

**MESSRS : All the companies**

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**Brochure**

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**CUSTOMER'S PRODUCT NAME:**

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**TDK PRODUCT NAME: DC/DC CONVERTER UNIT ALD-606012PJ131**

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**TDK-Lambda Corporation**

PREPARED BY	APPROVED BY	AUTHORIZED BY
<i>K.Negoro Nov./4th/2009</i>	<i>K.Yamaishi Nov./4th/2009</i>	<i>H.Masuoka Nov./4th/2009</i>

DWG.No.	CTR-3659-A
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**<Product Summary>**

\*This product is DC-DC converter that is designed for LED driver.

\*This product has PWM pulse dimming function(Apply external pulse source),Analog dimming(Add an external resistor) and remote on/off function.

\*This product has alarm function for safety operation. When load open is happened, this product limit the output voltage and output alarm voltage.

\*This product has alarm function for LED open detection. If any strings are open,(1pin) outputs around 5V. When all strings are connected normally, (1pin) outputs around 0 V.

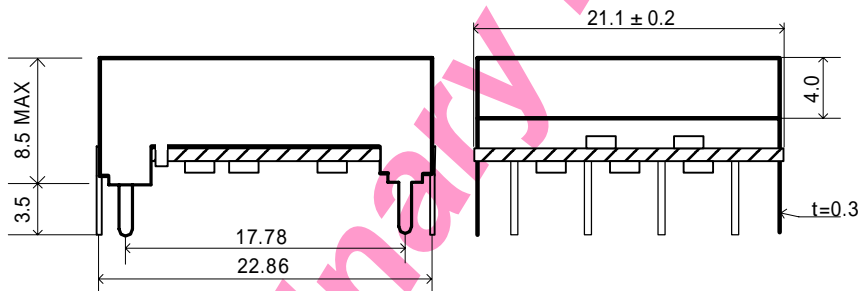
[1]Appearance, Structure and Dimensions

1-1. Outline

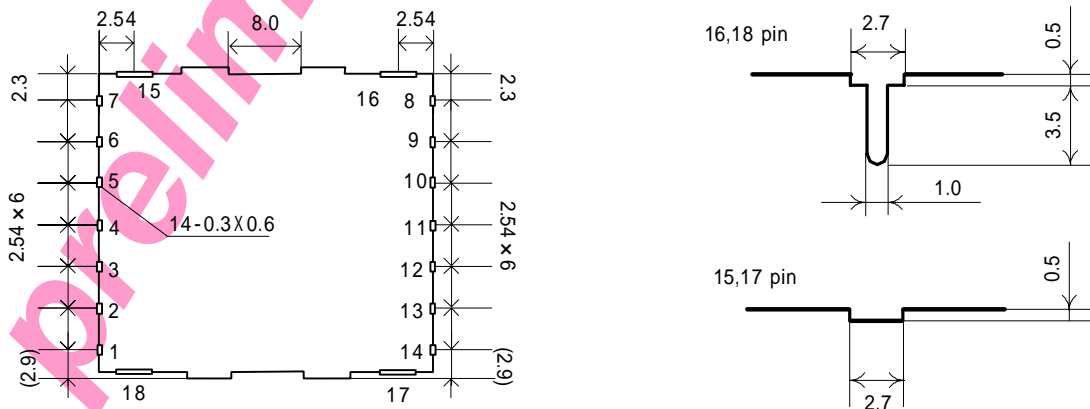
TOP View



Side View



Bottom View



Unit in mm

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## 1-2. Pin Configuration

(Input)

Pin No.	Symbol	Remark
1	Vst	Normal : 0(V) / Abnormal : 5(V)
2	N.C	-
3	Vin	Input Voltage
4	GND	GND
5	Vrmt	OFF : 0-0.4(V) / ON : 2.5-Vin(V)
6	Rbr	Analog Dimming MIN : 0(k ) / MAX : 10(k )
7	Vpwm	PWM Dimming 0(V) : OFF / 3.3(V) : ON

(Output)

Pin No.	Symbol	Remark
8	-CH1	CH1 - Cathode side
9	-CH2	CH2 - Cathode side
10	-CH3	CH3 - Cathode side
11	Vo	CH1-6 Anode side
12	-CH4	CH4 - Cathode side
13	-CH5	CH5 - Cathode side
14	-CH6	CH6 - Cathode side

