

60W DALI dimmable constant current waterproof led driver



■ Features

- Constant Current (C.C.) output
- Built-in active PFC function, High efficiency up to 88%
- Input voltage/Full range (up to 305VAC)
- Protections: Short circuit/Over current/Over load/Over temperature
- Transformer copper wire is F class, Temperature up to 155°C
- THD ≤ 15%, Dimming range: 0-100%/10-100%
- Comply with DALI V0 IEC60929 and DALI V1 V2 IEC62386 standards
- Noise free, flicker free, 5 years warranty
- OEM & ODM, no MOQ, Support customization

■ Applications

- LED outdoor lighting
- LED landscape light
- LED architectural light
- LED street light
- LED flood light
- LED wall washer light
- LED high light
- LED underground light
- LED tunnel light
- LED garden lights
- LED line light
- LED stage lights
- LED Spot light

■ Description

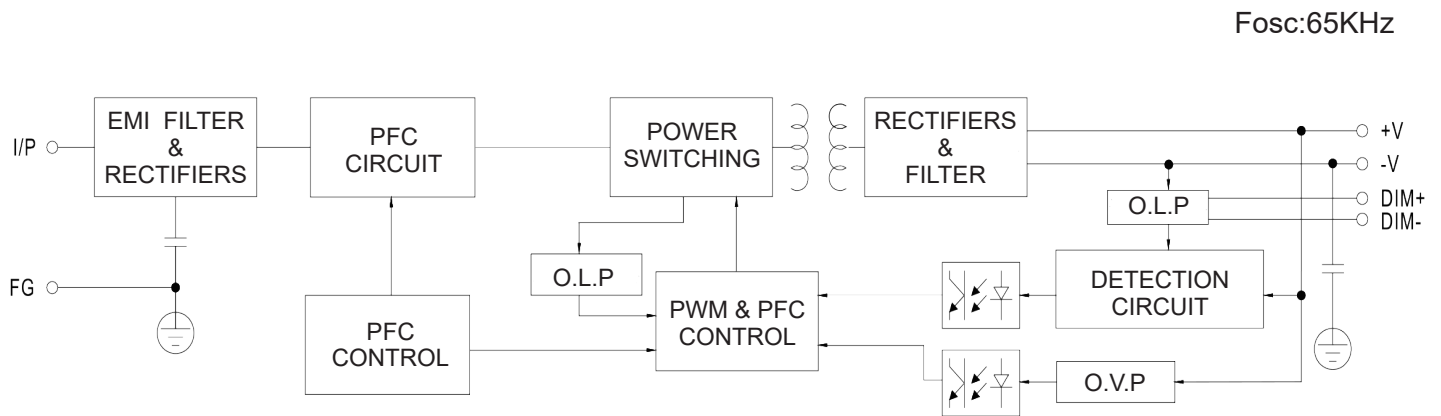
The DALI constant current waterproof series produced by Zoran Technology is an AC-to-DC dimming driver. operates from 90~305VAC and offers models with different rated voltage ranging ~ between 20V and 200V. Thanks to the high efficiency up to 88%, with the fanless design, the entire series is able to operate for -40~ +80 °C case temperature under free air convection. It can be widely matched with all European dimmers and lighting control systems, Australian mainstream dimmers and lighting control systems, such as: Philips, Osram, Lutron, Leviton and Tridonic dimmers and systems, flicker free, achieve perfect soft dimming.

