FEATURES

∗0.4 inch (10 mm) DIGIT HEIGHT.
∗CONTINUOUS UNIFORM SEGMENTS.
∗LOW POWER REQUIREMENT.
∗EXCELLENT CHARACTERS APPEARANCE.
∗HIGH BRIGHTNESS & HIGH CONTRAST.
∗WIDE VIEWING ANGLE.
∗SOLID STATE RELIABILITY.

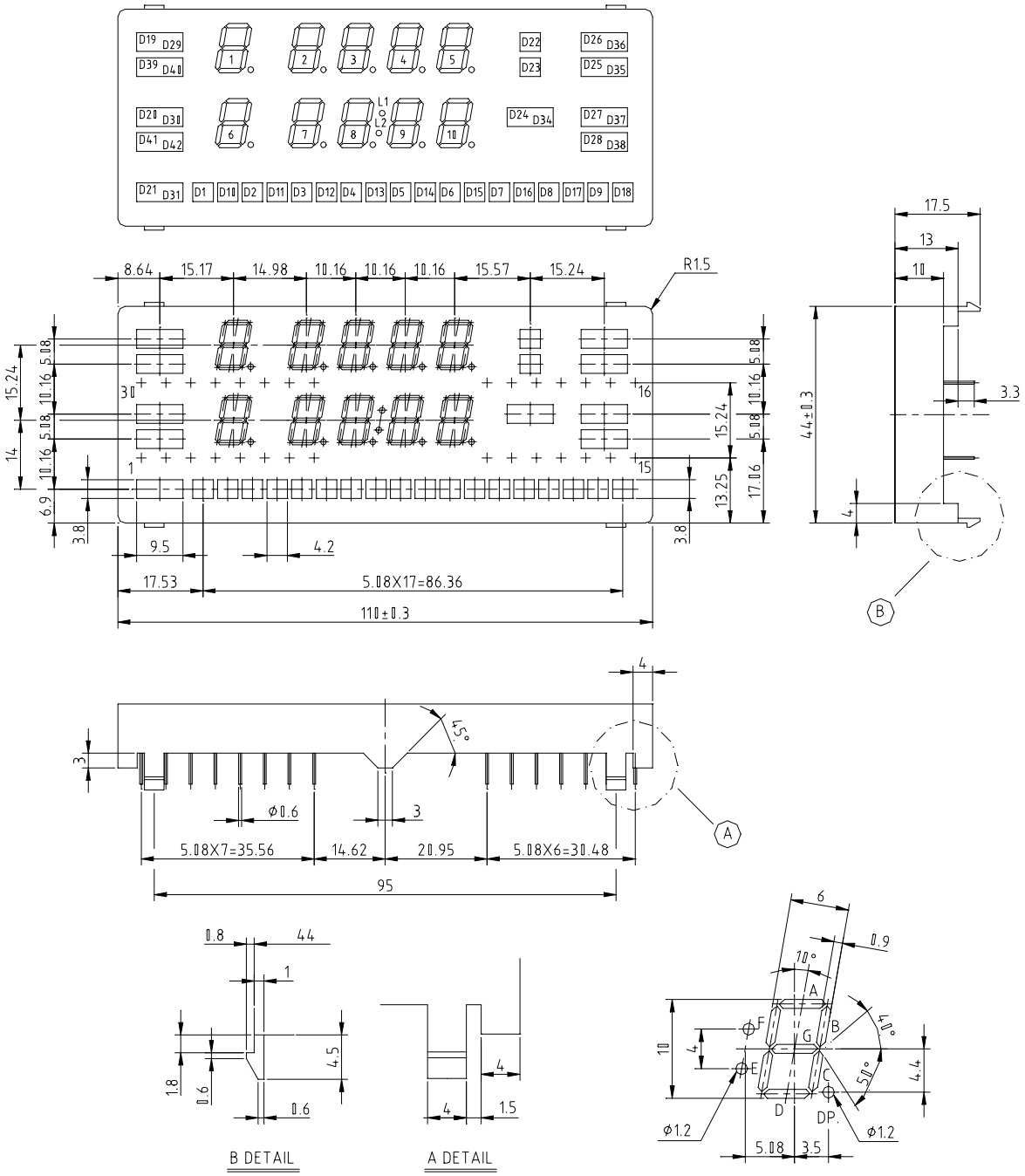
DESCRIPTION

The LTG-9703M is a 0.4 inch (10 mm) height digit display. This device utilizes amber LED chips, which are made from GaAsP on a transparent GaP substrate, and the red orange LED chips, which are made from GaAsP on a transparent GaP substrate, and the high efficiency green LED chips, which are made from GaP on a transparent GaP substrate. The display has gray face and white segments white print tape.

