DEVETECH ELECTRONICS CO. LTD

2.0 x 1.25mm SDM CHIP LED LAMP
CUSTOMER: DACHS ELECTRONICA
P/N: DVL-LR-C0805QBC

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Document revision history				
Change Nº	Date	Subject and reason	Version Nº	Responser
1	2014.09.17		A01	

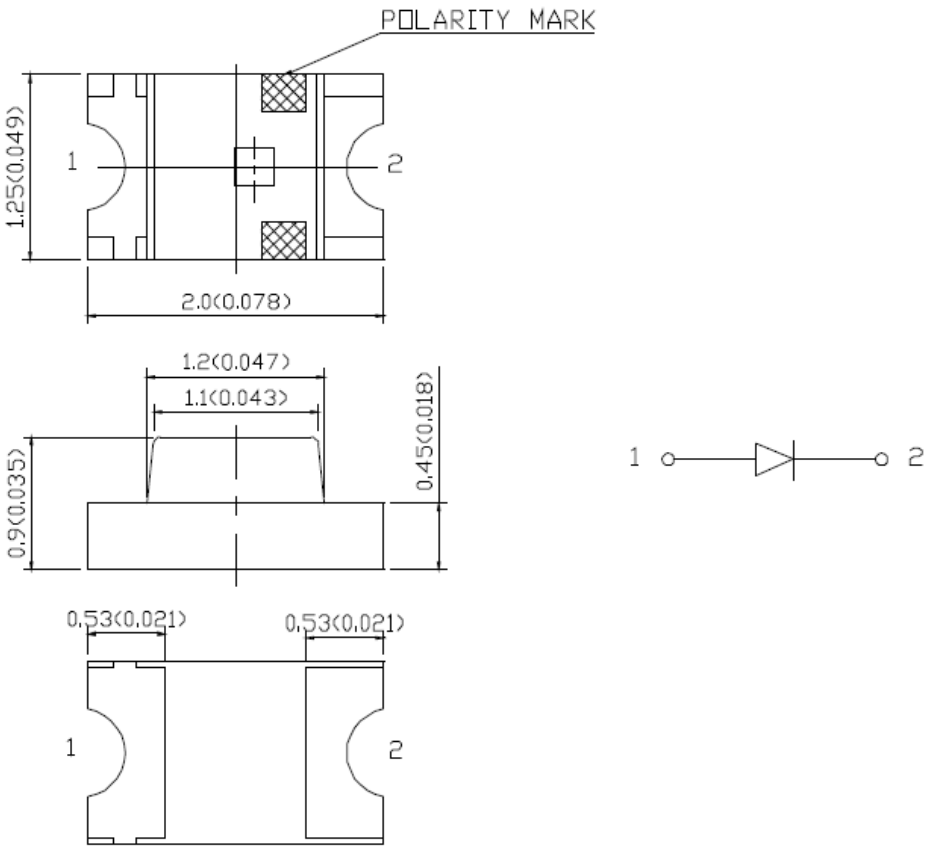
1. FEATURES

* 2.0mm x 1.25mm SMD LED, 0.9mm thickness
* Low power consumption
* Wide viewing angle
* Indoor and outdoor displays
* Various colors and lens types available
* Package: 3000PCS/REEL

2. DESCRIPTION

The Blue source color devices are made with GaN Light Emitting Diode.

3. PACKAGE DIMENSIONS



Notes:
1. All dimensions are in millimeters (inches).
2. Tolerance is ±0.1 (0.004”) unless otherwise noted.
3. Specifications are subject to change without notice.

Part No.	Device	Lens type	Iv (mcd) 20mA			Viewing angle
			Min	Typ	Max	2 θ 1/2
DVL-LR-C0805QBC	Blue InGaN	Water clear	70	100	-	120º

Note:
1. θ 1/2 is the angle from optical centerline where the luminous intensity is 1/2 the optical centerline value.