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[3]Electrical Characteristics

Item	Symbol	Condition						Specification			Unit
		Vin(V)	Vrmt(V)	Vpwm(%)	Rbr2(k )	Ta( )	RL1-3( )	MIN.	TYP.	MAX.	
Output Current	Iout1-6	12±0.5	5±0.25	100	(10)	25±10	T.B.D	-	(40)	-	mArms
PWM Dimming	Ipwm1-3	12±0.5	5±0.25	(50)	(10)	25±10	T.B.D	-	(20)	-	mArms
Analog Dimming	Iadim1-3	12±0.5	5±0.25	100	(1)	25±10	T.B.D	-	(20)	-	mArms
Input Current1	Iin1	12±0.5	5±0.25	100	(10)	25±10	T.B.D	-	(1.1)	-	A
Input Current2	Iin2	12±0.5	0	100	(10)	25±10	T.B.D	-	-	(1.0)	mA
Alarm Output	Vst1	12±0.5	5±0.25	100	(10)	25±10	T.B.D	-	-	(1)	V
	Vst2	12±0.5	5±0.25	100	(10)	25±10		(4.5)	(5.0)	-	V

preliminary information

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[4] Measurement Circuit

T.B.D.

[5] Reliability Test

This product is satisfied following reliability test.

Item	Condition	Judgement Standard
High Temperature Continuous Operation	85degC 500hrs.	Electrical and apperance should be in the spec.
Heat Shock	-40degC <-> 85degC 30min./each 100cycles	
Humidity Environment Off and on Operation	60degC 90%R.H. On 1hr / Off 3hrs. 100cycles.	
Vibration	5 ~ 10Hz Amplitude 10mm 10 ~ 200Hz Accerated Verocity 21.6m/s <sup>2</sup> (2.2G) Log Sweep :10min. X,Y,Z direction 60min/each total 3hrs.	
Shock	588m/s <sup>2</sup> (60G) 11ms Half-sine wave once each axis X,Y,Z,-X,-Y,-Z total 6times	

[6] Packaging and Marking

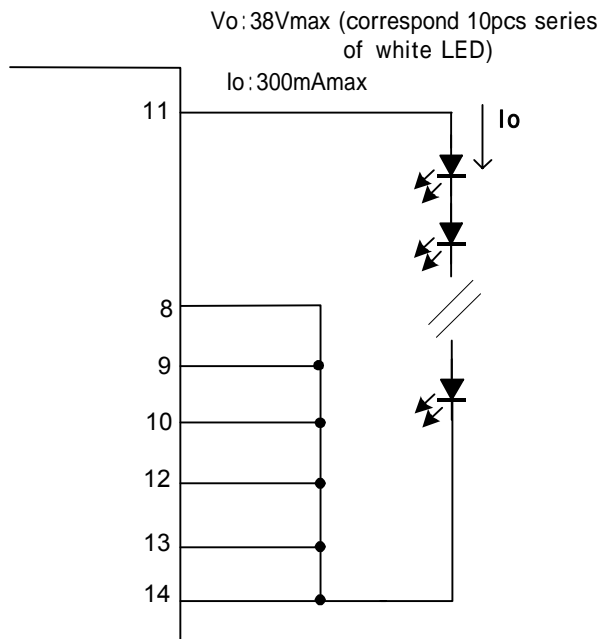
T.B.D

preliminary information

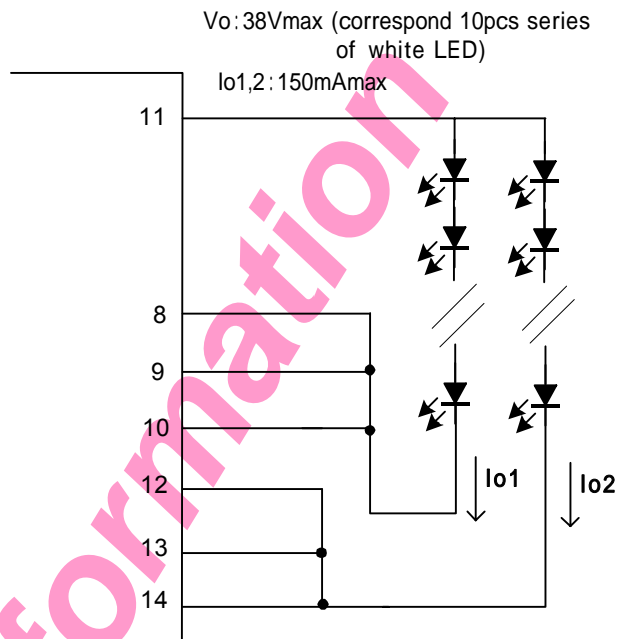
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[7]LED Connection Diagram

