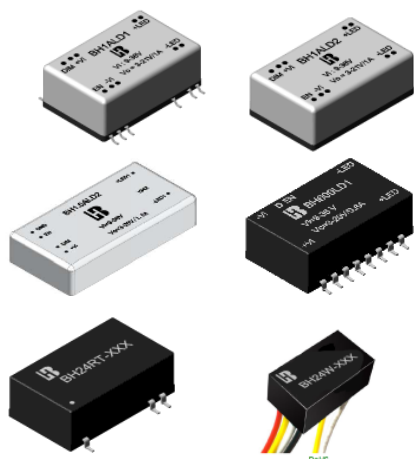


DC-DC Converters (LED Drivers), up to 48W THT and SMT

BH1ALDX, BH1R5ALD2, BH2ALD2, BH600LD1 and BH24RTxxxD2 and BH24W-xxxLD3 series



- Ⓢ *Input Voltage Range: 5.5-48V and 9-36V*
- Ⓢ *Output Voltage Range: 3-20Vdc and 3.3-36Vdc*
- Ⓢ *Power Level: up to 48W*
- Ⓢ *Isolation: None*
- Ⓢ *Efficiency : up to 96% , no heatsinks required*
- Ⓢ *Operating Temperature Range: -40°C to +85°C*
- Ⓢ *Additional Features:*
 - Ⓢ *IEC CISPR25 Class 3~5 ECE R10 Approved*
 - Ⓢ *Open Strings and Output Short Circuit protection*
 - Ⓢ *Suitable for driving illuminating LED*
 - Ⓢ *Built-in Analog and PWM Dimming Control*
 - Ⓢ *Thermal Shut-Down*

Electrical Specification @ 25 °C (For BH1ALDX Op:-40 °C to +85°C)

Model Number	Input Voltage Range	Output Voltage Range	Output Current (mA)	Input Current (mA)		Eff .(%)
				Full. Load	No Load	
BH1ALDX	9~36V	3~21 Vdc	1000	10	975	90

Electrical Specification @ 25 °C (For BH1R5ALD2 Op:-40 °C to +85°C)

Model Number	Input Voltage Range	Output Voltage Range	Output Current (mA)	Input Current (mA)		Eff .(%)
				Full. Load	No Load	
BH1R5ALD2	9~36V	3~20 Vdc	1500	10	1380	89

Electrical Specification @ 25 °C (For BH2ALD2 Op:-40 °C to +85°C)

Model Number	Input Voltage Range	Output Voltage Range	Output Current (mA)	Input Current (mA)		Eff .(%)
				Full. Load	No Load	
BH2ALD2	9~36V	3~20 Vdc	2000	10	1825	89

Electrical Specification @ 25 °C (For BH600LD1 Op:-40 °C to +85°C)

Model Number	Input Voltage Range	Output Voltage Range	Output Current (mA)	Input Current (mA)		Eff .(%)
				Full. Load	No Load	
BH600LD1	9~36V	3~20 Vdc	600	10	556	90



Electrical Specification @ 25 °C (For BH24RT Op:-40 °C to +71°C)

Model Number	Input Voltage Range	Output		Dimming Control	Full Load Eff .(%)
		Voltage (VDC)	Current (mA)		
BH24RT-300LD2	5.5~48V Nominal:24Vdc	3.3-36	0-300	PWN+ Analogue	96
BH24RT-350LD2		3.3-36	0-350	PWN+ Analogue	96
BH24RT-500LD2		3.3-36	0-500	PWN+ Analogue	96
BH24RT-600LD2		3.3-36	0-600	PWN+ Analogue	96
BH24RT-700LD2		3.3-36	0-700	PWN+ Analogue	96
BH24RT-1000LD2		3.3-36	0-1000	PWN+ Analogue	96

Electrical Specification @ 25 °C (For BH24W Op:-40 °C to +71°C)

Model Number	Input Voltage Range	Output		Dimming Control	Full Load Eff .(%)	Max. Capacitive Load(uF)
		Voltage (VDC)	Current (mA)			
BH24W-300LD3(X1/X2/X3)	5.5~48V Nominal:24Vdc	3.3-36	0-300	PWN+ Analogue	96	1000
BH24W-350LD3(X1/X2/X3)		3.3-36	0-350	PWN+ Analogue	96	1000
BH24W-500LD3(X1/X2/X3)		3.3-36	0-500	PWN+ Analogue	96	1000
BH24W-600LD3(X1/X2/X3)		3.3-36	0-600	PWN+ Analogue	96	1000
BH24W-700LD3(X1/X2/X3)		3.3-36	0-700	PWN+ Analogue	96	1000

