

LITEON**(1.8mm) DOT POINT LED LAMPS**

LTL-709R RED

LTL-709Y YELLOW

LTL-709E HIGH EFFICIENCY RED LTL-709EA ORANGE

LTL-709L GREEN

T-41-21

FEATURES

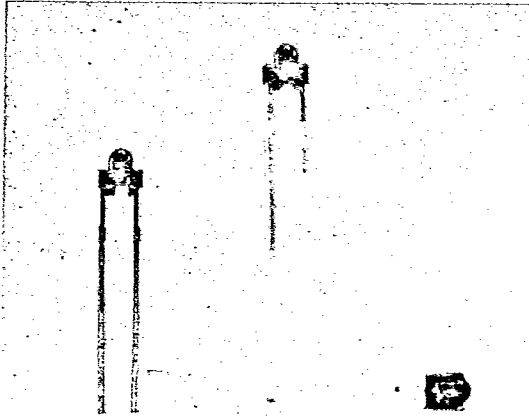
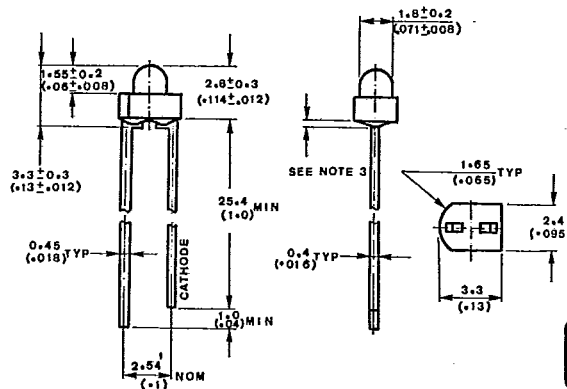
- LOW POWER CONSUMPTION.
- GENERAL PURPOSE LEADS.
- I.C. COMPATIBLE/LOW CURRENT REQUIREMENTS.
- RELIABLE AND RUGGED.

DESCRIPTION

The Red source color devices are made with Gallium Arsenide Phosphide on Gallium Arsenide Red Light Emitting Diode.

The High Efficiency Red and Orange source color devices are made with Gallium Arsenide Phosphide on Gallium Phosphide Orange Light Emitting Diode. The Green source color devices are made with Gallium Phosphide on Gallium Phosphide Green Light Emitting Diode.

The Yellow source color devices are made with Gallium Arsenide Phosphide on Gallium Phosphide Yellow Light Emitting Diode.

**PACKAGE DIMENSIONS****DEVICES**

PART NO. LTL-	LENS		SOURCE COLOR
	COLOR	DIFFUSION	
709R	Red	Diffused	Red
709E	Red	Diffused	Hi. Eff. Red
709L	Green	Diffused	Green
709Y	Yellow	Diffused	Yellow
709EA	Orange	Diffused	Orange

NOTES:

1. All dimensions are in millimeters (inches).
2. Tolerance is $\pm 0.25\text{mm}$ (.010") unless otherwise noted.
3. Protruded resin under flange is 1.5mm (.059") max.
4. Lead spacing is measured where the leads emerge from the package.
5. Specifications are subject to change without notice.



ABSOLUTE MAXIMUM RATINGS AT TA = 25°C

PARAMETER	RED	GREEN	YELLOW	HI. EFF. RED ORANGE	UNIT
Power Dissipation	80	100	60	100	mW
Peak Forward Current (1/10 Duty Cycle, 0.1µs Pulse Width)	200	120	80	120	mA
Continuous Forward Current	40	30	20	30	mA
Derating Linear From 25°C	0.5	0.4	0.25	0.4	mA/°C
Reverse Voltage	5	5	5	5	V
Operating Temperature Range	-55°C to +100°C				
Storage Temperature Range	-55°C to +100°C				
Lead Soldering Temperature [1.6mm (0.063in) From Body]	260°C for 5 Seconds				