■ Electrical Specification

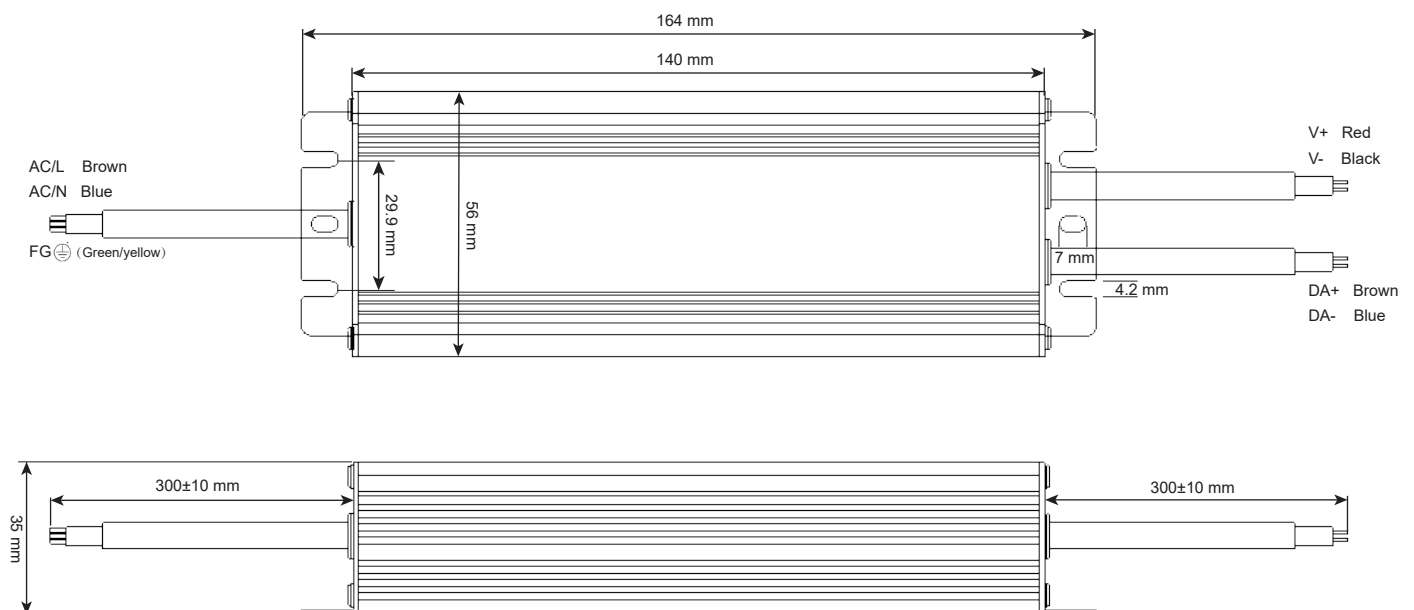
MODEL		ZR-HCM42ND-60W	ZR-HCM60ND-60W	ZR-HCM80ND-60W	ZR-HCM100ND-60W	ZR-HCM120ND-60W
Output	Output Voltage Note.1	27-42 VDC	43-60 VDC	60-80 VDC	80-100 VDC	100-120 VDC
	Ouput Current Note.2	1430 mA	1000 mA	750 mA	600 mA	500 mA
	Rated Power	60 W	60 W	60 W	60 W	60 W
	Current Tolerance Note.4	±3%	±3%	±3%	±3%	±3%
	Auxiliary output(customizable)	12VDC	12VDC	12VDC	12VDC	12VDC
	Setup,Rise Time Note.6	500ms,100ms/115VAC 500ms,100ms/230VAC				
	Hold Up Time (Typ.)	10ms/115VAC 230VAC				
Input	Rate Voltage Note.5	90~265VAC OR 100-277VAC				
	Frequency Rance	48-62Hz				
	Power Factor	PF≥0.98/115VAC PF≥0.96/230VAC PF≥0.95/265VAC at full load				
	THD	THD≤15%(Bipolar)				
	Full load Efficiency	≥86%	≥86%	≥87%	≥87%	≥88%
	AC Current (Typ.)	0.59A/115VAC 0.30A/230VAC 0.26A/265VAC				
	Input signal (Typ.)	DALI or PUSH dim				
	No-load power consumption	≤1.0W				
Protection	Over Current	95-108%				
		Protection type:Constant current limiting,recovers automatically after fault condition is removed				
	Over Load	≤120% Recovers automatically after fault condition is removed				
	Short Circuit	Hiccup Mode,Recovers automatically after fault condition is removed				
	Over Voltage	Protection type:Shut down O/P voltage,re-power on to recover				
	Over Temperature	Shut down O/P voltage,re-power on to recover				
Environmen	Working Temperature	Tcase=-40~+80℃ (Refer to “Derating curve”)				
	Max Case Temperature	Tcase=+90℃				
	Working Humidity	20-95%RH non-condensing				
	Storage TEMP. Humidity	-40~+80℃ 10-95%RH				
	TEMP. Coefficient	±0.03%/℃(0-50℃)				
Safety & EMC	Safe Standards	U8750,CSA C22.2 No.250.13-12;ENEC AS/NZS IEC EN61347-1;AS/NZS IEC EN61347-2-13 independent EN62348;GB19510.14 IP65 or IP67				
	DALI Standards	Compliance to IEC-62386-101,102,207(only to YD/ND series)				
	Withstand Voltage	I/P-O/P:3.75KVAC I/P-FG:2.0KVAC O/P-FG:1.0KVAC				
	Isolation Resistance	I/P-O/P,I/P-FG,O/P-FG:100M ohms/500VDC/25℃/70%RH				
	EMC Emission	Compliance to EN55015,EN61000-3-2 Class C(≥60% load);EN61000-3-3;GB17743;GB17625.1				
	EMC Immunity	Compliance to EN61000-4-2,3,4,5,6,8,11;EN61547 heavy industry level(surge 4KV)				
Others	Dimension(L*W*H)	164*56*35 mm				
	Weight	600g				
	Packing	30pcs/19kg/ctn				
Note	1.All parameters Not specially mentioned are measured at 230VAC input, rated load and 25℃ of ambient temperature. 2.Ripple&Noise are measured at 20MHz of bandwidth by using a 12”twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor. 3.Tolerance: includes set up tolerance, line regulation and load regulation. 4.The power supply is considered as a component that will be operated in combination with final equipment. Since EMC performance will be affected by the complete installation, the final equipment manufactures must re-qualify EMC Directive on the complete installation again. 5.Please refer to the product warranty on Zoran Technology website http://www.zorantech.com . 6.If you need other special parameters, please contact our customer service for consultation!					



