



SOT-23 SURFACE MOUNT ASSEMBLY LED LAMPS

LTL-907HK/907JK/907NK

FEATURES

- MICROMINIATURE PACKAGE LED LAMP.
- SURFACE MOUNT ASSEMBLY LAMP.
- DOUBLE CHIP.
- HIGH EFFICIENCY/LOWER POWER CONSUMPTION.
- LONG LIFE SOLID STATE RELIABILITY.

DESCRIPTION

The LTL-907HK are bicolor LED contains two integral chip one orange Gallium Arsenide Phosphide on Gallium Phosphide and one green Gallium Phosphide, operation independently of each other with a common anode.

The LTL-907JK is clear non-diffused epoxy micro-miniature package for surface mount assembly double orange Gallium Arsenide Phosphide on Gallium Phosphide Light Emitting Diode.

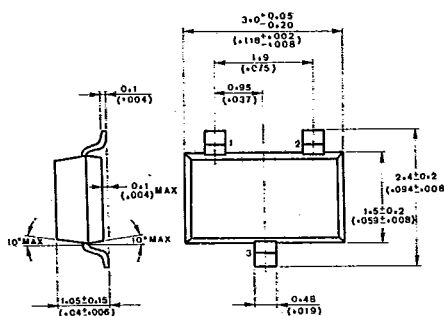
The LTL-907NK utilizing double Gallium Aluminum Arsenide Ultra-brightness red.

DEVICES

PART NO. LTL-	LENS		SOURCE COLOR
	COLOR	DIFFUSION	
907HK	Water Clear	Non-diffused	Orange
			Green
907JK	Water Clear	Non-diffused	Orange
			Orange
907NK	Water Clear	Non-diffused	GaAlAs Red
			GaAlAs Red

PIN NO.	LTL-907HK	LTL-907JK	LTL-907NK
1	Cathode (Orange)	Cathode	Anode
2	Cathode (Green)	Cathode	Anode
3	Anode	Anode	Cathode

PACKAGE DIMENSIONS



NOTES:

1. All dimensions are in millimeters (inches).
2. Tolerance is $\pm 0.25\text{mm}$ ($0.010''$) unless otherwise noted.
3. Lead spacing is measured where the leads emerge from the package.
4. Specifications are subject to change without notice.

ABSOLUTE MAXIMUM RATINGS AT $T_A = 25^\circ\text{C}$

PARAMETER	GaAlAs RED	GREEN	ORANGE	UNIT
Power Dissipation	100	100	100	mW
Peak Forward Current (1/10 Duty Cycle, 0.1ms Pulse Width)	200	120	120	mA
Continuous Forward Current	40	30	30	mA
Derating Linear From 25°C	0.5	0.4	0.4	$\text{mA}/^\circ\text{C}$
Reverse Voltage	4	5	5	V
Operating Temperature Range	-55°C to $+100^\circ\text{C}$			
Storage Temperature Range	-55°C to $+100^\circ\text{C}$			
Lead Soldering Temperature [1.6mm (0.063in) From Body]	260°C for 5 Seconds			