Note:

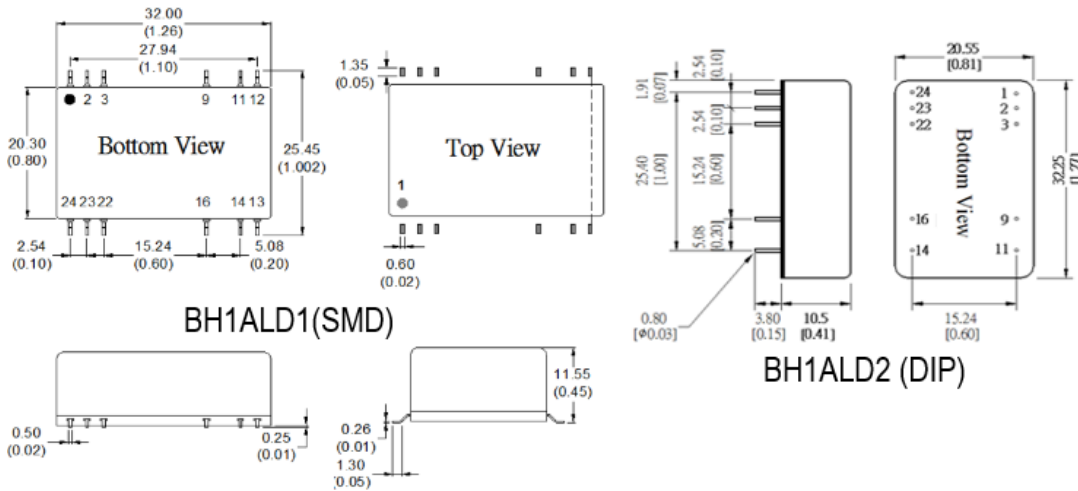
1. The types without suffix are four-wire products without analogue dimming+ PWM dimming function.
2. The types with suffix X1 are five-wire products with analogue dimming function only.
3. The types with suffix X2 are five-wire products with PWM dimming function only.
4. The types with suffix X3 are six-wire products with analogue dimming+ PWM dimming function.

Process and Materials

1. Storage Temperature: -55°C to +125°C
2. Compliance to J-STD:
 - A. J-STD-002: Solderability of Dipping at 255-260°C
 - B. J-STD-020: Moisture Sensitive Level 1
 - C. SMD Reflow Soldering Peak Temperature 245°C - see page 5 for more detail
3. All parts are packaged in tubes - see pages 6 and 7 for details
4. For full electrical characteristics, curves and applications, please refer to the detailed specification sheets available on request
5. Lead Frame: Cooper Alloy
 - Underplated: Half Hard Ductile Nickel 40-118" (1.0-3.0um)
 - Over plated: 100% Tin electro-deposited per 240-400u"Min(6-10um)
 - Finish: Matte finish 100% Tin solder

Mechanical

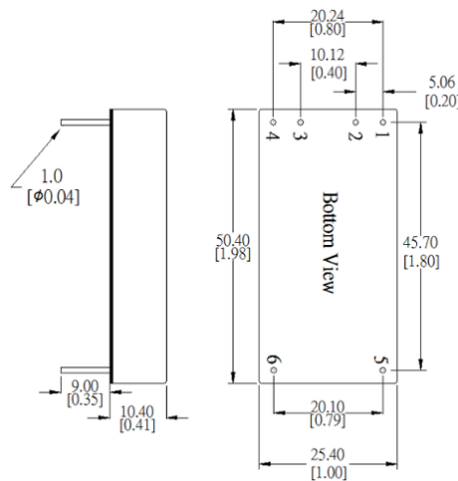
BH1ALDX



BH1ALDX		
PIN	SMT	DIP
1	EN	EN
2	-Vin	-Vin
3	-Vin	-Vin
9	-LED	-LED
11	-LED	-LED
12	NO Function	No Pin
13	NO Function	No Pin
14	+LED	+LED
16	+LED	+LED
22	+Vin	+Vin
23	+Vin	+Vin
24	DIM	DIM

Unit: mm (inch for reference only)
 Pin Section tolerances +/-0.1
 General tolerances +/-0.5

