

## Description

The X6E DALI-2 series is outdoor programmable LED driver that operates in constant current with high PF value and full power input voltage range 176~305Vac model, the X6E DALI-2 series also provide multiple isolated dimming controls, output current adjustable via NFC. It also helps clients to improve the management of logistics and stock. The compact metal case and high efficiency enable the driver to operate with high reliability. It provides extreme durability with an IP67 rating and extends product lifetime. Overall protection is provided against lightning surge, output over voltage, short circuit and over temperature to ensure low failure rate.



## Product Features

- Universal input voltage: 90~305Vac;
- Full power work range: 176~305Vac;
- Isolate constant power design;
- DALI-2&Timer dimming;
- Dim-to-off with Standby Power < 0.5 W;
- Adjustable output current with NFC;
- Programmable Constant Lumen Output (CLO);
- Output and Dimming Signal Isolating;
- High surge protection: 6KV line-line, 10KV line-earth;
- Protections: SCP / OVP / OTP;
- IP67 design for indoor and outdoor applications;
- Suitable for dry / damp / wet locations;
- 5 years warranty;

## Application

Road lighting,  
Industrial Lighting,  
Landscape Lighting.

## Models

Model Number	Input Voltage Range (Vac)	MAX Output Power (W)	Output Voltage Range (Vdc)	Full Power Output Current Range (A)	Default Current(A)	Eff. (Typ.)	PF(Typ.)	THD(Typ.)
X6E-240D056	220~240	240	28~56	4.3~6.85	4.3	93%	0.97	5%

### NOTES:

[1]. D means DALI-2 dimming.

[2]. All specifications are measured at 25°C ambient temperature, input voltage 230Vac, and the typical value tested at full load, if no specific note.

## Input Specifications

Parameter	Min	Typ.	Max	Notes
Input Voltage Range	90Vac	220~240Vac	305Vac	
Full Power Work Range	176Vac	220~240Vac	305Vac	Refer to Output Power vs. Input Voltage curve
Input Frequency AC	47Hz	50/60Hz	63Hz	
Max Input Current	-	-	1.6A	220-240Vac& 100% load
Max Input Power	-	-	280W	220-240Vac& 100% load
Leakage Current	-	-	0.70mA	IEC 60598-1;240Vac/60Hz
Inrush Current	-	-	75A	240Vac, 100% load
Standby power	-	-	0.5W	230Vac@25°C
Power Factor (PF)	0.93	0.95	-	220-240Vac, 50-60Hz, 70%-100% load
Total Harmonic Distortion (THD)	-	5%	12%	220-240Vac, 50-60Hz, 70%-100% load
MCB(B16)	-	4	-	230Vac; 100%load

## Output Specifications

Parameter	Min	Typ.	Max	Notes
Output Voltage Range	28Vdc	-	56Vdc	The full power cannot be lower than 35Vdc
Open Circuit Voltage	-	-	100Vdc	
Output Current Range	0.685A	-	6.85A	Adjustable Output Current with programmer
Full Power Current Range	4.30A	-	6.85A	
Current Accuracy	-5%	-	+5%	
Total Output Current Ripple (pk-pk)	-	5%	10%	20MHz BW full load& LED load the LED load ripple is slightly different for different leds
Startup Overshoot Current	-	-	10%	220-240Vacfull load condition, LED load
Line Regulation	-1%	-	+1%	25°C±10°Cambient temperature, input changes from 200Vac to 264Vac
Load Regulation	-3%	-	+3%	Load varies from 70% to 100% with 230Vac Input at 25°C±10°Cambient temperature
Turn-on Delay Time	-	-	1.0s	240Vac,100% load