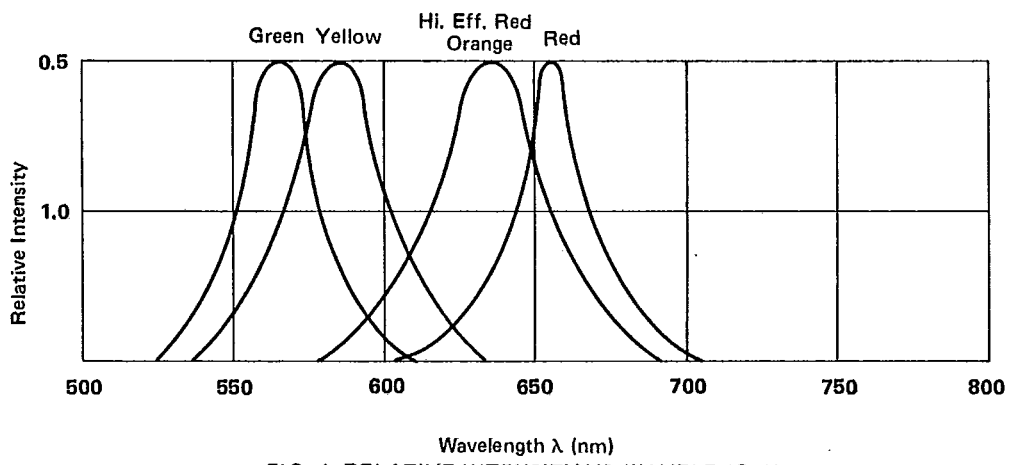


FIG. 1 RELATIVE INTENSITY VS. WAVELENGTH

ELECTRICAL/OPTICAL CHARACTERISTICS AND CURVES AT TA = 25°C

PARAMETER	SYMBOL	PART NO. LTL-	MIN.	δYP.	MAX.	UNIT	TEST CONDITION
Luminous Intensity	Iv	709R 709E	0.3 0.7	0.7 3.0		mcd	IF = 10 mA Note 1
Viewing Angle	2θ½	709R 709E		25° 38°		deg.	Note 2 (Fig. 6) (Fig. 11)
Peak Emission Wavelength	λPEAK	709R 709E		655 635		nm	Measurement @ Peak (Fig. 1)
Spectral Line Half Width	Δλ	709R 709E		24 40		nm	
Forward Voltage	VF	709R 709E		1.7 2.0	2.0 2.8	V	IF = 20 mA
Reverse Current	IR	709R 709E			100	μA	VR = 5V
Capacitance	C	709R 709E		30 20		PF	VF = 0 f = 1 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. θ½ is the off-axis angle at which the luminous intensity is half the axial luminous intensity.

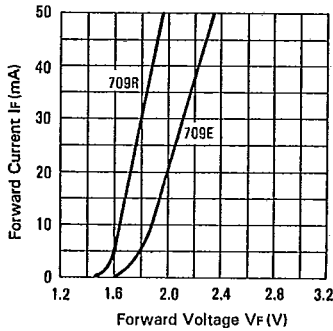


FIG. 2 FORWARD CURRENT VS. FORWARD VOLTAGE

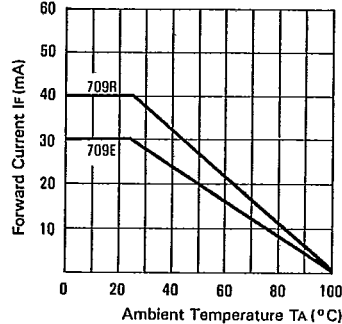


FIG. 3 FORWARD CURRENT DERATING CURVE

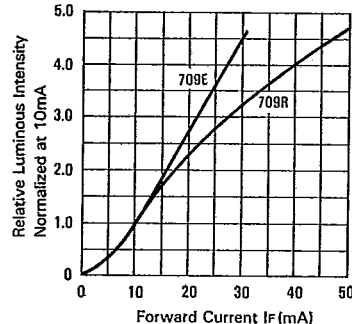


FIG. 4 RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT.