DEVICE

PART NO.	DESCRIPTION
Amber & Red Orange & Hi-Eff. Green	Multiplex Common Cathode Rt. Hand Decimal
LTG-9703M	

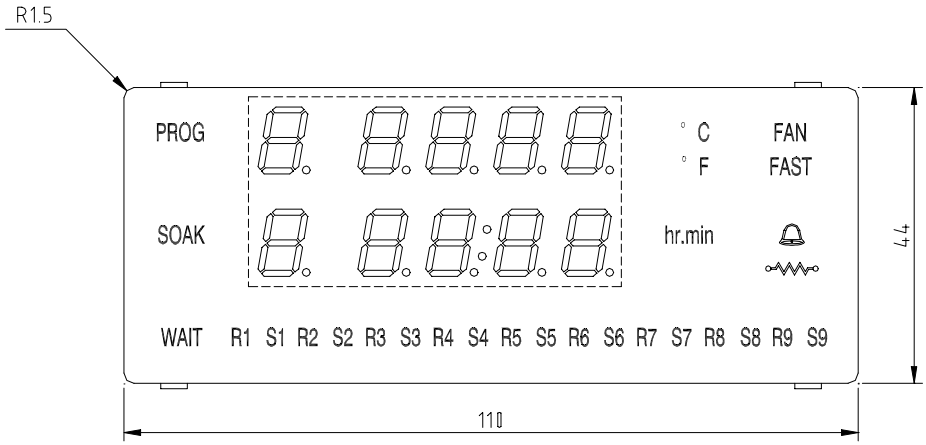
PACKAGE DIMENSIONS



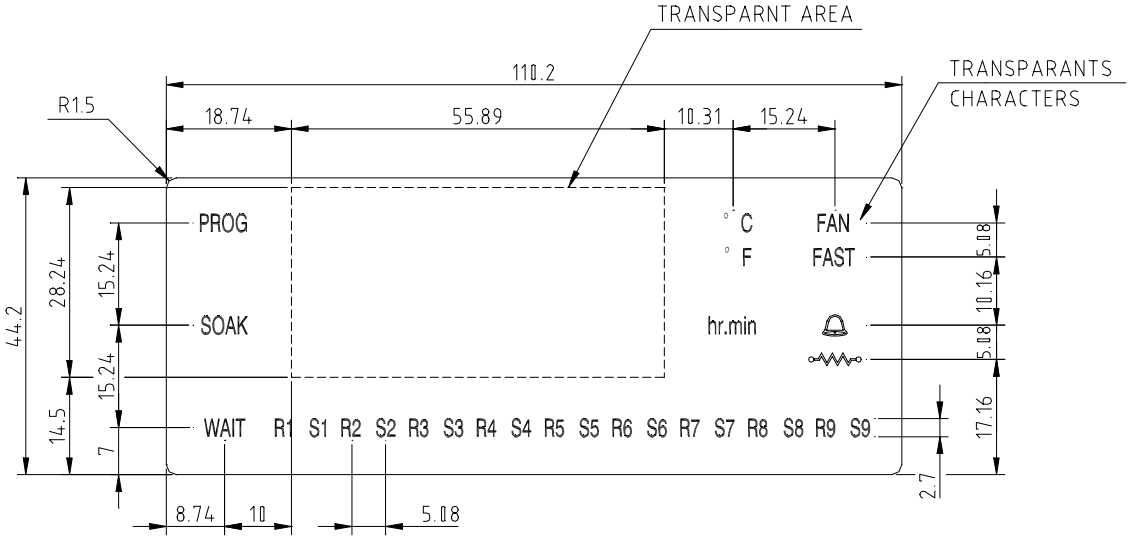
NOTES: All dimensions are in millimeters. Tolerances are± 0.25 mm (0.01“) unless otherwise noted.