## General Specifications

Parameter	Min	Typ.	Max	Notes
Efficiency@230Vac Io=4.30A	91.0%	93.0%	-	100% load, 25°C ambient temperature
Efficiency@230Vac Io=6.85A	90.0%	92.0%	-	100% load, 25°C ambient temperature
Mean Time Between Failure	-	200Khours	-	25°C±10°C ambient temperature, 230Vac, 80% load condition(MIL-HDBK-217/SR-332)
Lifetime	-	50Khours	-	230Vac & 100% load, Tc 75°C, refer to lifetime vs. case temperature curve
Operating Temperature Ta	-40°C	-	+50°C	Output Power vs. Ambient Temperature curve
Operating Tc for Safety Tc_s	-40°C	-	+90°C	
Operating Tc for Warranty Tc_w	-40°C	-	+75°C	5-year warranty shell temperature, humidity: 10% to 95% RH
Storage Temperature Ta	-40°C	-	+85°C	Humidity: 5% to 100% RH
Altitude	-60m	-	4000m	
Input Under voltage Protection	55Vac	65Vac	75Vac	Turn off the output or hiccup when the input voltage falls below protection voltage.
Over Temperature Protection Tc	-	95°C	-	Decreases output current, returning to normal after over temperature is removed.
Short Circuit Protection	-	-	-	Constant current mode. The output shall return to normal when the fault condition is removed.
Over Voltage Protection	-	-	-	Run into protection model when output voltage exceeds limit, and return to normal when the fault
Dimensions (L*W*H)	213.5*72*39mm			
Net Weight	1020±50g/PCS			
Package (L*W*H)	575*375*205mm; 18PCS/Ctn, Gross Weight: 20.5Kg			

## Dimming

Parameter	Min	Typ.	Max	Notes
DALI-2 (High Voltage Level)	9.5V	16V	22.5V	
DALI-2 (Lower Voltage Level)	-6.5V	0V	6.5V	
DALI-2 (Dimming Output Range)	10% I <sub>max</sub>	-	100% I <sub>max</sub>	I <sub>max</sub> =6.85A
DALI-2 (Sink Current)	0mA	-	2.0mA	
Timer dimming	-	-	-	winter and summer time
Output lumen compensation	-	-	-	Constant lumen output function

## Safety Specification

Parameter	Min	Typ.	Max	Notes
Dielectric Strength (Input-Output)	-	3750Vac	-	60s, Current not exceeding 5mA
Dielectric Strength (Input-Ground)	-	1875Vac	-	60s, Current not exceeding 5mA
Dielectric Strength (Output-Ground)	-	500Vac	-	60s, Current not exceeding 5mA
Dielectric Strength (Input-Dimming)	-	3750Vac	-	60s, Current not exceeding 5mA
Dielectric Strength (Dimming-Ground)	-	500Vac	-	60s, Current not exceeding 5mA
Grounding Resistance	-	-	0.1Ω	25°C±10°C Ambient Temperature, pass 25A Current, 60s.
Insulation Resistance	10MΩ	-	-	Input-Output, Input-PE, Output-PE, 500Vdc/60s/25°C

## Safety Compliance

Safety Category	Standards	Approved	Notes
CCC	GB19510.1,GB19510.14	√	
CE	EN61347-1, EN61347-2-13, EN62493	√	
ENEC	EN61347-1, EN61347-2-13, EN62384	√	
CB	IEC61347-1, IEC61347-2-13	√	
BIS	IS 15885(PART 2/SEC 13)		
UL	UL 8750		
CUL	CSA C22.2 No.250.13		
KC	K61347-1, K61347-2-13		
PSE	J61347-1, J61347-2-13		
SAA	AS/NZS IEC 61347.2.13		
SAA	AS/NZS 61347.1		

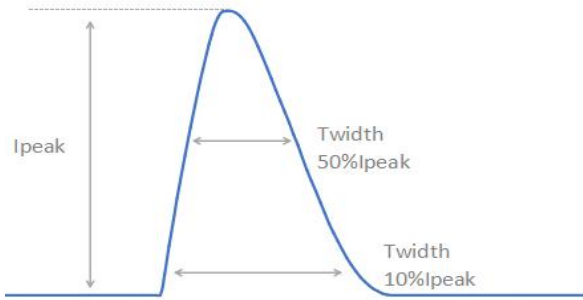
## EMC Compliance

EMC Category	Standards	Approved	Notes
CCC	GB/T 17743, GB 17625.1	√	
CE	EN 55015	√	
CE	EN 61000-3-2, EN 61000-3-3	√	
CE	EN61000-4-2,3,4,5,6,11	√	
CE	EN 61547	√	
KC	K61547		
KC	K00015		
PSE	J55015		
FCC	FCC part 15		
Surge Shock Immunity	ANSI/C82.77-5-2017		
Ringling Wave			