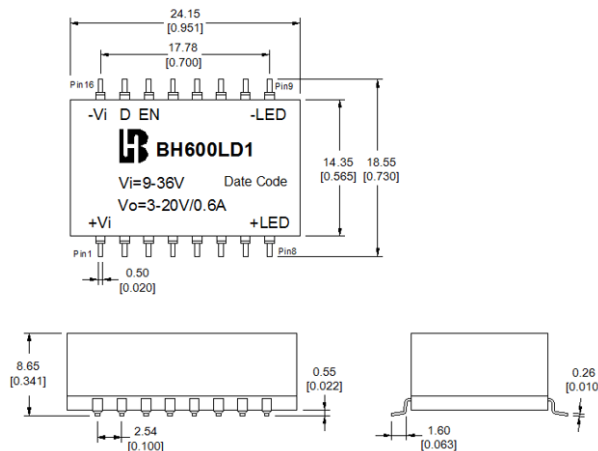
BH1R5/2ALD2



BH1R5/2ALD2	
PIN	DIP
1	GND
2	EN
3	DIM
4	+Vin
5	-LED
6	+LED

Unit: mm (inch for reference only)
 Pin Section tolerances +/-0.1
 General tolerances +/-0.5

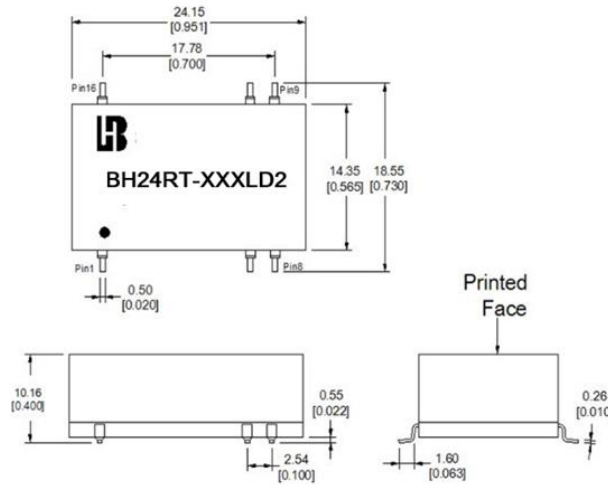
BH600LD1



BH600LD1		
PIN No		Comment
16	GND	Don't connect to -Vout
1	EN	DC Supply
9	DIM	LED - Connection
8	+Vin	LED + Connection
14	-LED	ON/OFF(Leave open if not used)
15	+LED	Analog and PWM Dimming Control(Leave open if not used)

Unit: mm (inch for reference only)
 Pin Section tolerances +/-0.1
 General tolerances +/-0.5

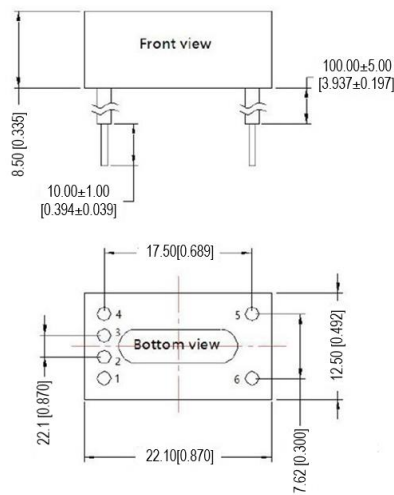
BH24RT



BH24RT-xxxLD2	
PIN	Function
1	GND
7	ON/OFF/PWM
8	-Vout
9	+Vout
10	ANALOGUE DIMMING
16	Vin

Unit: mm (inch for reference only)
 Pin Section tolerances +/-0.1
 General tolerances +/-0.5

BH24W



BH24RT		
PIN	Function	Comments
1 (red)	Vin	DC Supply
2 (yellow)	Analog Dimming	Leave open if not use
3 (white)	PWM/On/Off	Leave open if not use
4 (black)	GND	Do not connect to -Vout
5 (white)	-Vout	LED Cathode connection
6 (yellow)	+Vout	LED Anode connection

Unit: mm (inch for reference only)
 Pin Section tolerances +/-0.1
 General tolerances +/-0.5
 Lead internal diameter 0.76
 Lead external diameter 1.6
 Lead wire spec UL1569 300V 105°C