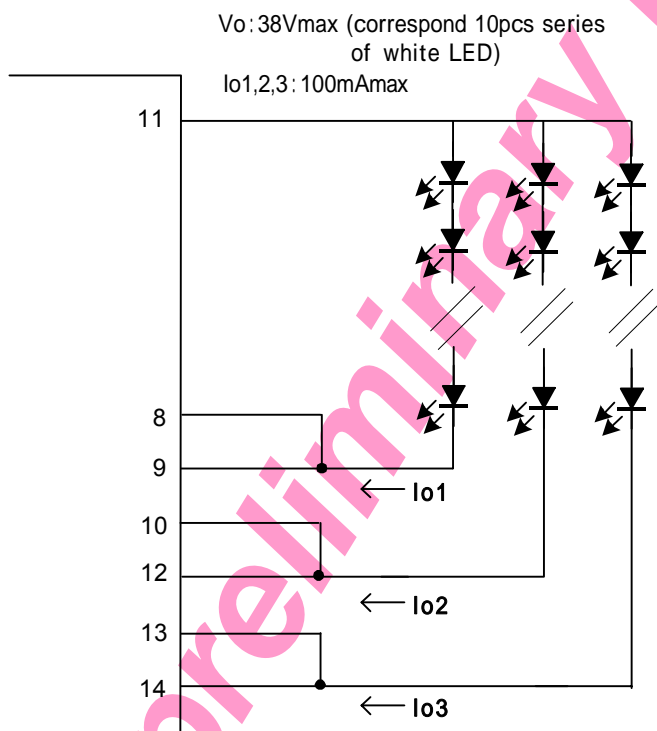
· single series



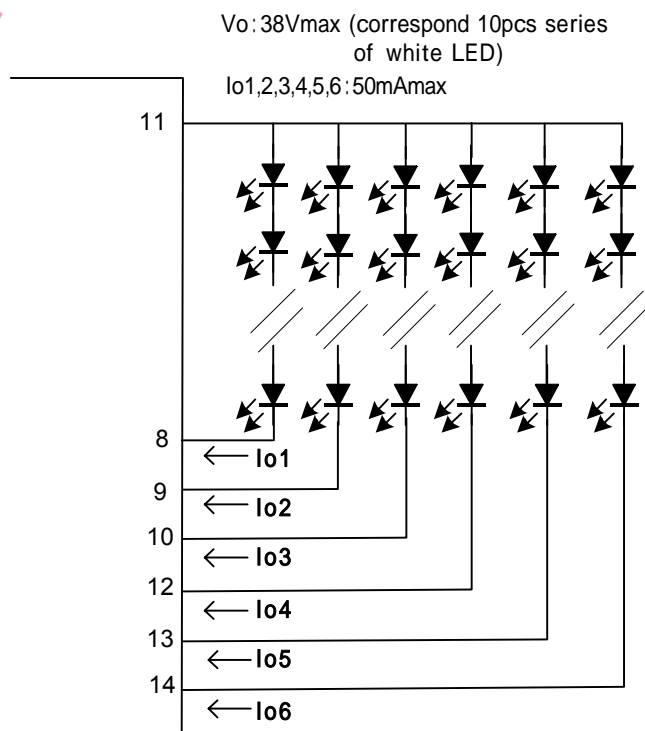
· 2 parallel



· 3 parallel



· 6 parallel



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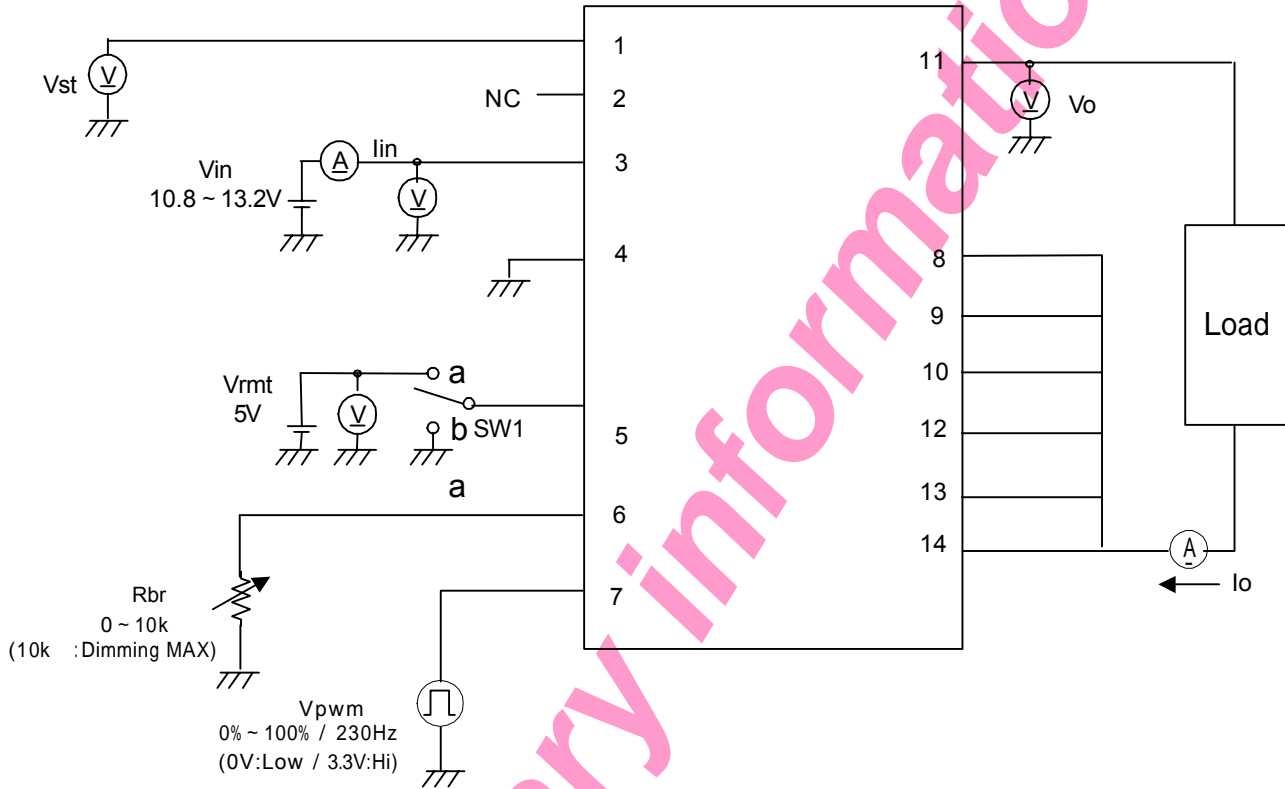