## RoHS

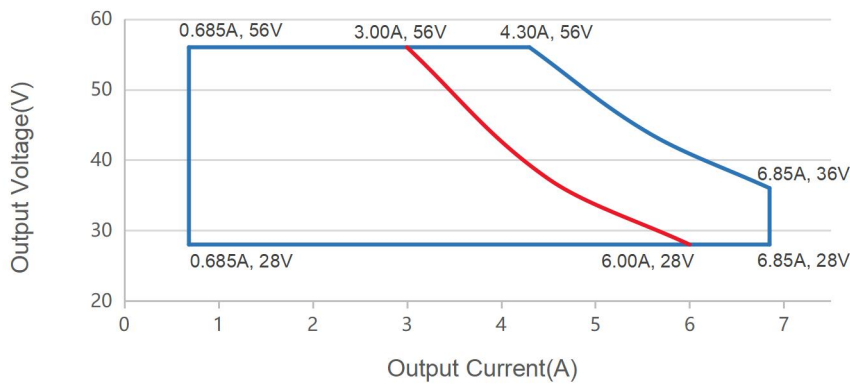
Our products comply with RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU.

**Inrush Current**



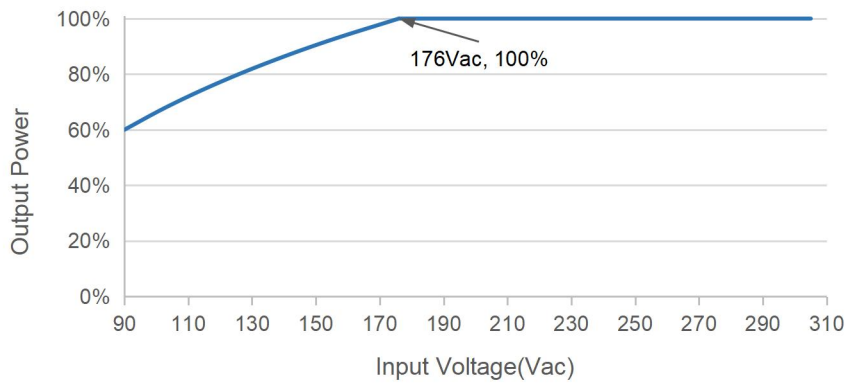
$V_{in}$	$I_{peak}$	$T(@10\% \text{ of } I_{peak})$	$T(@50\% \text{ of } I_{peak})$
230Vac	62A	712 $\mu$ s	360 $\mu$ s