■ Block Diagram

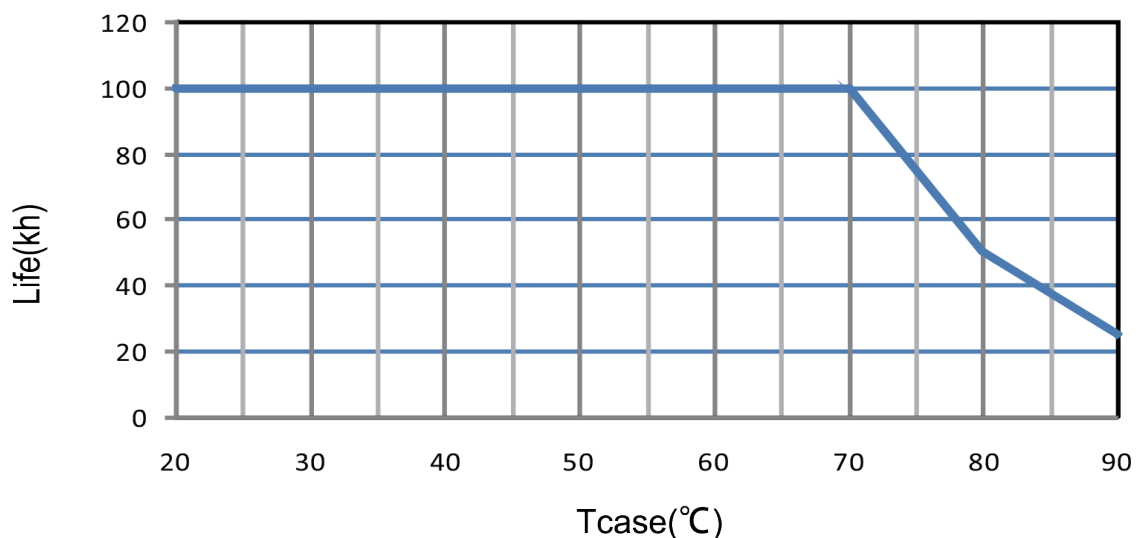


■ Mechanical Specification

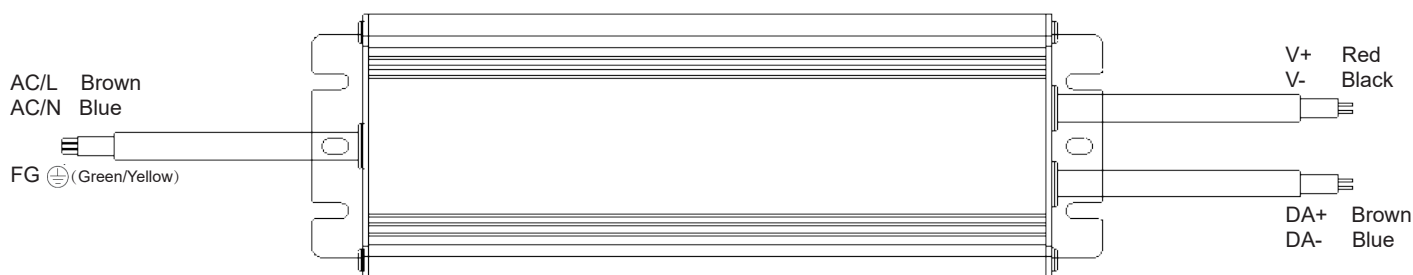


- ※ The yellow-green wire at the input is the ground (FG), the brown wire is the AC phase wire (L), and blue wire is the AC neutral wire (N);
- ※ The brown wire at the output is the positive dimming signal (DA+) and the blue wire is the dimming signal negative (DA-), the red wire is the positive output voltage (V+) and black wire is the negative output voltage (V-);
- ※ In addition, the length and thickness of the input and output lines can be customized according to customer requirements. Please contact Zoran Customer Service for details;

■ Life



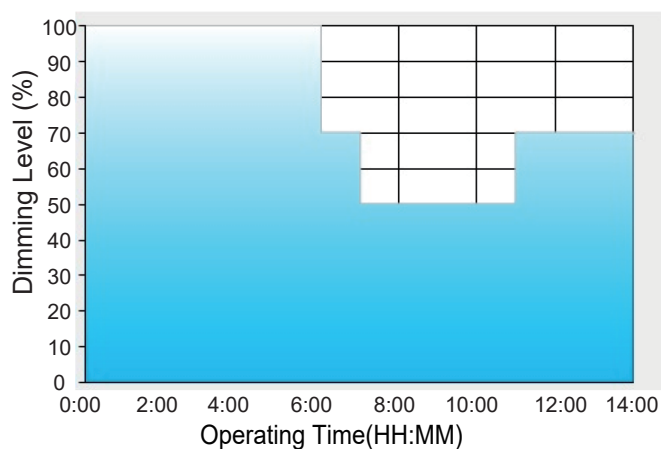
■ Dimming Operation



※ DALI Interface

- Add DALI signal between DA+ and DA- ;
- DALI protocol 16 groups and 64 addresses ;
- Can set any output current to boot ;

☉ D01-Type: the profile recommended for residential lighting



Set up for D01-Type in Smart time dimming software program:

