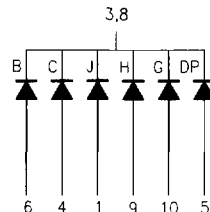
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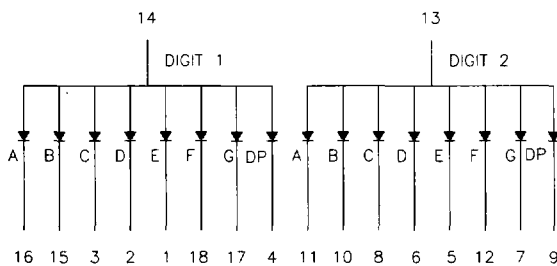
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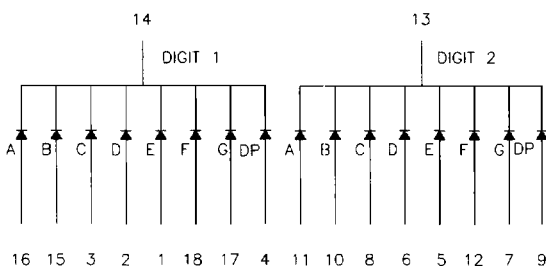
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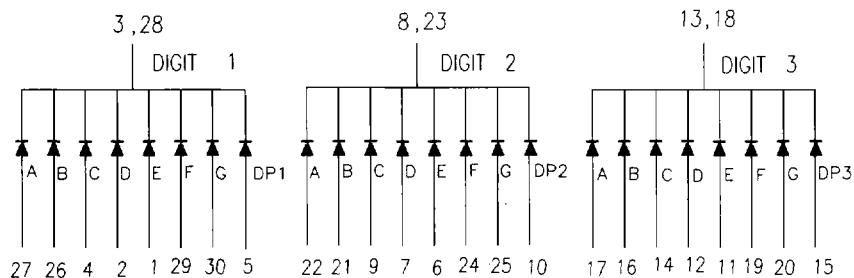
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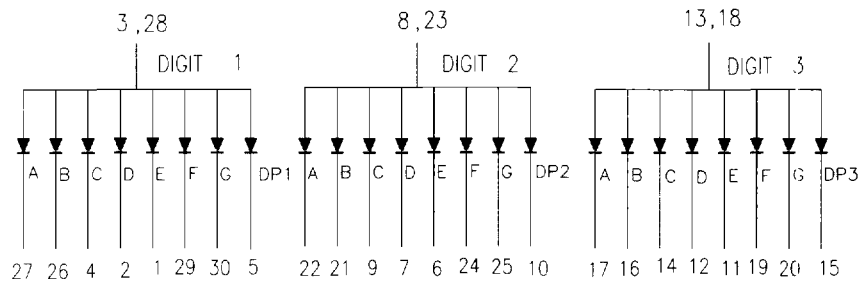
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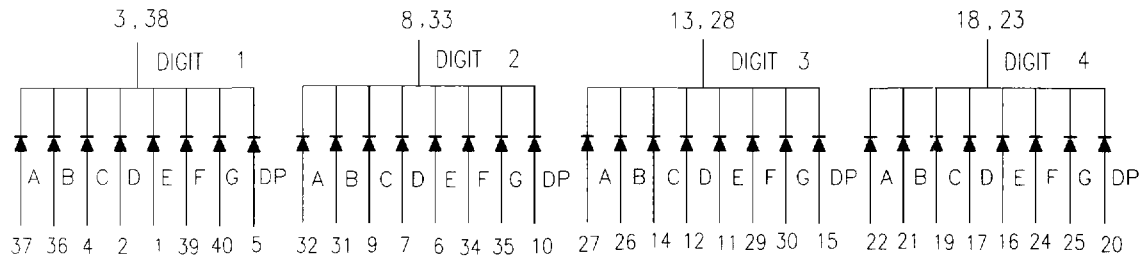
G.LTC-5336



