

MVL-954HUOLC
MVL-954UOLC
MVL-954HUYLC
MVL-954UYLC
MVL-954TUOLC
MVL-954TUYLC
MVL-954TGC / 954UTGC
MVL-954SGC / 954USGC
MVL-954BC / 954UBC / 954MBC
MVL-954W / 954UW

Technical Data

JACK LEDs

11/19/2001

Benefits

- Fewer LEDs Required
- Lowers Lighting System Cost

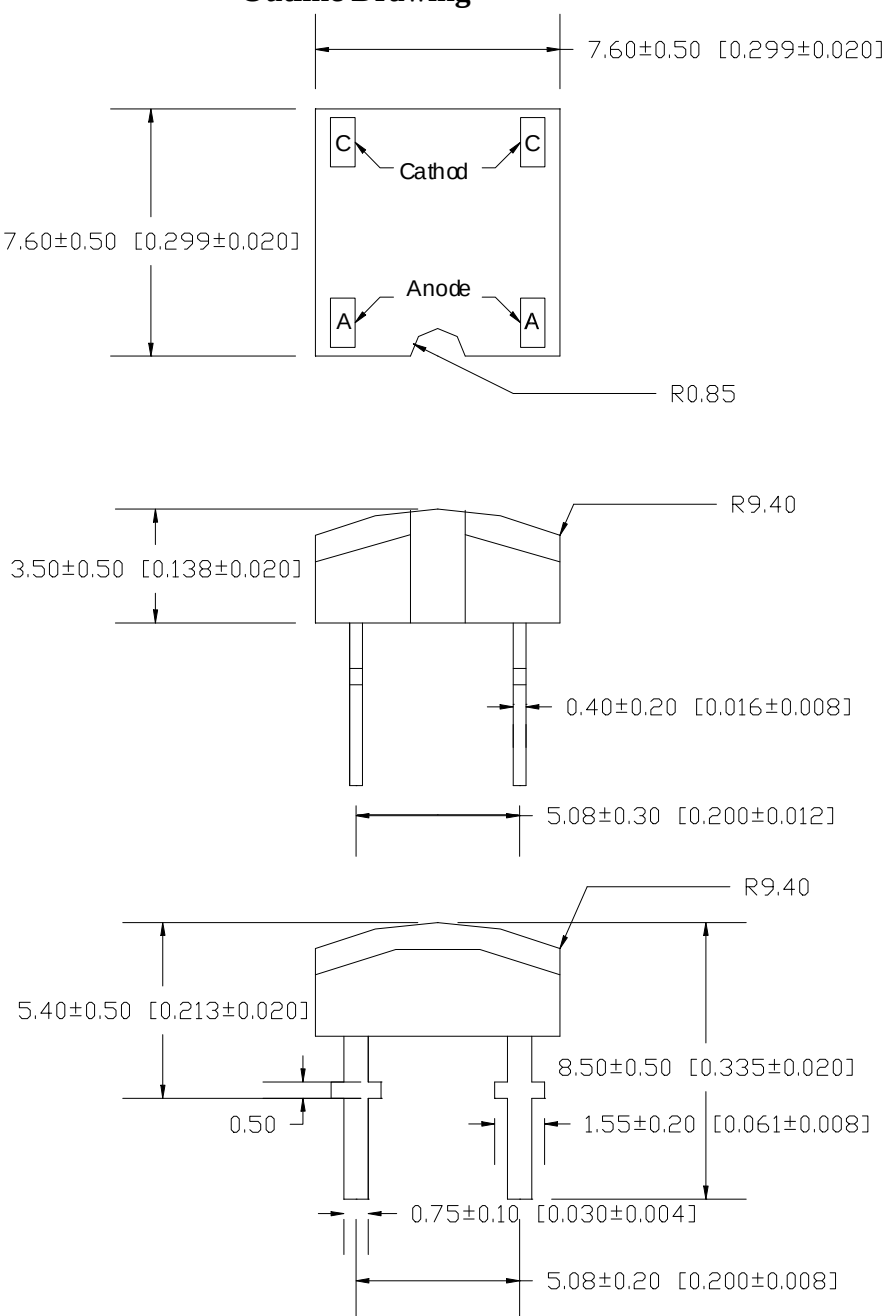
Features

- High Flux Output
- Designed for High Current Operation
- Low Thermal Resistance
- Low Profile
- Reliable
- Packaged in Tubes for Use with Automatic Insertion Equipment

Applications

- Automotive Exterior Lighting
- Electronic Signs and Signals
- Traffic Signal
- Sign

Outline Drawing



NOTES : 1.DIMENSIONS ARE IN MILLIMETERS (INCHES).
2.DIMENSIONS WITHOUT TOLERANCES ARE NOMINAL.