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<Reference date>

[7] Electrical date

These dates(page.8 ~ 11) are measured in following measurement circuit (single series).



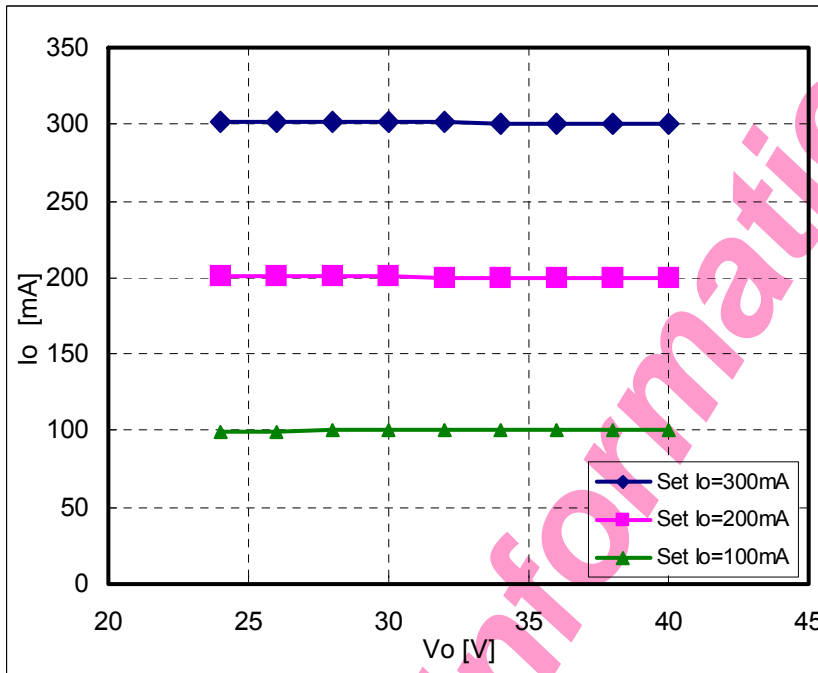
- Ⓧ : 直流電圧計 (ADVANTEST R6452A相当品)
- ⓐ : 直流電流計 (ADVANTEST R6452A相当品)