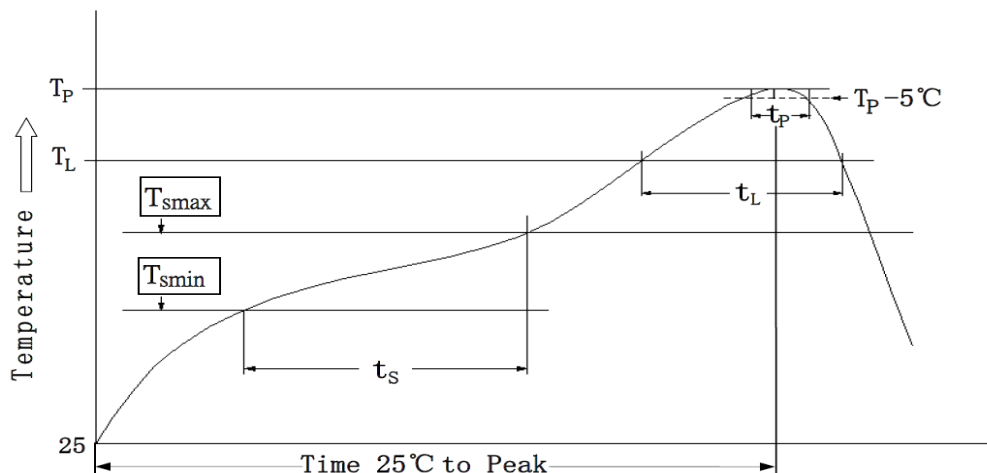
Pb-free SMD Package AIR Reflow Profile

Reference condition:

Step#	Profile Feature	Condition / Duration
Step1	Temperature (T _{smin} to T _{smax})	150 - 200°C
	The Time (t _s)	60 - 120sec
Step2	Ramp-up rate (T _L to T _p)	3°C/sec max
Step3	Liquidous Temperature (T _L)	217°C
	The Time (t _L)	60 - 150sec
Step4	Peak package body temperature (T _p)	See classification temp in Table 1
	The Time (t _p)	30sec max
Step5	Ramp-down rate	6°C/sec max
Note1	All temperatures refer to topside of the package, measured on the package body surface.	
Note2	Time 25°C to peak temperature: 8 minutes max	
Note3	It is not allowed to make a forced cooling in temperature falling range.	
Note4	The applicable condition refer to IPC/JEDEC J-STD-020E standard	

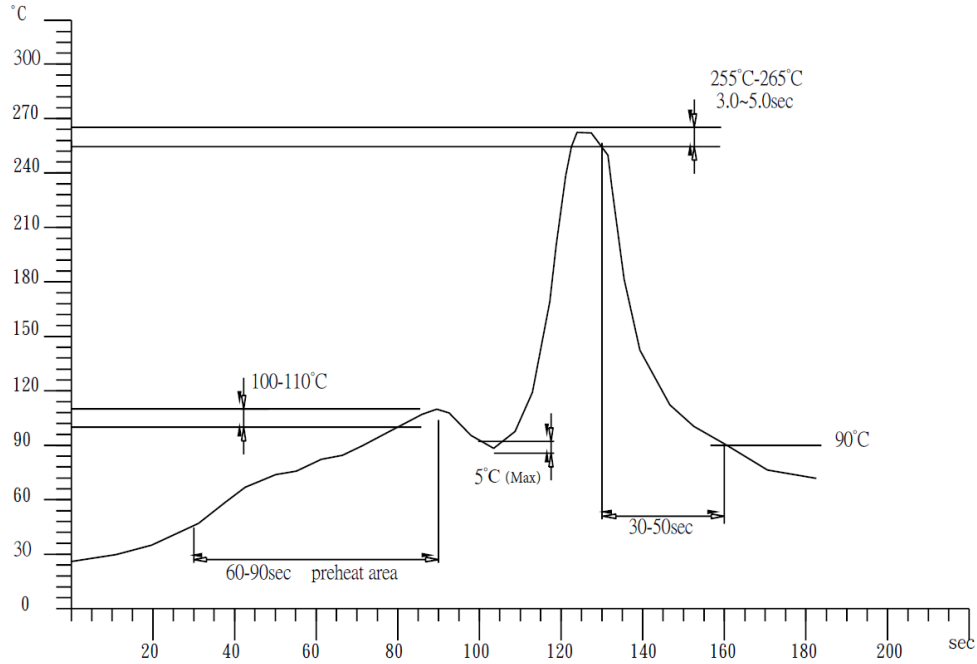
Table 1 Pb-Free Process - Classification Temperatures (T_p)

Package Thickness	Volume mm ³ <350	Volume mm ³ 350 - 2000	Volume mm ³ >2000
<1.6 mm	260°C	260°C	260°C
1.6 mm - 2.5 mm	260°C	250°C	245°C
>2.5 mm	250°C	245°C	245°C