Device Selection Guide

Part Number	LED Color	Total Flux qv(mlm) Typ.	View Angle 2q1/2 (Degrees) Typ.
MVL-954HUOLC	AS AlInGaP Red-Orange	2000 @I _F =70mA	100
MVL-954UOLC		1200 @I _F =50mA	100
MVL-954HUYLC	AS AlInGaP Amber	2000 @I _F =70mA	100
MVL-954UYLC		1200 @I _F =50mA	100
MVL-954TUOLC	TS AlInGaP Red	3000 @I _F =70mA	150
MVL-954TUYLC	TS AlInGaP Amber	3000 @I _F =70mA	150
MVL-954TGC / 954UTGC	InGaN True Green	700 / 1000 @I _F =40mA	150
MVL-954SGC / 954USGC	InGaN Signal Green	600 / 900 @I _F =40mA	150
MVL-954BC / 954UBC / 954MBC	InGaN Blue	500 / 800 / 1000 @I _F =40mA	150
MVL-954W / 954UW	White	1500 / 2500 @I _F =40mA	150

Absolute Maximum Ratings at T_A=25°C

Device Type Parameter	MVL-954HUOLC MVL-954HUYLC	MVL-954TUOLC MVL-954TUYLC	MVL-954UOLC MVL-954UYLC	MVL-954(U)TGC MVL-954(U)SGC MVL-954(U,M)BC MVL-954(U)W	Units
DC Forward Current	70	70	50	40	mA
Power Dissipation	150	182	120	140	mW
Reverse Voltage (I _R =100μA)	10	10	10	5	V
LED Junction Temperature	125	125	125	125	°C
Operating Temp Range	-20 to +80				°C
Storage Temp	-30 to +100				°C
Solder Conditions	100°C for 30 seconds				
Preheat Temperature	260°C for 5 seconds				
Solder Temperature	260°C for 5 seconds				
	[1.5mm (0.06 in.) below seating plane]				

Optical Characteristics at T_A=25°C

Part Number	Total Flux f _v (mlm)		Peak Wavelength I _{peak} (nm) Typ.	Color, Dominant Wavelength I _d (nm) Typ.	Viewing Angle 2q 1/2 (Degrees) Typ.
	Min.	Typ.			
MVL-954HUOLC	600 @I _F =70mA	2000 @I _F =70mA	630	625	100
MVL-954HUYLC	600 @I _F =70mA	2000 @I _F =70mA	592	590	100
MVL-954TUOLC	600 @I _F =70mA	3000 @I _F =70mA	640	630	150
MVL-954TUYLC	600 @I _F =70mA	3000 @I _F =70mA	594	592	150
MVL-954UOLC	600 @I _F =50mA	1200 @I _F =50mA	630	625	100
MVL-954UYLC	600 @I _F =50mA	1200 @I _F =50mA	592	590	100
MVL-954TGC / 954UTGC	100 @I _F =40mA	700 / 1000 @I _F =40mA	523	525	150
MVL-954SGC / 954USGC	100 @I _F =40mA	600 / 900 @I _F =40mA	502	505	150
MVL-954BC / 954UBC / 954MBC	100 @I _F =40mA	500 / 800 / 1000 @I _F =40mA	468	470	150

Part Number	Total Flux f _v (mlm)		Chromaticity Coordinates (Typ.)	
	Min.	Typ.	X	Y
MVL-954W / 954UW	600 @I _F =40mA	1500 / 2500 @I _F =40mA	0.33	0.31

Electrical Characteristics at T_A=25°C

Device Type	Forward Voltage V _F (Volts)			Reverse Breakdown V _R (Volts) @I _R =100mA		Thermal Resistance R _{qJ-PIN} (°C/W)	Thermal Resistance R _{qJ-A} (°C/W)
	Min.	Typ.	Max	Min.	Typ.	Typ.	Typ.
MVL-954HUOLC MVL-954HUYLC	1.83	2.2 @I _F =70mA	2.79	10	20	120	250
MVL-954UOLC MVL-954UYLC	1.83	2.15 @I _F =50mA	2.79	10	20	120	250
MVL-954TUOLC MVL-954TUYLC	2.07	2.5 @I _F =70mA	3.15	10	20	125	250
MVL-954(U)TGC MVL-954(U)SGC MVL-954(U,M)BC MVL-954(U)W	3	3.7 @I _F =40mA	5.2	5	10	90	180