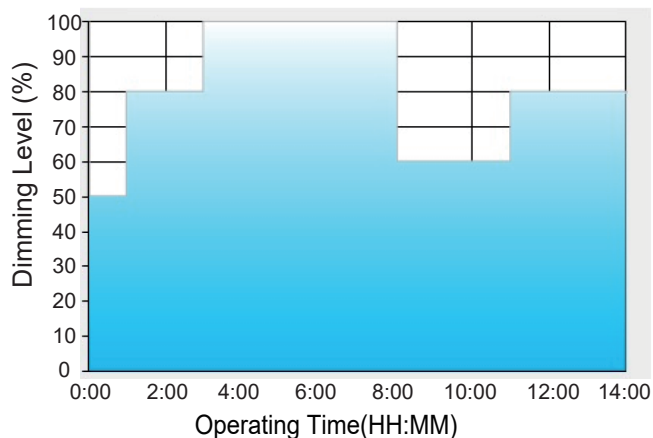
	T1	T2	T3	T4
TIME **	06:00	07:00	11:00	----
LEVEL **	100%	70%	50%	70%

** : Time matches Operating Time in the diagram whereas LEVEL matches Dimming level.

Example: If a residential lighting application adopts D01-Type, when turning on the power supply at 6:00pm, for instance:

- [1] The power supply will switch to the constant current level at 100% starting from 6:00pm.
 - [2] The power supply will switch to the constant current level at 70% in turn, starting from 0:00am, which is 06:00 after the power supply turns on.
 - [3] The power supply will switch to the constant current level at 50% in turn, starting from 1:00am, which is 07:00 after the power supply turns on.
 - [4] The power supply will switch to the constant current level at 70% in turn, starting from 5:00am, which is 11:00 after the power supply turns on.
- The constant current level remains till 8:00am, which is 14:00 after the power supply turns on.