4. ELECTRICAL/OPTICAL CHARACTERISTICS

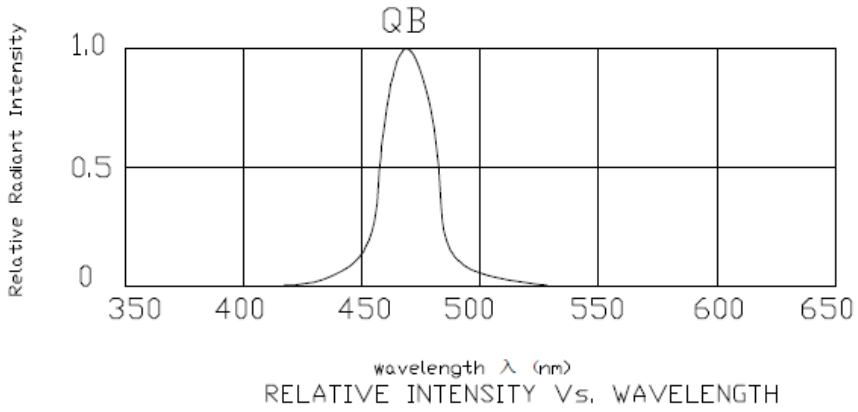
Symbol	Parameter	Device	Min	Typ	Max	Units	Test conditions
λ peak	Peak wavelength	Blue	/	466	/	nm	I_F=20MA
λ D	Dominate wavelength	Blue	464	466	-	nm	I_F=20MA
Δ λ 1/2	Spectral line half-width	Blue	/	25	/	nm	I_F=20MA
C	Capacitance	Blue	/	105	/	PF	VF=0V; f=1MHz
VF	Forward	Blue	2.8	3.0	-	V	I_F=20MA
IR	Reverse current	Blue	/	/	10	uA	VR=5V

5. ABSOLUTE MAXIMUM RATINGS AT Ta=25ºC

Parameter	Green	Units
Power dissipation	95	mW
DC forward current	30	mA
Peak forward current (1)	150	mA
Reverse voltage	5	V
Operating/Storage temperature	-40ºC to +85ºC	

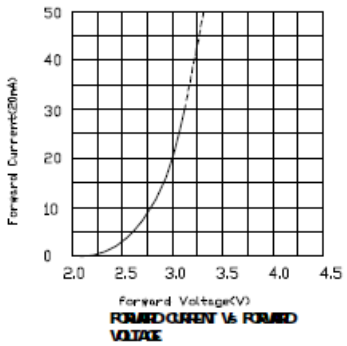
Note:
(1): 1/10 Duty cycle 0.1ms pulse width.