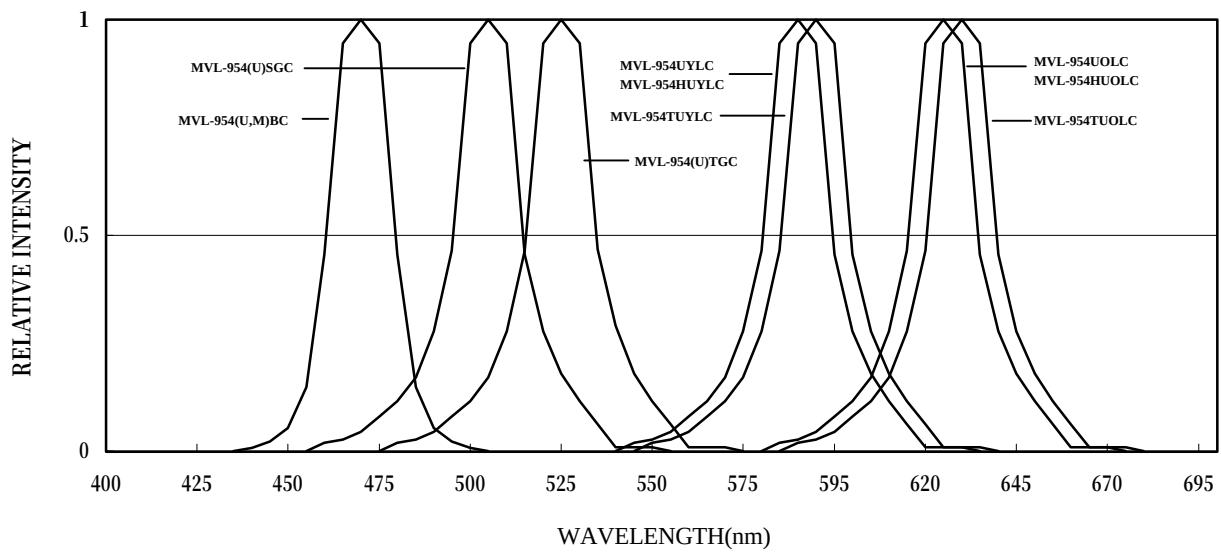


Figure 1.Relative Intensity vs.Wavelength.

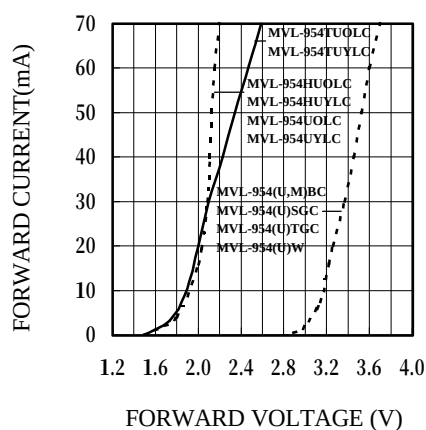


Figure 2.Forward Current vs.
Forward Voltage.

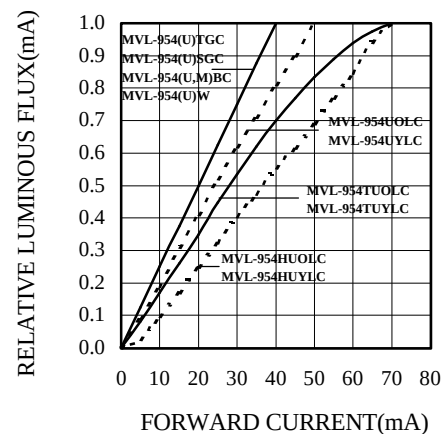


Figure 3. RelativeLuminous Flux vs.
Forward Current.