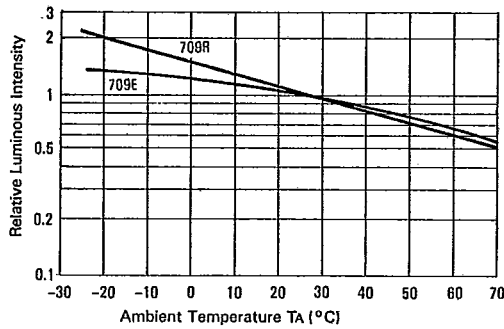


FIG. 5 LUMINOUS INTENSITY VS. AMBIENT TEMPERATURE

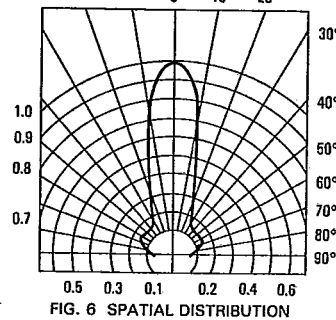


FIG. 6 SPATIAL DISTRIBUTION



ELECTRICAL/OPTICAL CHARACTERISTICS AND CURVES AT TA = 25°C

PARAMETER	SYMBOL	PART NO. LTL-	MIN.	TYP.	MAX.	UNIT	TEST CONDITION
Luminous Intensity	Iv	709L 709Y	0.5 1.1	1.5 3.5		mcd	IF = 10 mA Note 1
Viewing Angle	2θ½	709L 709Y		38°		deg.	Note 2 (Fig. 11)
Peak Emission Wavelength	λPEAK	709L 709Y		565 585		nm	Measurement @ Peak (Fig. 1)
Spectral Line Half Width	Δλ	709L 709Y		30 35		nm	
Forward Voltage	VF	709L 709Y		2.1	2.8	V	IF = 20 mA
Reverse Current	IR	709L 709Y			100	μA	VR = 5V
Capacitance	C	709L 709Y		35 15		PF	VF = 0 f = 1 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. θ½ is the off-axis angle at which the luminous intensity is half the axial luminous intensity.

