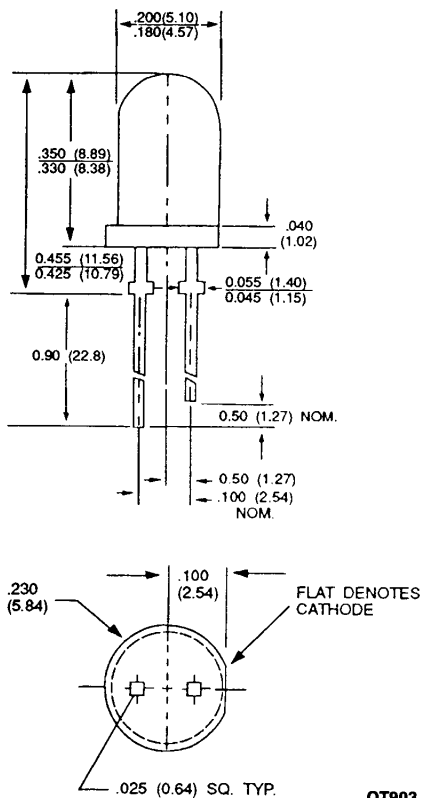




INTEGRATED T-1 3/4 RESISTOR LAMPS 5 VOLT and 12 VOLT SERIES

RED MR3050/MR3051 TINTED
HIGH EFFICIENCY RED MR3750/MR3751 TINTED
YELLOW MR3350/MR3351 TINTED
HIGH EFFICIENCY GREEN MR3450/MR3451 TINTED

PACKAGE DIMENSIONS



QT903

DESCRIPTION

This group of T-1 3/4 size LED lamps contain integral resistors. Operation at 5 volts (MR3X50 Part Nos.) or 12 volts (MR3X51 Part Nos.) is possible without the use of external current limiting resistors. Color tinted, diffused epoxy packages are used for all the lamps in this group.

FEATURES

- Integral Current Limiting Resistor
(No external resistor required)
- TTL Compatible
- Operate with 5 Volt & 12 Volt Supplies
- All Colors - Red, HER, Yellow, Green
- Wide Viewing Angle
- Solid-State Reliability

NOTES:

1. ALL TOLERANCES, UNLESS OTHERWISE SPECIFIED: .XXX ± 010
2. ALL DIMENSIONS IN INCHES (MILLIMETERS)

PHYSICAL CHARACTERISTICS

TYPE	SOURCE COLOR	LENS COLOR
MR3050	Red	Red Diffused
MR3051	Red	Red Diffused
MR3750	High Efficiency Red	Red Diffused
MR3751	High Efficiency Red	Red Diffused
MR3350	Yellow	Yellow Diffused
MR3351	Yellow	Yellow Diffused
MR3450	High Efficiency Green	Green Diffused
MR3451	High Efficiency Green	Green Diffused



INTEGRATED T-1 3/4 RESISTOR LAMPS 5 VOLT and 12 VOLT SERIES

ELECTRO-OPTICAL CHARACTERISTICS (TA = 25°C Unless Otherwise Specified)										
RED						HIGH EFFICIENCY RED			UNITS	TEST CONDITION
PARAMETER	SYMBOL	MR3050			MR3051			MR3750		
		MIN.	TYP.	MAX.	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
Luminous Intensity	I _v				1.0	2.0			1.5	4.0
Luminous Intensity	I _v	1.0	2.0					1.5	4.0	
Total Viewing Angle	2θ1/2	60			60			60		
Peak Wavelength	λ _p	655			655			635		
Spectral Line Halfwidth	Δλ1/2	24			24			40		
Forward Current 12V Devices	I _f								13	20
Forward Current 5V Devices	I _f		13	20		13	20		10	15
Reverse Breakdown Voltage	V _R	5.0			5.0			5.0		

ELECTRO-OPTICAL CHARACTERISTICS (TA = 25°C Unless Otherwise Specified)										
YELLOW						HIGH EFFICIENCY GREEN			UNITS	TEST CONDITION
PARAMETER	SYMBOL	MR3350			MR3351			MR3450		
		MIN.	TYP.	MAX.	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
Luminous Intensity	I _v				1.5	4.0			1.5	4.0
Luminous Intensity	I _v	1.5	4.0					1.5	4.0	
Total Viewing Angle	2θ1/2	60			60			60		
Peak Wavelength	λ _p	583			583			565		
Spectral Line Halfwidth	Δλ1/2	36			36			28		
Forward Current 12V Devices	I _f					13	20		13	20
Forward Current 5V Devices	I _f		10	15					12	15
Reverse Breakdown Voltage	V _R	5.0			5.0			5.0		