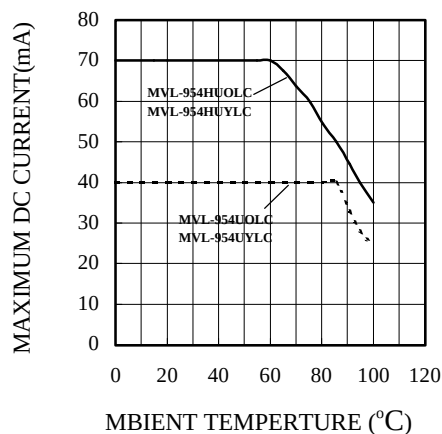


Figure 4a. Maximum DC Forward Current
vs. Ambient Temperature.

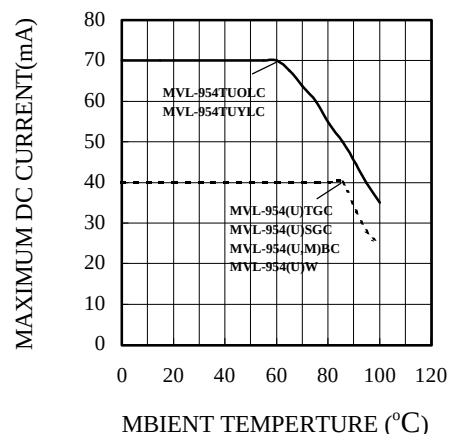


Figure 4b. Maximum DC Forward Current
vs. Ambient Temperature.

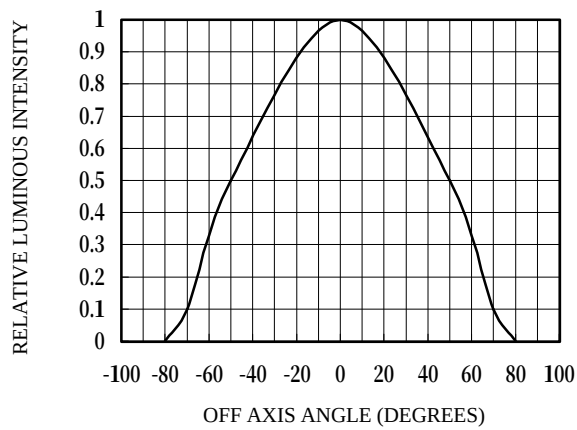


Figure 5. MVL-954HUOLC, MVL-954HUYLC, MVL-954UOLC, MVL-954UYLC
Relative Luminous Intensity vs. Off Axis Angle.

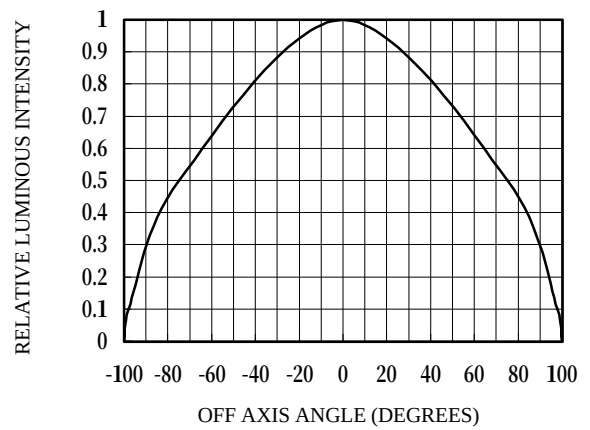
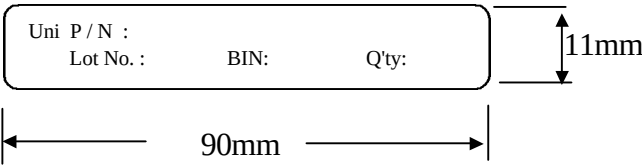


Figure 6. MVL-954TUOLC, MVL-954TUYLC, MVL-954TGC, MVL-954UTGC, MVL-954SGC, MVL-954USGC, MVL-954BC, MVL-954UBC, MVL-954MBC, MVL-954W, MVL-954UW
Relative Luminous Intensity vs. Off Axis Angle.

Packaging

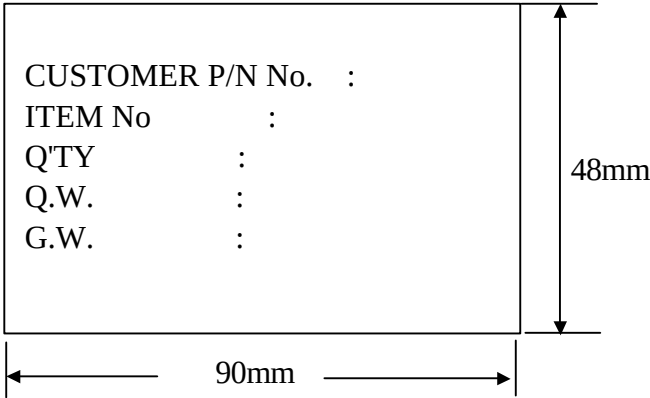
Tubes of LEDs

LEDs are packaged in tubes , each of which contains 60 LEDs.
The LEDs in any individual tube come from a single category code.
Figure 1. Shows a sample label taken from a tube.