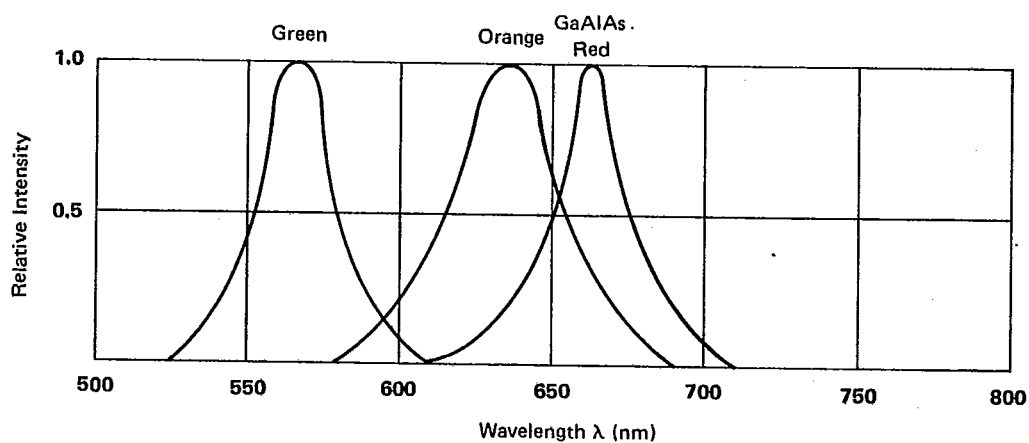


FIG. 1 RELATIVE INTENSITY VS. WAVELENGTH

ELECTRICAL/OPTICAL CHARACTERISTICS AND CURVES AT $T_A = 25^\circ\text{C}$

PARAMETER	SYMBOL	PART NO. LTL-907HK	MIN	TYP	MAX	UNIT	TEST CONDITION
Luminous Intensity	I_v	Orange Green	0.6 0.6	2.0 2.0		mcđ	$I_F = 20\text{mA}$ Note 1
Viewing Angle	$2\theta_{1/2}$	Orange Green		140		deg.	Note 2 (Fig. 6)
Peak Emission Wavelength	λ_{PEAK}	Orange Green		630 565		nm	Measurement @ Peak (Fig. 1)
Spectral Line Half Width	$\Delta\lambda$	Orange Green		40 30		nm	
Forward Voltage	V_F	Orange Green		2.0 2.1	2.8	V	$I_F = 20\text{mA}$
Reverse Current	I_R	Orange Green			100	μA	$V_R = 5\text{V}$
Capacitance	C	Orange Green		20 35		PF	$V_F = 0$ $f = 1\text{MHz}$

LED LAMPS

NOTES: 1. Luminous Intensity is measured with a light sensor and filter combination that approximates the CIE (Commission Internationale De L'Eclairage) eye-response curve.

2. $\theta_{1/2}$ is the off-axis angle at which the luminous intensity is half the axial luminous intensity.

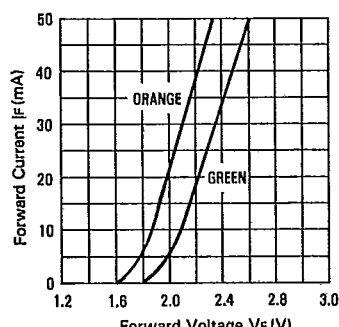


FIG. 2 FORWARD CURRENT VS. FORWARD VOLTAGE

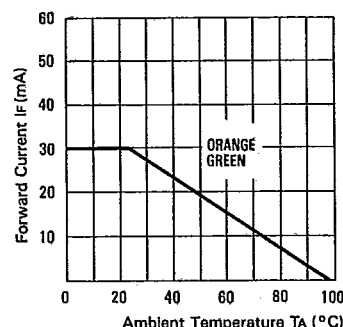


FIG. 3 FORWARD CURRENT DERATING CURVE

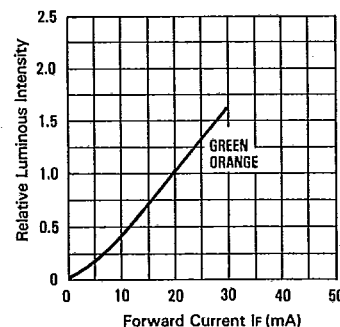
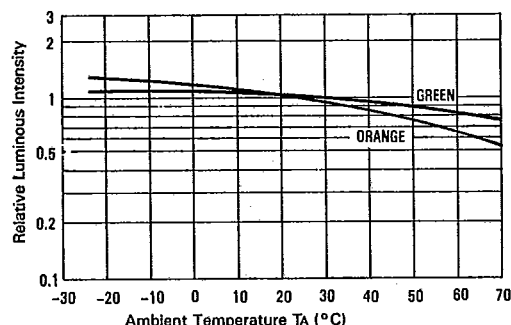
FIG. 4 RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT I_F (mA)