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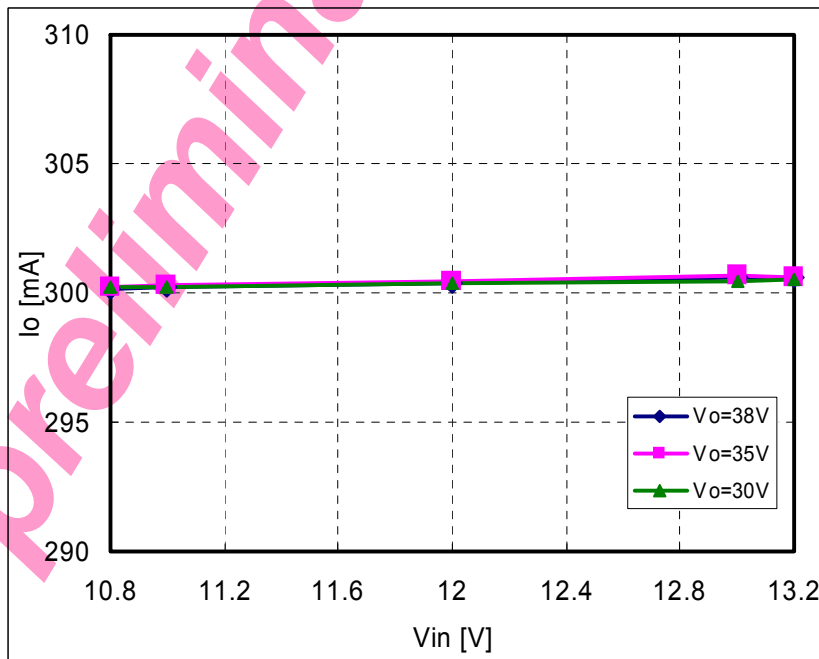
(1) Load Disturbance

Ta : 25  
 Vin : 12V  
 Vrmt : 5V  
 Rbr : 0-10k  
 Vpwm : 100%



(2) Input Disturbance

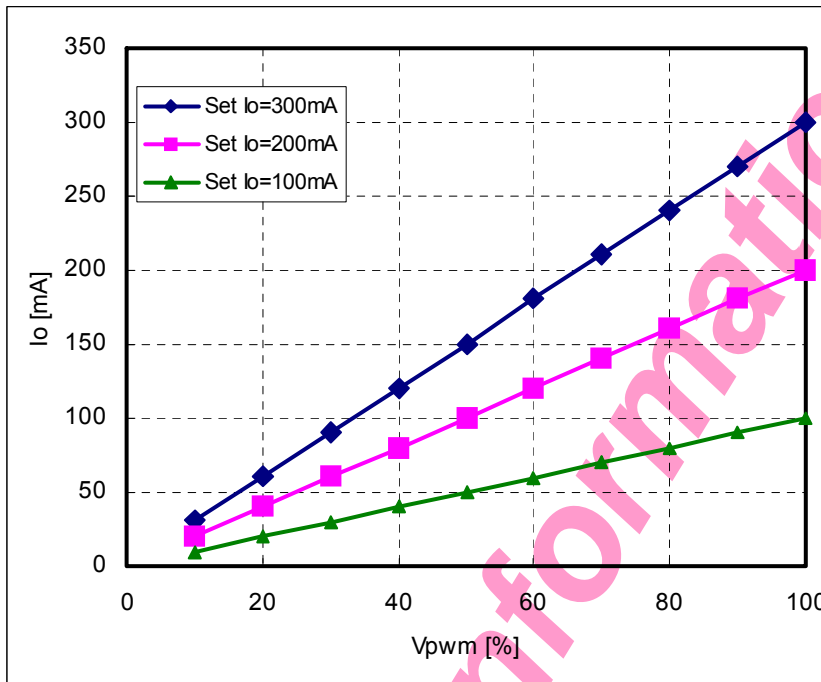
Ta : 25  
 Vin : 10.8-13.2V  
 Vrmt : 5V  
 Rbr : 10k  
 Vpwm : 100%