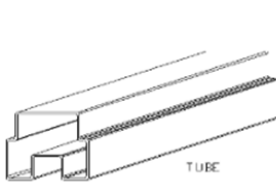


Pb-free THD Wave Solder Profile

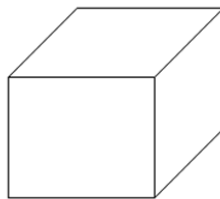


Carton Package

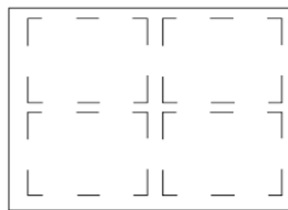
BH24W



TUBE



INNER CARTON:565*115*117



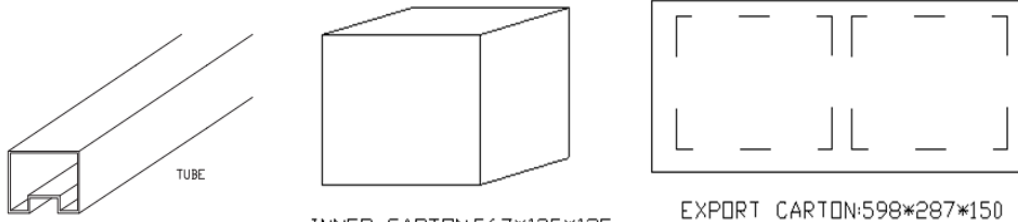
EXPORT CARTON:580*255*265

TUBE=10PCS
 INNER CARTON=25 TUBE=25*10=250PCS
 EXPORT CARTON=4 INNER CARTON=4*250=1000PCS

DC-DC Converters (LED Drivers), up to 48W THT and SMT

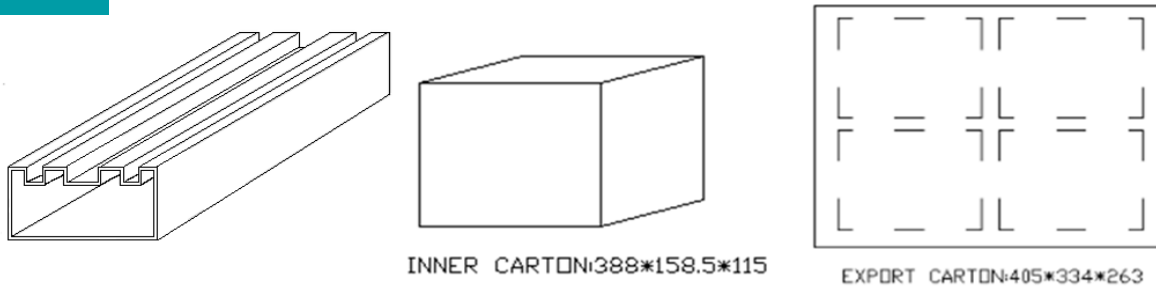
BH1ALDX, BH1R5ALD2, BH2ALD2, BH600LD1 and BH24RTxxxD2 and BH24W-xxxLD3 series

BH1ALDX-DIP



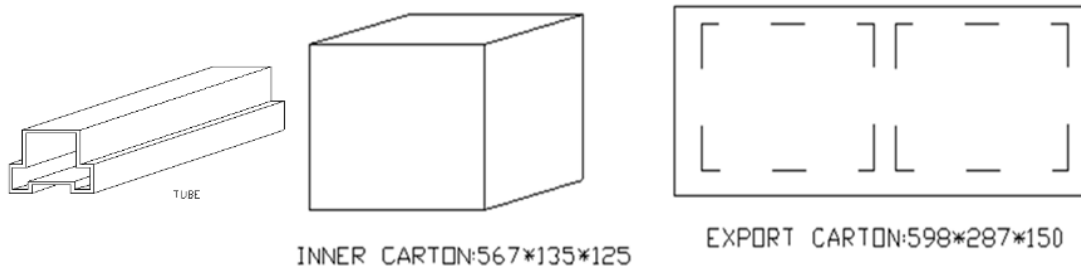
TUBE=15PCS
INNER CARTON=25 TUBE=25*15=375PCS
EXPORT CARTON=2 INNER CARTON=2*375=750PCS

BH1R5/2ALD2



TUBE=12PCS
INNER CARTON=10 TUBE=10*12=120PCS
EXPORT CARTON=4 INNER CARTON=4*120=480PCS

BH600LD1/BH24RT



TUBE=21PCS
INNER CARTON=54 TUBE=54*21=1134PCS
EXPORT CARTON=2 INNER CARTON=2*1134=2268PCS

For More Information:

Americas - prodinfo_network_americas@yageo.com | Europe - prodinfo_network_emea@yageo.com | Asia - prodinfo_network_asia@yageo.com

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