FIG. 5 LUMINOUS INTENSITY VS. AMBIENT TEMPERATURE

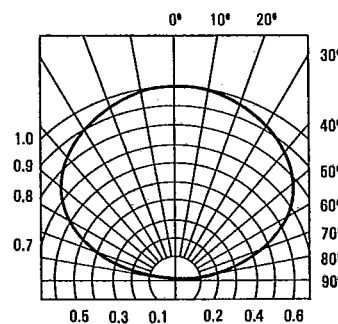


FIG. SPATIAL DISTRIBUTION

ELECTRICAL/OPTICAL CHARACTERISTICS AND CURVES AT $T_A = 25^\circ\text{C}$

PARAMETER	SYMBOL	PART NO. LTL	MIN	TYP	MAX	UNIT	TEST CONDITION
Luminous Intensity	I_v	907NK	1.1	3.5		mcd	$I_F = 20\text{mA}$ Note 1
Viewing Angle	$2\theta_{1/2}$	907NK		140		deg.	Note 2 (Fig. 11)
Peak Emission Wavelength	λ_{PEAK}			660		nm	Measurement @ Peak (Fig. 1)
Spectral Line Half Width	$\Delta\lambda$			20		nm	
Forward Voltage	V_F			1.8	2.4	V	$I_F = 20\text{mA}$
Reverse Current	I_R				100	μA	$V_R = 5\text{V}$
Capacitance	C			30		PF	$V_F = 0$ $f = 1\text{MHz}$

- NOTES: 1. Luminous intensity is measured with a light sensor and filter combination that approximates the CIE (Commission Internationale De L'Eclairage) eye-response curve.
2. $\theta_{1/2}$ is the off-axis angle at which the luminous intensity is half the axial luminous intensity.

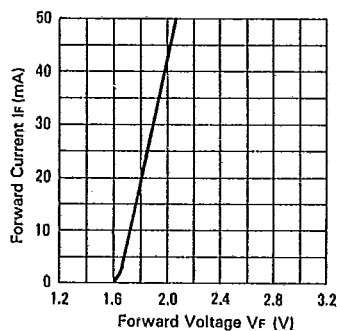


FIG. 7 FORWARD CURRENT VS. FORWARD VOLTAGE

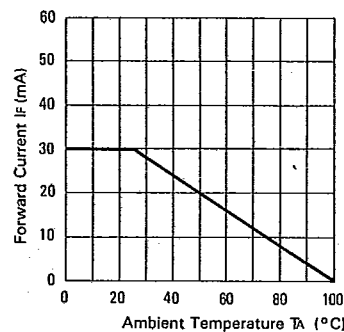


FIG. 8 FORWARD CURRENT VS. DERATING CURVE

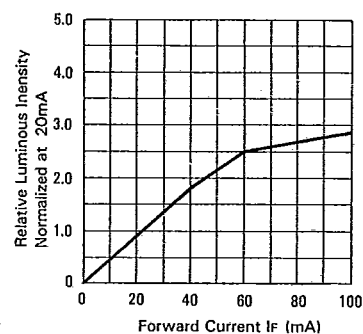


FIG. 9 Relative LUMINOUS INTENSITY VS. FORWARD CURRENT.