☉ D02-Type: the profile recommended for street lighting



Set up for D02-Type in Smart time dimming software program:

	T1	T2	T3	T4	T5
TIME **	01:00	03:00	08:00	11:00	----
LEVEL **	50%	80%	100%	60%	80%

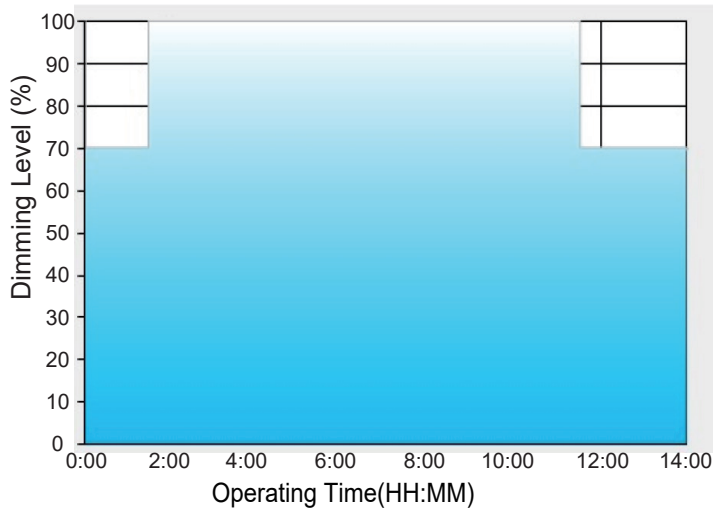
** : Time matches Operating Time in the diagram whereas LEVEL matches Dimming level.

Example: If a street lighting application adopts D02-Type, when turning on the power supply at 5:00pm, for instance:

- [1] The power supply will switch to the constant current level at 50% starting from 5:00pm.
 - [2] The power supply will switch to the constant current level at 80% in turn, starting from 6:00pm, which is 01:00 after the power supply turns on.
 - [3] The power supply will switch to the constant current level at 100% in turn, starting from 8:00pm, which is 03:00 after the power supply turns on.
 - [4] The power supply will switch to the constant current level at 60% in turn, starting from 1:00am, which is 08:00 after the power supply turns on.
 - [5] The power supply will switch to the constant current level at 80% in turn, starting from 4:00am, which is 11:00 after the power supply turns on.
- The constant current level remains till 6:30am, which is 14:00 after the power supply turns on.



◎ D03-Type: the profile recommended for tunnel lighting :



Set up for D03-Type in Smart time dimming software program:

	T1	T2	T3
TIME **	01:30	11:00	----
LEVEL **	70%	100%	70%

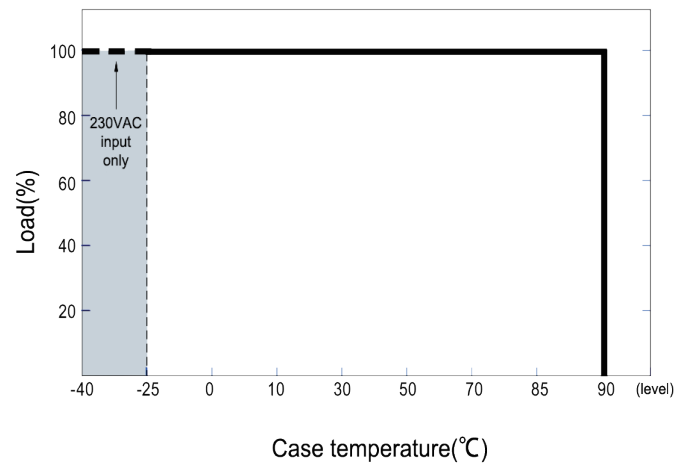
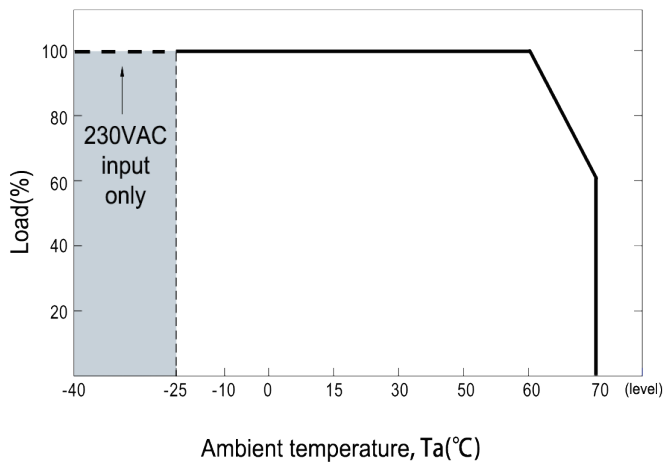
** : Time matches Operating Time in the diagram whereas LEVEL matches Dimming level.