6. RELATIVE INTENSITY Vs WAVELENGTH CHART

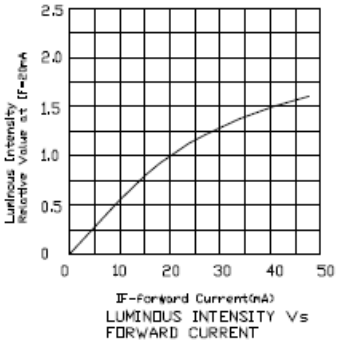


RELATIVE INTENSITY Vs. WAVELENGTH

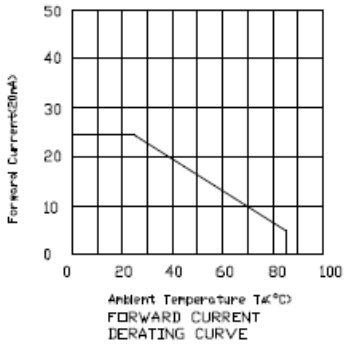
BLUE DVL-LR-C0805QBC



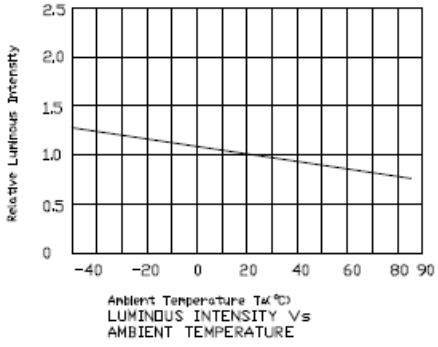
FORWARD CURRENT Vs FORWARD VOLTAGE



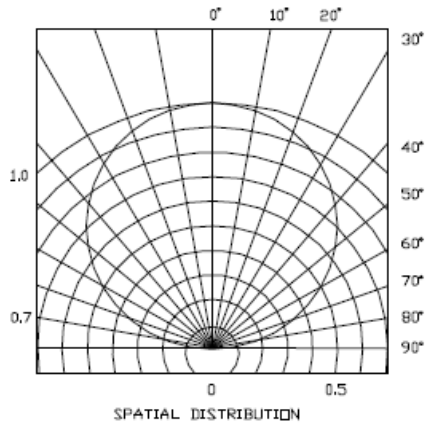
LUMINOUS INTENSITY Vs FORWARD CURRENT



FORWARD CURRENT DERATING CURVE



LUMINOUS INTENSITY Vs AMBIENT TEMPERATURE

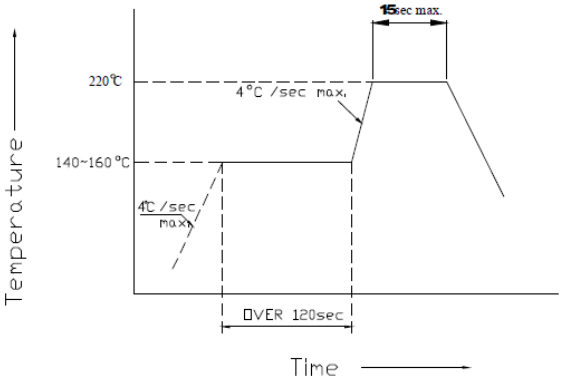


SPATIAL DISTRIBUTION

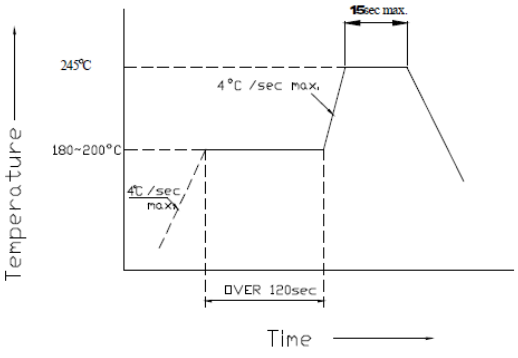
7. SMT REFLOW SOLDERING INSTRUCTIONS

Number of reflow process shall be less than 2 times and cooling process to normal temperature is required between first and second soldering process.