PACKAGE DIMENSIONS

FRONT VIEW



TAPE



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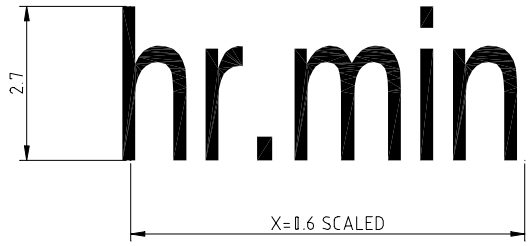
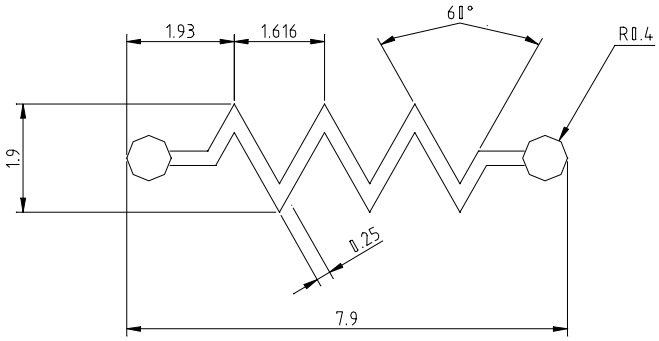
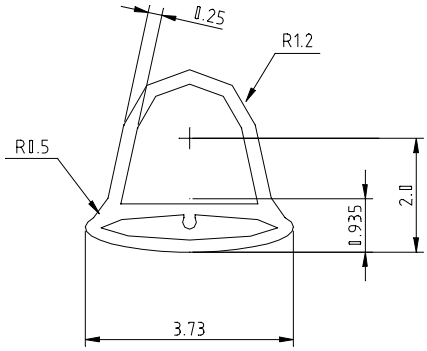
PACKAGE DIMENSIONS