Example: If a residential lighting application adopts D03-Type, when turning on the power supply at 4:30pm,for instance:

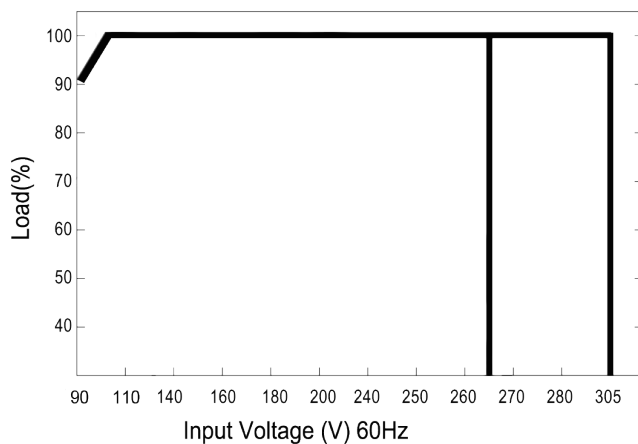
- [1] The power supply will switch to the constant current level at 70% starting from 4:30pm.
- [2] The power supply will switch to the constant current level at 100% in turn,starting from 6:00pm,which is 01:30 after the power supply turns on.
- [3] The power supply will switch to the constant current level at 70% in turn,starting from 5:00am,which is 11:00 after the power supply turns on.
The constant current level remains till 6:30am ,which is 14:00 after the power supply turns on.



Output load VS Temperature



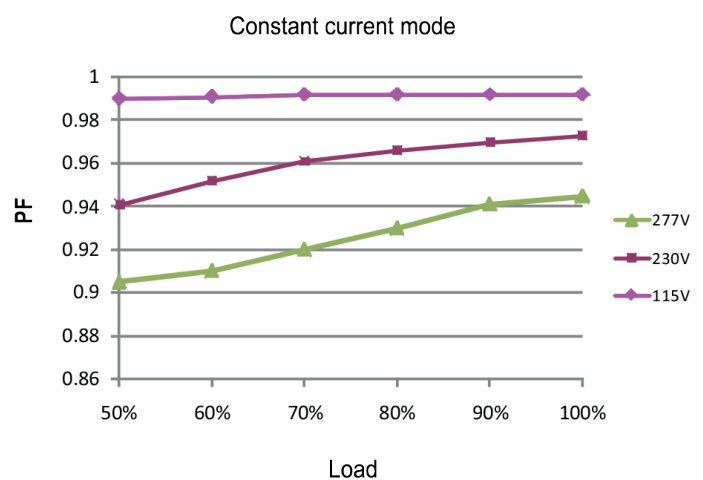
Static characteristic curve



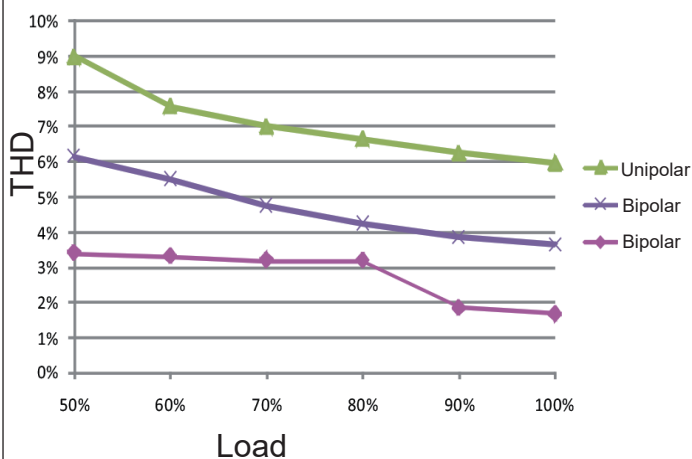
※ Derating output at low input voltage

PF characteristic curve

※ Tcase at 80°C



THD characteristic curve



Efficiency VS Load