ABSOLUTE MAXIMUM RATINGS (TA = 25°C Unless Otherwise Specified)				
	RED/HER/YELLOW 5 VOLT LAMPS	RED/HER/YELLOW 12 VOLT LAMPS	GREEN 5 VOLT LAMPS	GREEN 12 VOLT LAMPS
DC Forward Voltage (TA=25°C)	7.5 Volts	15 Volts	7.5 Volts	15 Volts
Reverse Voltage (I _R =100 μA)	5 Volts	5 Volts	5 Volts	5 Volts
Operating Temperature Range	-40°C to +85°C	-40°C to +85°C	-20°C to +85°C	-20°C to +85°C
Storage Temperature Range	-55°C to +100°C	-55°C to +100°C	-55°C to +100°C	-55°C to +100°C
Lead Soldering Temperature	260°C for 5 seconds			

INTEGRATED T-1 3/4 RESISTOR LAMPS **5 VOLT and 12 VOLT SERIES**

TYPICAL ELECTRO-OPTICAL CHARACTERISTIC CURVES

(TA = 25°C Unless Otherwise Specified)

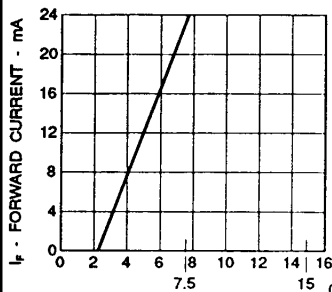


Fig. 1. Forward Current vs. Applied Forward Voltage 5 Volt Devices

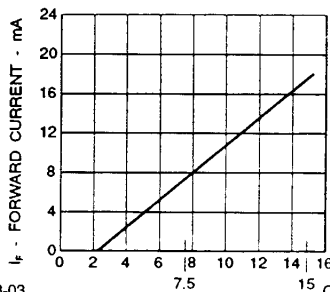


Fig. 2. Forward Current vs. Applied Forward Voltage 12 Volt Devices

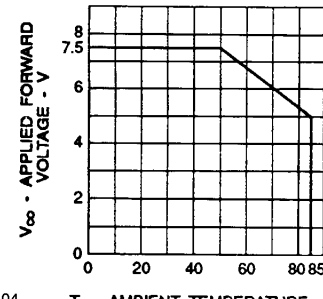


Fig. 3. Maximum Allowed Applied Forward Voltage vs. Ambient Temperature
RθJA = 175°C/W 5 Volt Devices

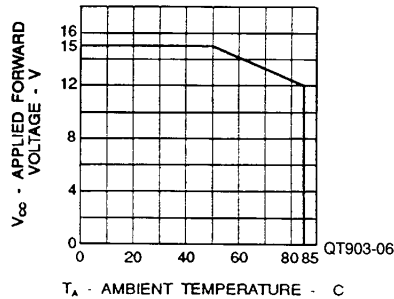


Fig. 4. Maximum Allowed Applied Forward Voltage vs. Ambient Temperature
RθJA = 175°C/W 12 Volt Devices

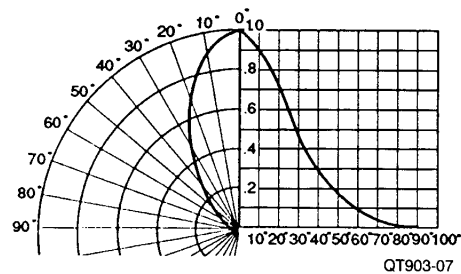


Fig. 5. Relative Luminous Intensity vs. Angular Displacement for T-1 3/4 Package

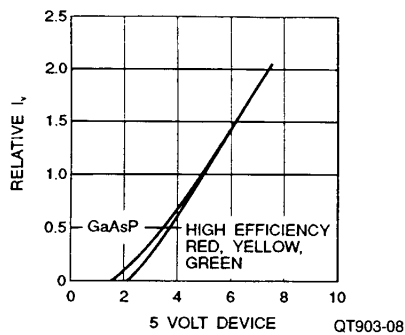


Fig. 6. Relative Luminous Intensity vs. Applied Forward Voltage 5 Volt Devices

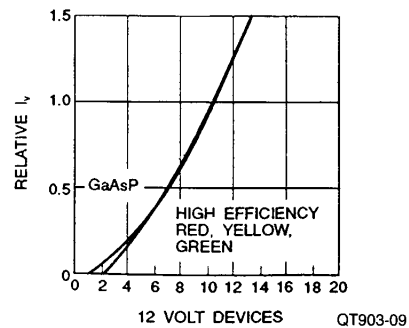


Fig. 7. Relative Luminous Intensity vs. Applied Forward Voltage 12 Volt Devices