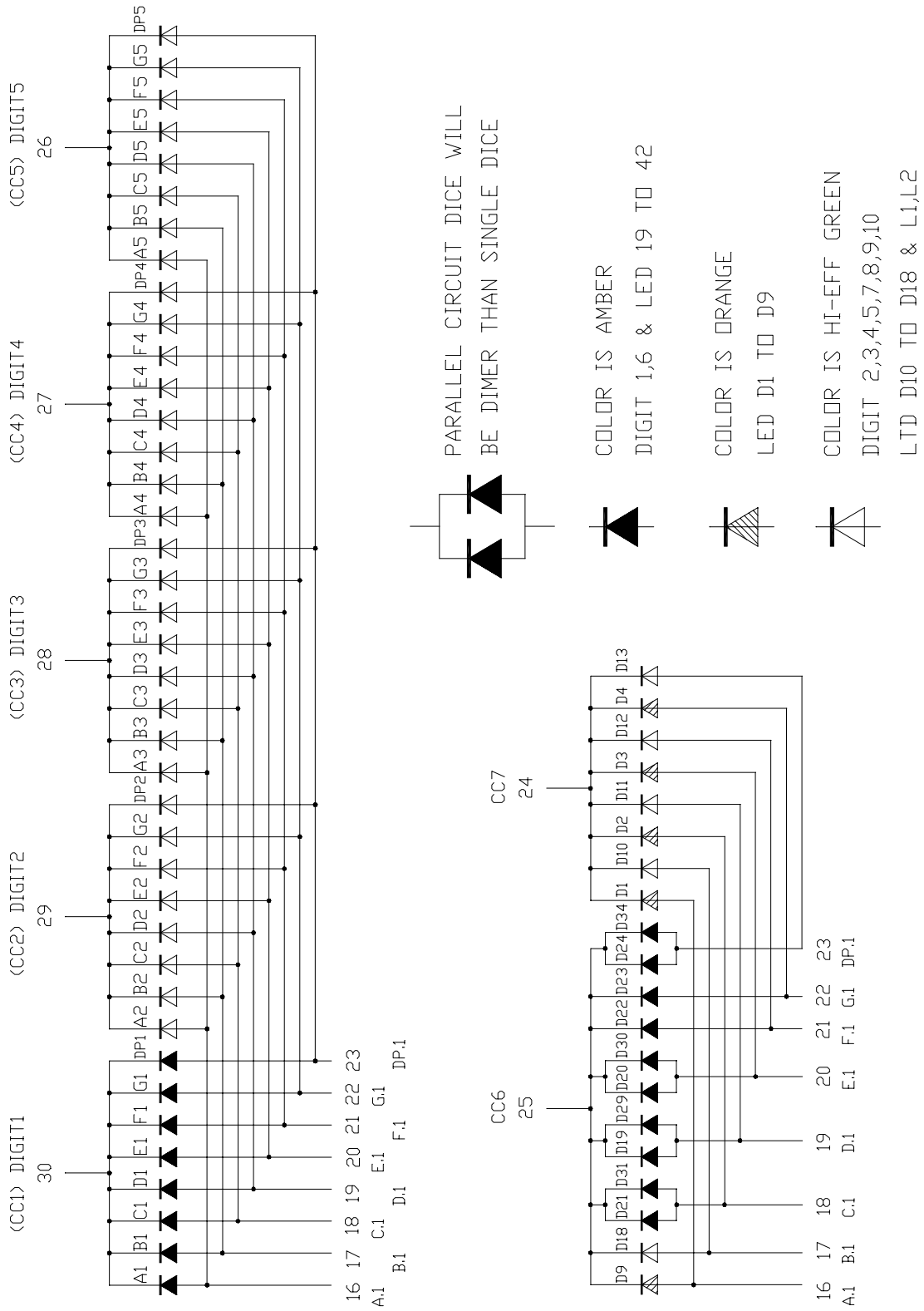




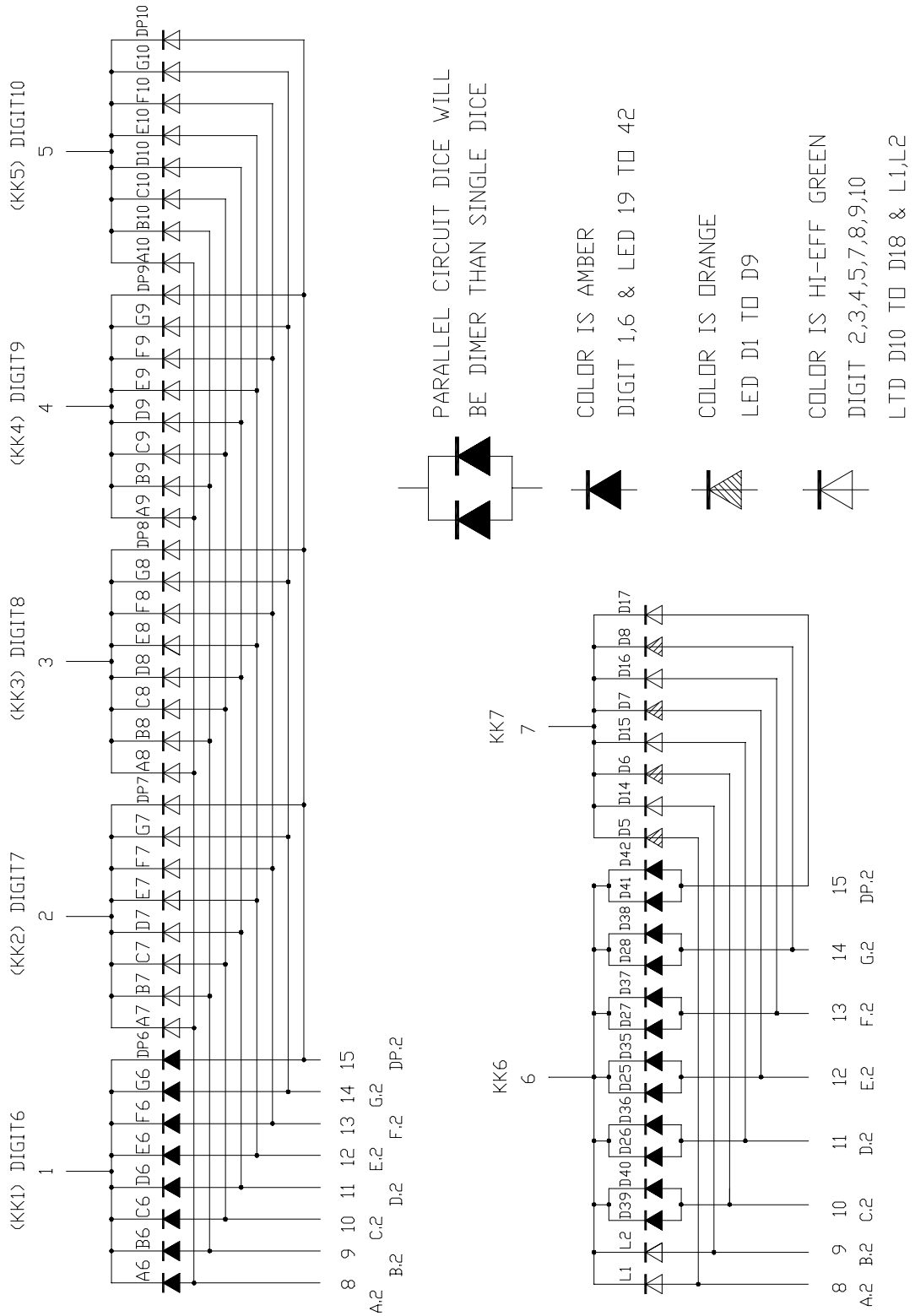


NOTES: All dimensions are in millimeters. Tolerances are± 0.25 mm (0.01“) unless otherwise noted.

INTERNAL CIRCUIT DIAGRAM



INTERNAL CIRCUIT DIAGRAM



PIN CONNECTION

NO.	CONNECTION
1	COMMON CATHODE (KK1) DIGIT 6
2	COMMON CATHODE (KK2) DIGIT 7
3	COMMON CATHODE (KK3) DIGIT 8
4	COMMON CATHODE (KK4) DIGIT 9
5	COMMON CATHODE (KK5) DIGIT 10
6	COMMON CATHODE (KK6)
7	COMMON CATHODE (KK7)
8	ANODE A6,A7,A8,A9,A10,L1,D5
9	ANODE B6,B7,B8,B9,B10,L2,D14
10	ANODE C6,C7,C8,C9,C10,D39,D40,D6
11	ANODE D6,D7,D8,D9,D10,D26,D36,D15
12	ANODE E6,E7,E8,E9,E10,D25,D35,D7
13	ANODE F6,F7,F8,F9,E10,D27,D37,D16
14	ANODE G6,G7,G8,G9,G10,D28,D38,D8
15	ANODE DP6,DP7,DP8,DP9,DP10,D41,D42,D17
16	ANODE A1,A2,A3,A4,A5,D9,D1
17	ANODE B1,B2,B3,B4,B5,D18,D10
18	ANODE C1,C2,C3,C4,C5,D21,D31,D2
19	ANODE D1,D2,D3,D4,D5,D19,D29,D11
20	ANODE E1,E2,E3,E4,E5,D20,D30,D3
21	ANODE F1,F2,F3,F4,F5,D22,D12
22	ANODE G1,G2,G3,G4,G5,D23,D4
23	ANODE DP1,DP2,DP3,DP4,DP5,D24,D34,D13
24	COMMON CATHODE CC7
25	COMMON CATHODE CC6
26	COMMON CATHODE CC5 DIGIT 5