**Output Voltage vs. Output Current**

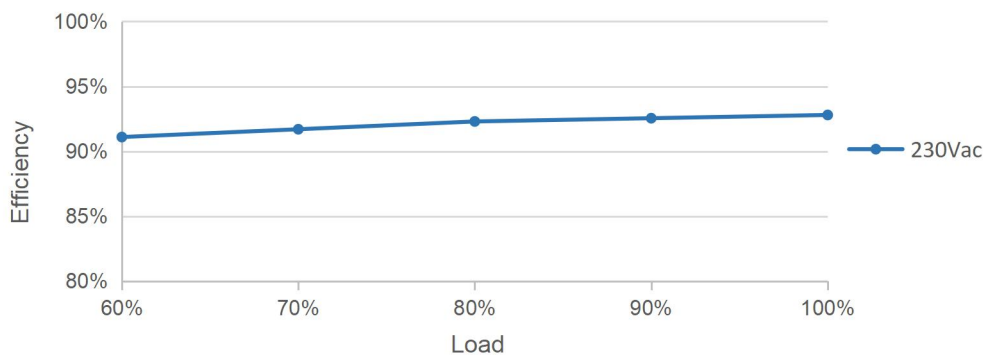


Red curve: good performance area

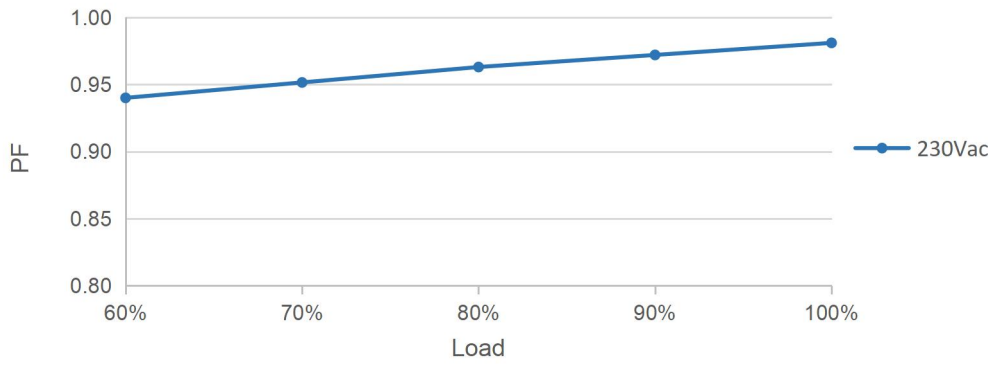
**Output Power vs. Input Voltage**



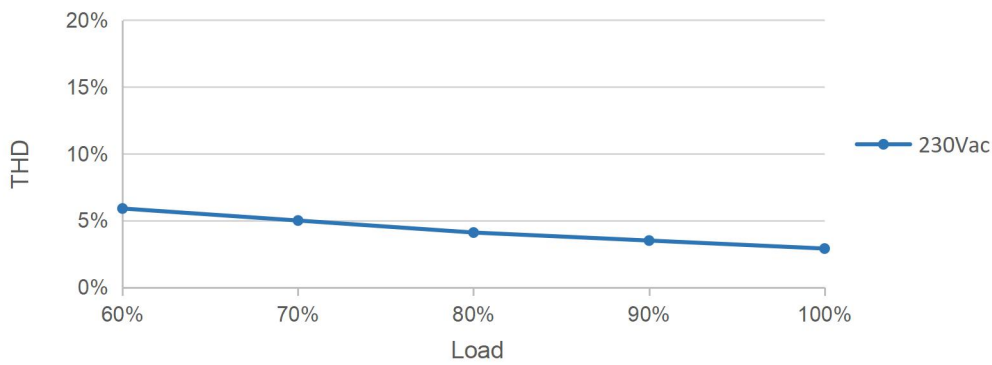
**Efficiency vs. Load**



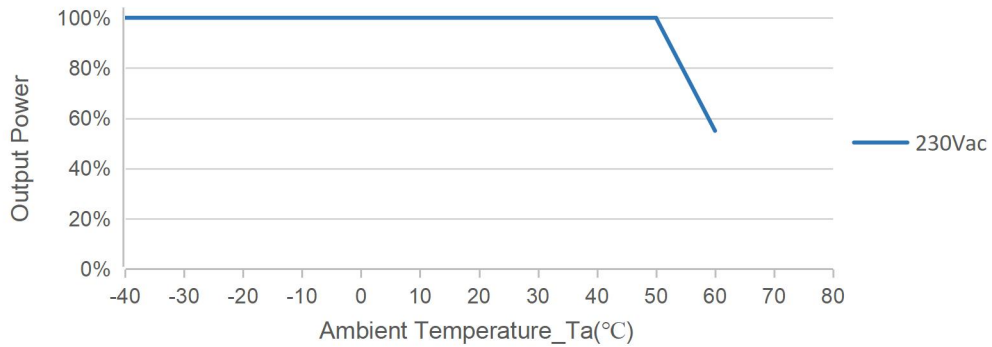