H.LTC-5836

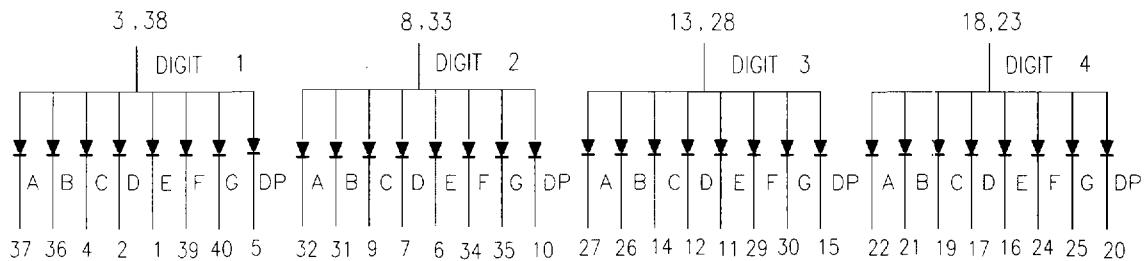


I.LTC-5337



SEVEN-SEGMENT
LED DISPLAYS

J.LTC-5837



Absolute Maximum Rating at Ta=25 °C

Parameter	Red	Bright Red	Green	Yellow	Orange	Hi.-EFF. Red	Unit
Power Dissipation Per Segment	55	40	75	60	75	75	mW
Peak Forward Current Per Segment (1/10 Duty Cycle, 0.1ms Pulse Width)	150	60	100	80	100	100	mA
Continuous Forward Current Per Segment Derating Linear from 25 °C Per Segment	25 0.33	15 0.2	25 0.33	20 0.27	25 0.33	25 0.33	mA mA/ °C
Reverse Voltage Per Segment	5	5	5	5	5	5	V
Operating Temperature Range	-35 °C to +85 °C						
Stroage Temperature Range	-35 °C to +85 °C						
Solder Temperature 1/16 Inch Below Seating Plane for 3 Seconds at 260 °C							

Electrical/Optical Characteristics at Ta=25 °C

LTS-546AR/547AR/548AR/549AR/LTD-5250R/5260R/LTC-5336R/5836R/5337R/5837R

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Condition
Average Luminous Intensity	Iv	200	500		μ cd	IF=10mA
Peak Emission Wavelength	λ P		655		nm	IF=20mA
Spectral Line Half-Width	Δ λ		24		nm	IF=20mA
Dominant Wavelength	λ d		651		nm	IF=20mA
Forward Voltage, Per Segment or D.P.	VF		1.7	2.0	V	IF=20mA
Reverse Current, Per Segment or D.P.	IR			100	μ A	VR=5V
Luminous Intensity Matching Ratio	Iv-m			2:1		IF=10mA

LTS-546AP/547AP/548AP/549AP/LTD-5250P/5260P/LTC-5336P/5836P/5337P/5837P

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Condition
Average Luminous Intensity	Iv	320	800		μ cd	IF=10mA
Peak Emission Wavelength	λ P		697		nm	IF=20mA
Spectral Line Half-Width	Δ λ		90		nm	IF=20mA
Dominant Wavelength	λ d		657		nm	IF=20mA
Forward Voltage, Per Segment or D.P.	VF		2.1	2.8	V	IF=20mA
Reverse Current, Per Segment or D.P.	IR			100	μ A	VR=5V
Luminous Intensity Matching Ratio	Iv-m			2:1		IF=10mA

LTS-546AG/547AG/548AG/549AG/LTD-5250G/5260G/LTC-5336G/5836G/5337G/5837G

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Condition
Average Luminous Intensity	Iv	800	2200		μ cd	IF=10mA
Peak Emission Wavelength	λ P		565		nm	IF=20mA
Spectral Line Half-Width	Δ λ		36		nm	IF=20mA
Dominant Wavelength	λ d		569		nm	IF=20mA
Forward Voltage, Per Segment or D.P.	VF		2.1	2.8	V	IF=20mA
Reverse Current, Per Segment or D.P.	IR			100	μ A	VR=5V
Luminous Intensity Matching Ratio	Iv-m			2:1		IF=10mA

LTS-546AY/547AY/548AY/549AY/LTD-5250Y/5260Y/LTC-5336Y/5836Y/5337Y/5837Y

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Condition
Average Luminous Intensity	I _v	800	2000		μ cd	I _F =10mA
Peak Emission Wavelength	λ _P		585		nm	I _F =20mA
Spectral Line Half-Width	Δ λ		35		nm	I _F =20mA
Dominant Wavelength	λ _d		588		nm	I _F =20mA
Forward Voltage, Per Segment or D.P.	V _F		2.1	2.8	V	I _F =20mA
Reverse Current, Per Segment or D.P.	I _R			100	μ A	V _R =5V
Luminous Intensity Matching Ratio	I _v -m			2:1		I _F =10mA

LTS-546AE/547AE/548AE/549AE/LTD-5250E/5260E/LTC-5336E/5836E/5337E/5837E

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Condition
Average Luminous Intensity	I _v	800	2000		μ cd	I _F =10mA
Peak Emission Wavelength	λ _P		630		nm	I _F =20mA
Spectral Line Half-Width	Δ λ		40		nm	I _F =20mA
Dominant Wavelength	λ _d		621		nm	I _F =20mA
Forward Voltage, Per Segment or D.P.	V _F		2.0	2.8	V	I _F =20mA
Reverse Current, Per Segment or D.P.	I _R			100	μ A	V _R =5V
Luminous Intensity Matching Ratio	I _v -m			2:1		I _F =10mA

LTS-546AHR/547AHR/548AHR/549AHR/LTD-5250HR/5260HR/LTC-5336HR/5836HR/5337HR/5837HR

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Condition
Average Luminous Intensity	I _v	800	2000		μ cd	I _F =10mA
Peak Emission Wavelength	λ _P		635		nm	I _F =20mA
Spectral Line Half-Width	Δ λ		40		nm	I _F =20mA
Dominant Wavelength	λ _d		621		nm	I _F =20mA
Forward Voltage, Per Segment or D.P.	V _F		2.1	2.8	V	I _F =20mA
Reverse Current, Per Segment or D.P.	I _R			100	μ A	V _R =5V
Luminous Intensity Matching Ratio	I _v -m			2:1		I _F =10mA