27	COMMON CATHODE CC4 DIGIT 4
28	COMMON CATHODE CC3 DIGIT 3
29	COMMON CATHODE CC2 DIGIT 2
30	COMMON CATHODE CC1 DIGIT 1

ABSOLUTE MAXIMUM RATING AT Ta=25°C

PARAMETER	Amber	Red Orange	Hi-Eff Green	UNIT
Power Dissipation Per Segment	75			mW
Peak Forward Current Per Segment (1/10 Duty Cycle, 0.1ms Pulse Width)	100			mA
Continuous Forward Current Per Segment Derating Linear From 25℃ Per Segment	25 0.28			mA mA/℃
Reverse Voltage Per Segment	5			V
Operating Temperature Range	-35℃ to +85℃			
Storage Temperature Range	-35℃ to +85℃			
Solder Temperature: max 260℃ for max 3sec at 1.6mm[1/16inch] below seating plane.				

ELECTRICAL / OPTICAL CHARACTERISTICS AT Ta=25°C

Amber

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITION
Average Luminous Intensity	I_V	1300	2400		μcd	I_F=10mA
Peak Emission Wavelength	λp		610		nm	I_F=20mA
Spectral Line Half-Width	Δλ		35		nm	I_F=20mA
Dominant Wavelength	λd		602		nm	I_F=20mA
Forward Voltage Per Segment	V_F		2.1	2.6	V	I_F=20mA
Reverse Current Per Segment	I_R			100	μA	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 (Commision Internationale De L'Eclairage) eye-response curve.