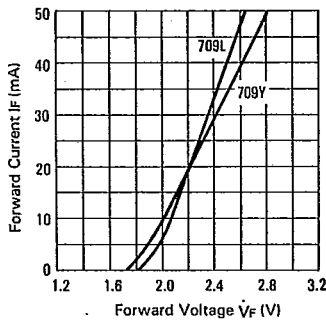


FIG. 7 FORWARD CURRENT VS. FORWARD VOLTAGE

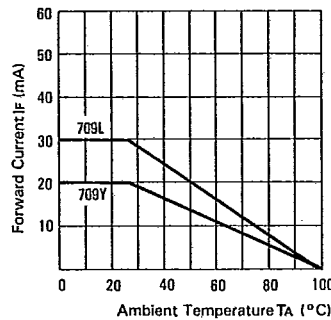


FIG. 8 FORWARD CURRENT DERATING CURVE

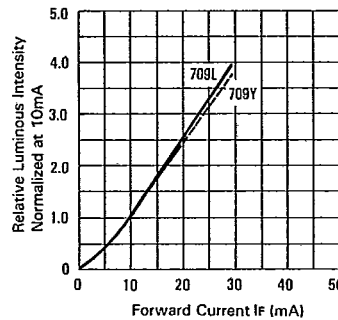


FIG. 9 RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT

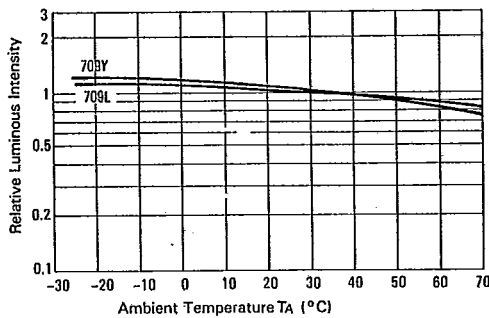


FIG. 10 LUMINOUS INTENSITY VS. AMBIENT TEMPERATURE

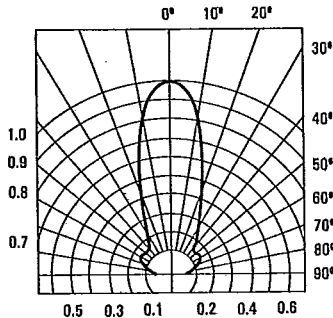


FIG. 11 SPATIAL DISTRIBUTION

ELECTRICAL/OPTICAL CHARACTERISTICS AND CURVES AT TA = 25°C

PARAMETER	SYMBOL	PART NO. LTL-	MIN.	TYP.	MAX.	UNIT	TEST CONDITION
Luminous Intensity	Iv	709EA	1.1	3.5		mcd	IF = 10 mA Note 1
Viewing Angle	2θ½	709EA		38°		deg.	Note 2 (Fig. 16)
Peak Emission Wavelength	λPEAK			630		nm	Measurement @ Peak (Fig. 1)
Spectral Line Half Width	Δλ			40		nm	
Forward Voltage	VF			2.0	2.8	V	IF = 20 mA
Reverse Current	IR				100	μA	VR = 5V
Capacitance	C			20		PF	VF = 0 f = 1 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. θ½ is the off-axis angle at which the luminous intensity is half the axial luminous intensity.

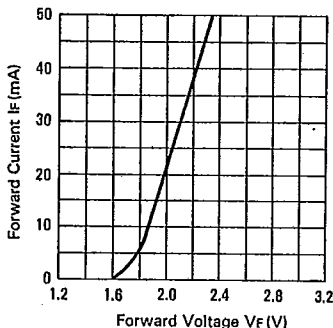


FIG. 12 FORWARD CURRENT VS. FORWARD VOLTAGE

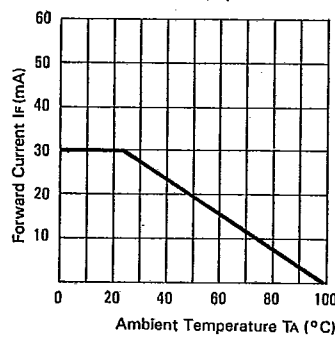


FIG. 13 FORWARD CURRENT DERATING CURVE

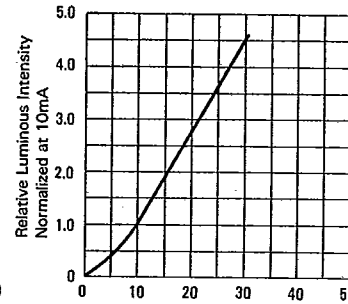


FIG. 14 RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT

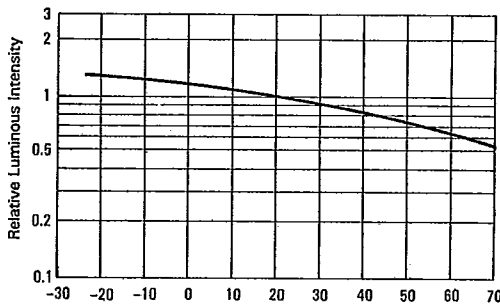


FIG. 15 LUMINOUS INTENSITY VS. AMBIENT TEMPERATURE

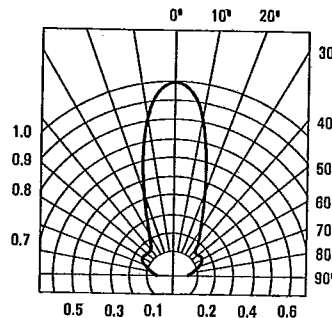


FIG. 16 SPATIAL DISTRIBUTION