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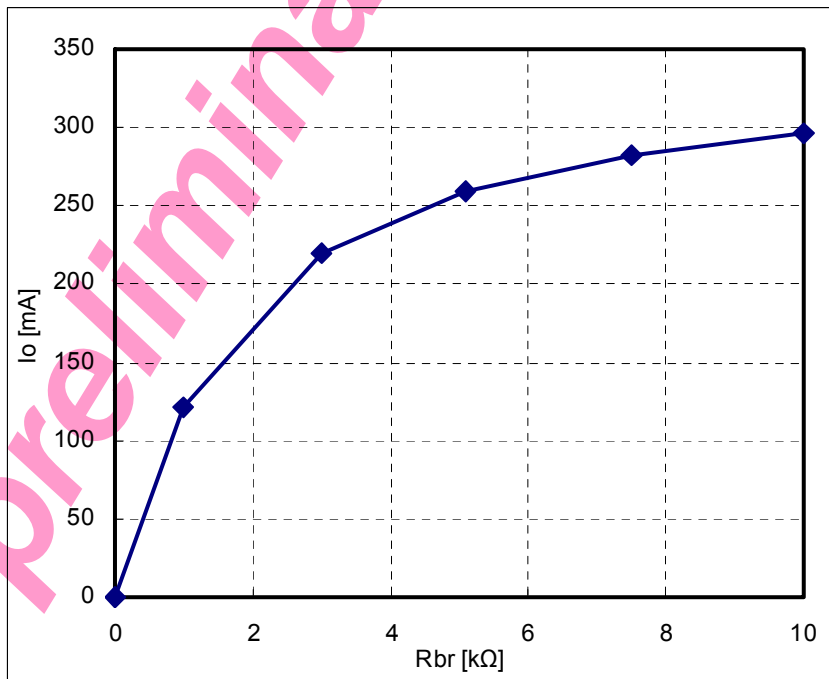
(3) PWM Dimming Characteristic

Ta : 25  
 Vin : 12V  
 Vrmt : 5V  
 Rbr : 0-10k  
 Vpwm : 0-100%



(4) ADIM Dimming Characteristic

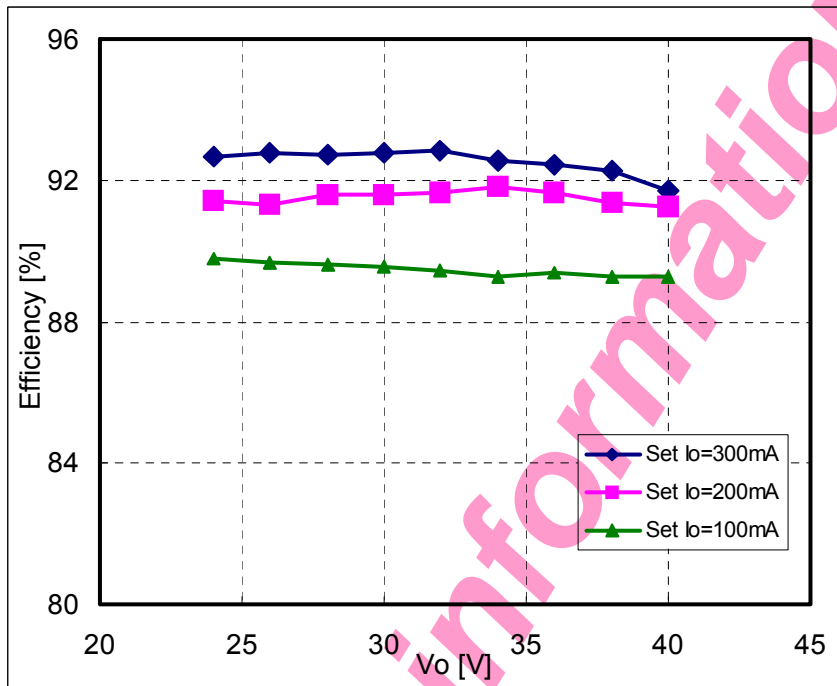
Ta : 25  
 Vin : 12V  
 Vrmt : 5V  
 Rbr : 0-10k  
 Vpwm : 100%