ELECTRICAL / OPTICAL CHARACTERISTICS AT Ta=25°C

Red Orange

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITION
Average Luminous Intensity	I_V	800	2200		μcd	I_F=10mA
Peak Emission Wavelength	λp		630		nm	I_F=20mA
Spectral Line Half-Width	Δλ		40		nm	I_F=20mA
Dominant Wavelength	λd		621		nm	I_F=20mA
Forward Voltage Per Segment	V_F		2	2.6	V	I_F=20mA
Reverse Current Per Segment	I_R			100	μA	V_R=5V
Luminous Intensity Matching Ratio	I_V-m			2:1		I_F=10mA

Hi-Eff. Green

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITION
Average Luminous Intensity	I_V	1300	3100		μcd	I_F=10mA
Peak Emission Wavelength	λp		565		nm	I_F=20mA
Spectral Line Half-Width	Δλ		30		nm	I_F=20mA
Dominant Wavelength	λd		569		nm	I_F=20mA
Forward Voltage Per Segment	V_F		2.1	2.6	V	I_F=20mA
Reverse Current Per Segment	I_R			100	μA	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 (Commision Internationale De L'Eclairage) eye-response curve.

TYPICAL ELECTRICAL / OPTICAL CHARACTERISTIC CURVES

(25°C Ambient Temperature Unless Otherwise Noted)

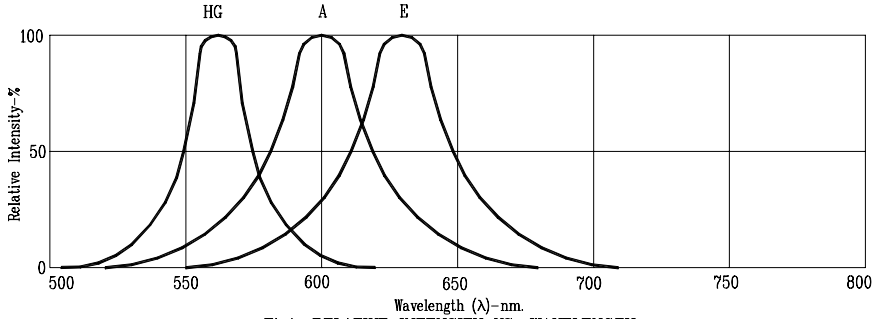


Fig1. RELATIVE INTENSITY VS. WAVELENGTH

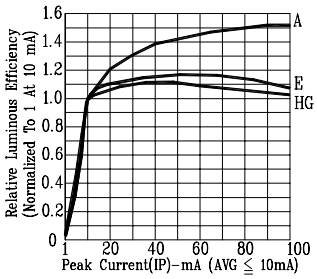


Fig2. RELATIVE LUMINOUS EFFICIENCY (LUMINOUS INTENSITY PER UNIT CURRENT) VS. PEAK CURRENT (REFRESH RATE 1KHz)

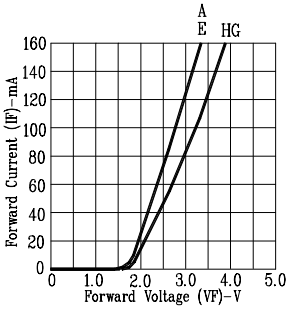


Fig3. FORWARD CURRENT VS. FORWARD VOLTAGE

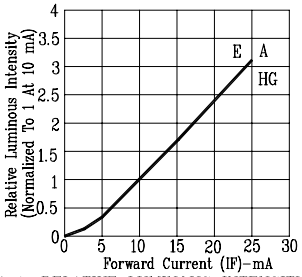


Fig4. RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT

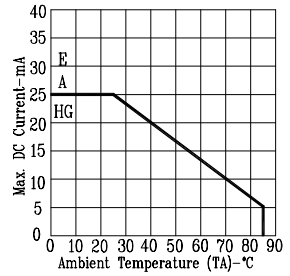


Fig5. MAX. ALLOWABLE DC CURRENT VS. AMBIENT TEMPERATURE.

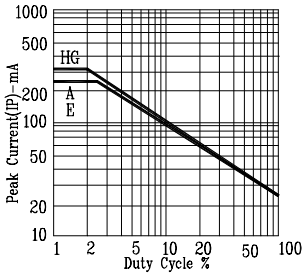


Fig6. MAX. PEAK CURRENT VS. DUTY CYCLE % (REFRESH RATE 1KHz)

NOTE: A=AMBER & E=RED ORANGE & HG=Hi-Eff. GREEN