1) Lead solder

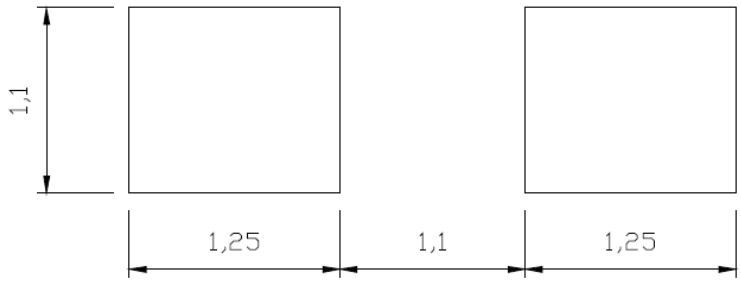


2) Lead-free solder



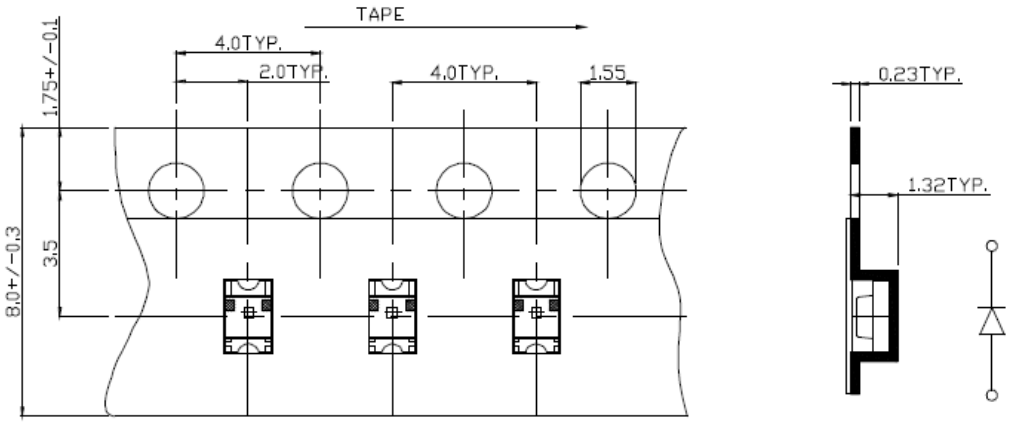
8. RECOMMENDED SOLDERING PATTERN

(Units: mm)



9. TAPE SPECIFICATIONS

(Units: mm)



Adhesion strength of cover tape: Adhesion strength to be 0.1-0.7N when the cover tape is turned off from the carrier at 10º angle to be the carrier tape.

10. RELIABILITY

10.1 TEST TIMES AND RESULTS

Test item	Standard test method	Test conditions	Note	Number of damaged
Resistance to soldering heat (Reflow soldering)	JEITA ED-4701 300 301	Tsld=260ºC, 10sec. (Pre treatment 30ºC, 70%,168hrs)	2 times	0/50
Solderability (Reflow soldering)	JEITA ED-4701 300 303	Tsld=215±5ºC, 3sec. (Leader solder)	1time over 99%	0/50
Thermal shock	JEITA ED-4701 300 307	-40ºC~100ºC 5min. 5min.	100 cycles	0/50
Temperature cycle	JEITA ED-4701 100 105	-40ºC~25ºC~100ºC~25ºC 30min. 5min. 30min. 5min.	100 cycles	0/50
High temperature storage	JEITA ED-4701 200 201	Ta=100ºc	1000hrs	0/50
High temperature high humidity storage	JEITA ED-4701 100 103	Ta=80ºC, 80%RH	1000hrs	0/50
Low temperature storage	JEITA ED-4701 200 202	Ta=-40ºC	1000hrs	0/50
Steady state operating life		Ta=25ºC, I_F=20MA	1000hrs	0/50
Steady state operating life of high temperature		Ta=85ºC, I_F=5mA	1000hrs	0/50
Steady state operating life of high humidity heat		60ºC, 90%RH, I_F=15mA	500hrs	0/50
Steady state operating life of low temperature		Ta=-30ºC, I_F=20MA	1000hrs	0/50

10.2. CRITERIA FOR JUDGING THE DAMAGE

Item	Symbol	Test conditions	Criteria for judgement	
			Min	Max
Forward voltage	V_F	I_F=20MA	-	U.S.L.* x 1.1
Reverse current	I_R	VR=5V	-	U.S.L.* x 2.0
Luminous intensity	I_V	I_F=20MA	L.S.L.** x 0.7	-

*) U.S.L.: Upper Standard Level **) L.S.L.: Lower Standard Level

11. INTENSITY AND COLOR BIN LIMITS

11.1. INTESITY BIN LIMITS (I_F=20MA)

SELECTION CODE FOR SUPER BRIGHT LEDS		
Group	**Light intensity in mcd (20MA)**	
	Min.	**Max.**
1	70	100
2	100	130

Tolerance for each Bin limit is ±10%

11.2. COLOR BIN LIMITS (I_F=20MA)

COLOR CODE FOR GREEN LEDS + DISPLAYS		
Group	**Dom. Wavelength (nm)**	
	Min.	**Max.**
1	464	466
2	466	468
3	468	470
4	470	472

Tolerance for each Bin limit is ±1nm.

12. FORWARD VOLTAGE BIN LIMITS (I_F=20MA)

Grade	1	2	3	4
Range	2.8-3.0	3.0-3.2	3.2-3.4	3.4-3.6

Tolerance for each Bin limit is ±0.1V

NOTES