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

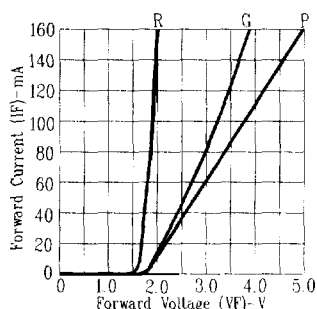
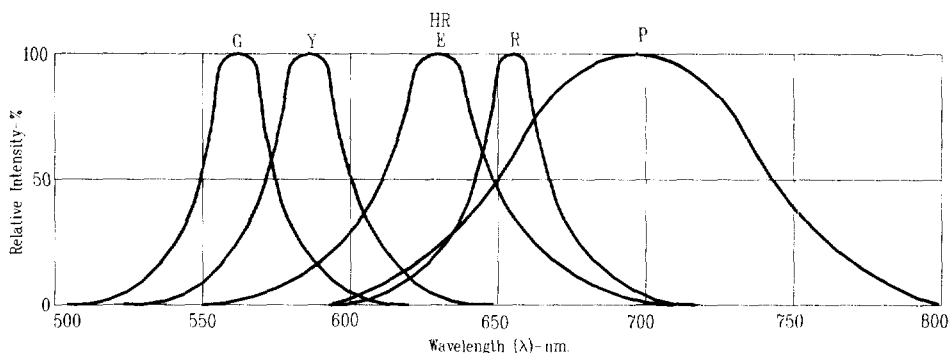
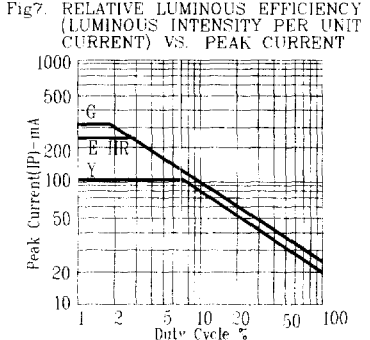
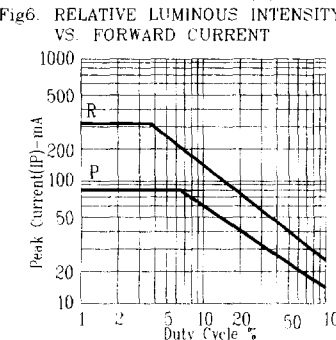
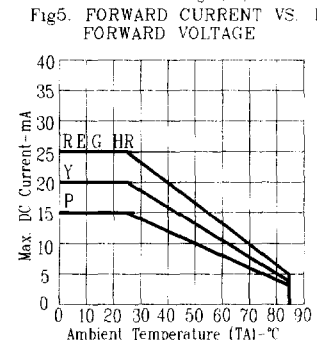
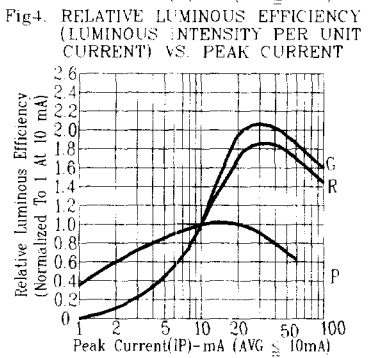
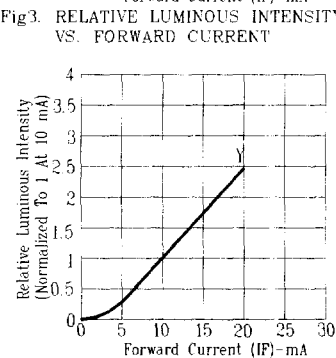
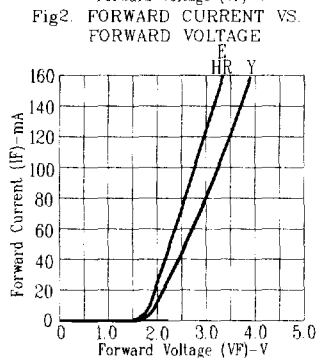
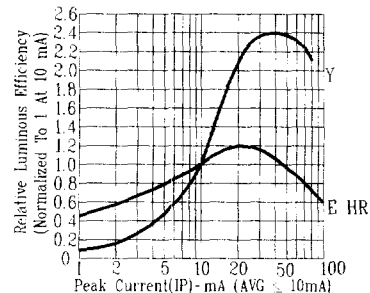
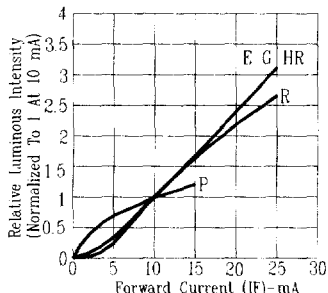


Fig1. RELATIVE INTENSITY VS. WAVELENGTH



NOTE: R=RED P=BRIGHT RED G=GREEN Y=YELLOW E=ORANGE HR=HI-EFF RED (REFRESH RATE 1KHz)