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(5) Efficiency Characteristic

Ta : 25  
 Vin : 12V  
 Vrmt : 5V  
 Rbr : 0-10k  
 Vpwm : 100%



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**(6) Temperature Derating Curve**

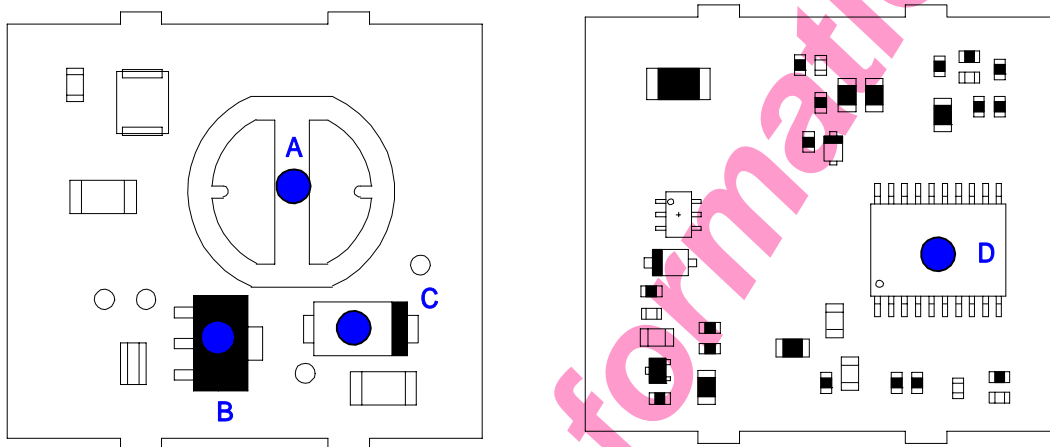
Temperature rise is different depending on product setting.  
Please confirm in follow the procedure

Detach the case from this product ,then setting on your board.

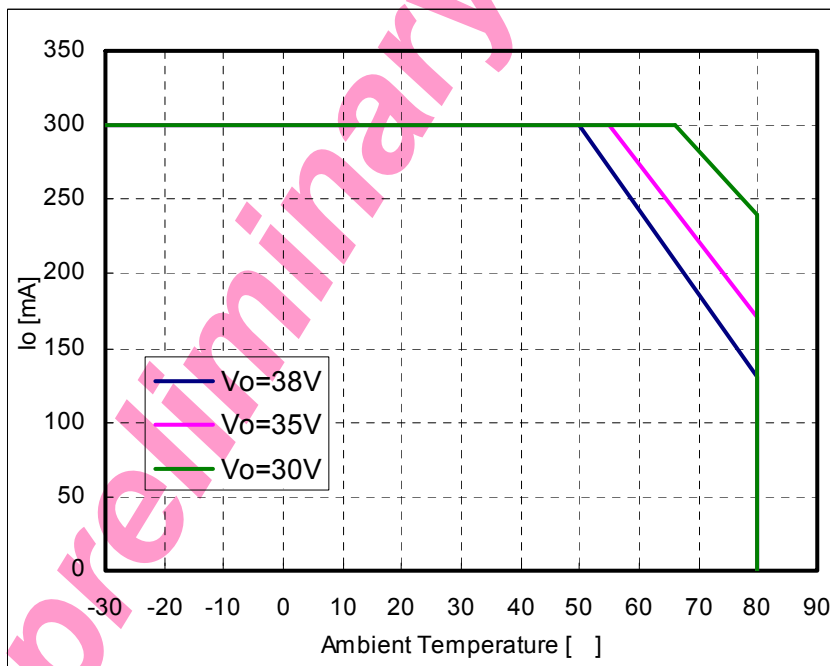
Keep aging to saturation temperature on your worst-case condition(maximum output current ,and Operating Temperature).

Measure following point'A ~ D'.

Please maintain a surface temperature under 110 .



The following is derating curve of output current on our evaluation board.



\*Attention : In the case of parallel connection, temperature rise of IC(point 'D') is higher if each string has varied voltage (total of forward voltage).

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