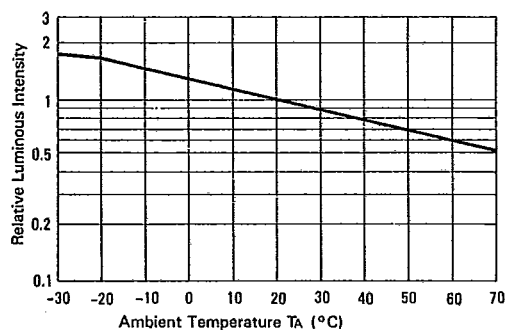


FIG. 10 LUMINOUS INTENSITY VS. AMBIENT TEMPERATURE CHARACTERISTICS

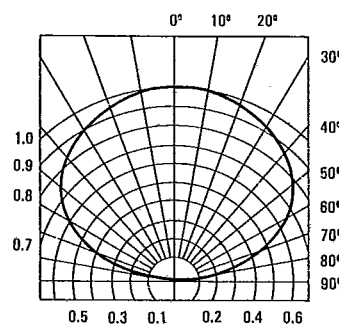


FIG. 11 SPATIAL DISTRIBUTION

ELECTRICAL/OPTICAL CHARACTERISTICS AND CURVES AT $T_A = 25^\circ\text{C}$

PARAMETER	SYMBOL	PART NO. LTL-	MIN	TYP	MAX	UNIT	TEST CONDITION
Luminous Intensity	I_v	907JK	0.6	2.0		mcd	$I_F = 20\text{mA}$ Note 1
Viewing Angle	$2\theta_{1/2}$	907JK		140		deg.	Note 2 (Fig. 16)
Peak Emission Wavelength	λ_{PEAK}			630		nm	Measurement @ Peak (Fig. 1)
Spectral Line Half Width	$\Delta\lambda$			40		nm	
Forward Voltage	V_F			2.0	2.8	V	$I_F = 20\text{mA}$
Reverse Current	I_R				100	μA	$V_R = 5\text{V}$
Capacitance	C			20		PF	$V_F = 0$ $f = 1\text{MHz}$

LED LAMPS

NOTES: 1. Luminous intensity is measured with a light sensor and filter combination that approximates the CIE (Commission Internationale De L'Eclairage) eye-response curve.

2. $\theta_{1/2}$ is the off-axis angle at which the luminous intensity is half the axial luminous intensity.

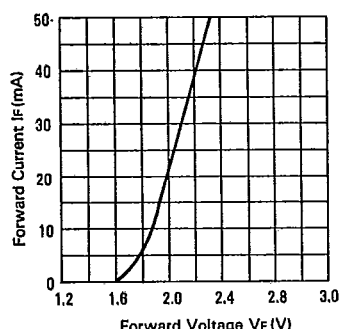


FIG. 12 FORWARD CURRENT VS. FORWARD VOLTAGE.

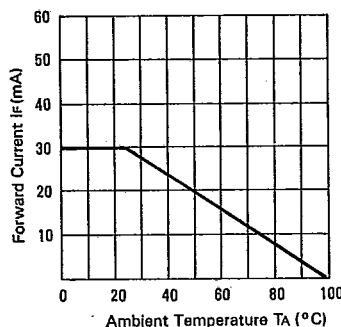


FIG. 13 FORWARD CURRENT DERATING CURVE.

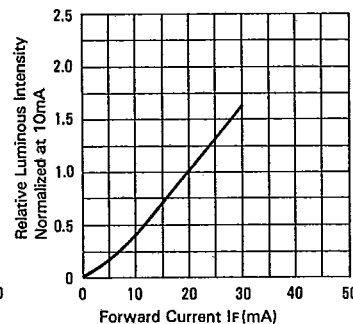


FIG. 14 RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT.

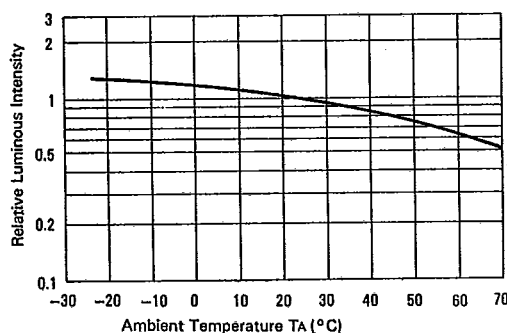


FIG. 15 LUMINOUS INTENSITY VS. AMBIENT TEMPERATURE

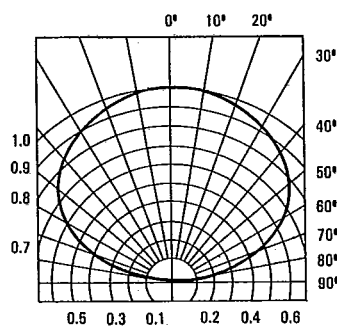


FIG. 16 SPATIAL DISTRIBUTION