Boxes of LEDs

Each box of LEDs contains 240 tubes , or 14400 LEDs.
The box dimensions are 500× 243×150mm(L×W×H)
All of the tubes are in the same orientation .
Figure 2. Shows a sample label taken from a box .



Unity JACK LED Bin Codes

Category Code		
C	2	3

Luminous Flux (Light-output in lumen/s)				
	MVL-9X4HUOLC MVL-9X4HUYLC MVL-9X4TUOLC MVL-9X4TUYLC @ I _F =70mA		MVL-9X4(U)TGC MVL-9X4(U)SGC MVL-9X4(U)BC @ I _F =40mA	
	MVL-9X4UOLC MVL-9X4UYLC @ I _F =50mA			
BIN CODE	minimum	maximum	minimum	maximum
A	0.6	1.2	0.1	0.9
B	1.0	1.8	0.5	1.4
C	1.5	2.4	1.0	1.9
D	2.0	3.0	1.5	2.4
E	2.5	3.6		
F	3.0	4.2		
G	3.5	4.8		
H	4.0	6.1		

Dominant Wavelength (in nanometers) @ I _F =20mA										
	TUOLC, HUOLC, UOLC		TUYLC, HUYLC, UYLC		(U)TGC		(U)SGC		(U)BC	
Bin code	minimum	maximum	minimum	maximum	minimum	maximum	minimum	maximum	minimum	maximum
1	611	618	583	589	517	528	495	504	459	469
2	614	622	587	593	524	535	500	509	467	475
3	616	634	591	597	531	542	505	514	471	481

Forward Voltage (Volts)				
	MVL-9X4HUOLC MVL-9X4HUYLC MVL-9X4TUOLC MVL-9X4TUYLC @ I _F =70mA		MVL-9X4(U)TGC MVL-9X4(U)SGC MVL-9X4(U)BC @ I _F =40mA	
	MVL-9X4UOLC MVL-9X4UYLC @ I _F =50mA			
BIN CODE	minimum	maximum	minimum	maximum
0	1.83	2.07	3.0	3.4
1	1.95	2.19	3.2	3.6
2	2.07	2.31	3.4	3.8
3	2.19	2.43	3.6	4.0
4	2.31	2.55	3.8	4.2
5	2.43	2.67	4.0	4.4
6	2.55	2.79	4.2	4.6
7	2.67	2.91	4.4	4.8
8	2.79	3.03	4.6	5.0
9	2.91	3.15	4.8	5.2

Unity JACK White LED Bin Codes

Category Code		
C	2	3

Luminous Flux (Light -output in lumens)		
	MVL-9X4W MVL-9X4UW @ I _F =40mA	
BIN CODE	minimum	maximum
A	0.6	1.2
B	1.0	1.8
C	1.5	2.4
D	2.0	3.0
E	2.5	3.6
F	3.0	4.2
G	3.5	4.8
H	4.0	6.1

Chromaticity Coordinates @ I _F =20mA								
Bin Code	1		2		3		4	
	X	Y	X	Y	X	Y	X	Y
1	0.44	0.484	0.388	0.344	0.351	0.314	0.378	0.452
2	0.378	0.452	0.351	.314	0.335	0.292	0.332	0.417
3	0.332	0.417	0.335	0.292	0.323	0.275	0.303	0.388
4	0.303	0.388	0.323	0.275	0.303	0.243	0.256	0.338
5	0.256	0.338	0.303	0.243	0.292	0.222	0.221	0.293

Forward Voltage (Volts)		
	MVL-9X4W MVL-9X4UW @ I _F =40mA	
BIN CODE	minimum	maximum
0	3.0	3.4
1	3.2	3.6
2	3.4	3.8
3	3.6	4.0
4	3.8	4.2
5	4.0	4.4
6	4.2	4.6
7	4.4	4.8
8	4.6	5.0
9	4.8	5.2