**PF vs. Load**



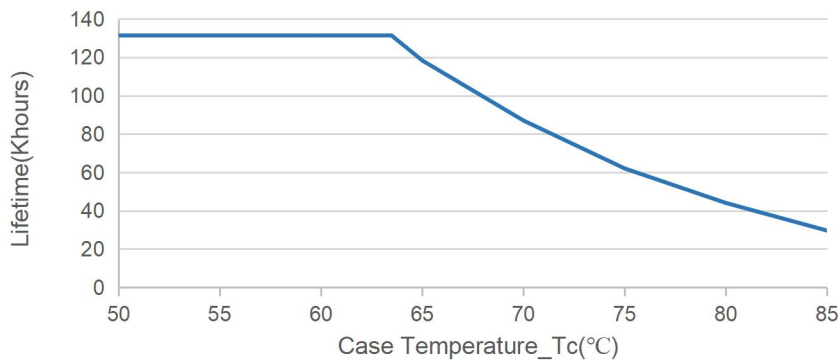
**THD vs. Load**



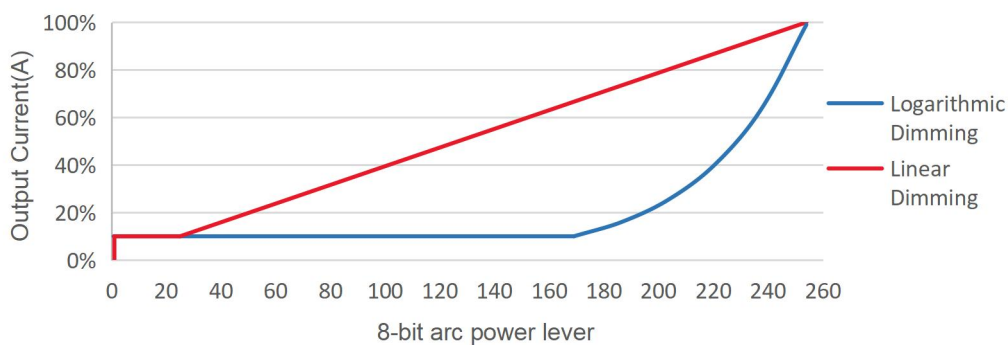
**Output Power vs. Ambient Temperature**



**Lifetime vs. Case Temperature**

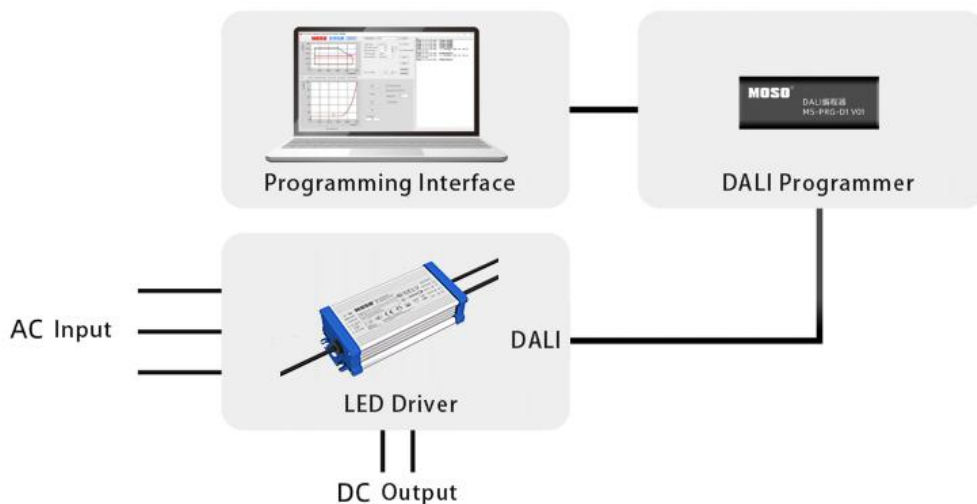


**DALI-2 Dimming**



**Programming Link (DALI-2)**

Programming mode 1



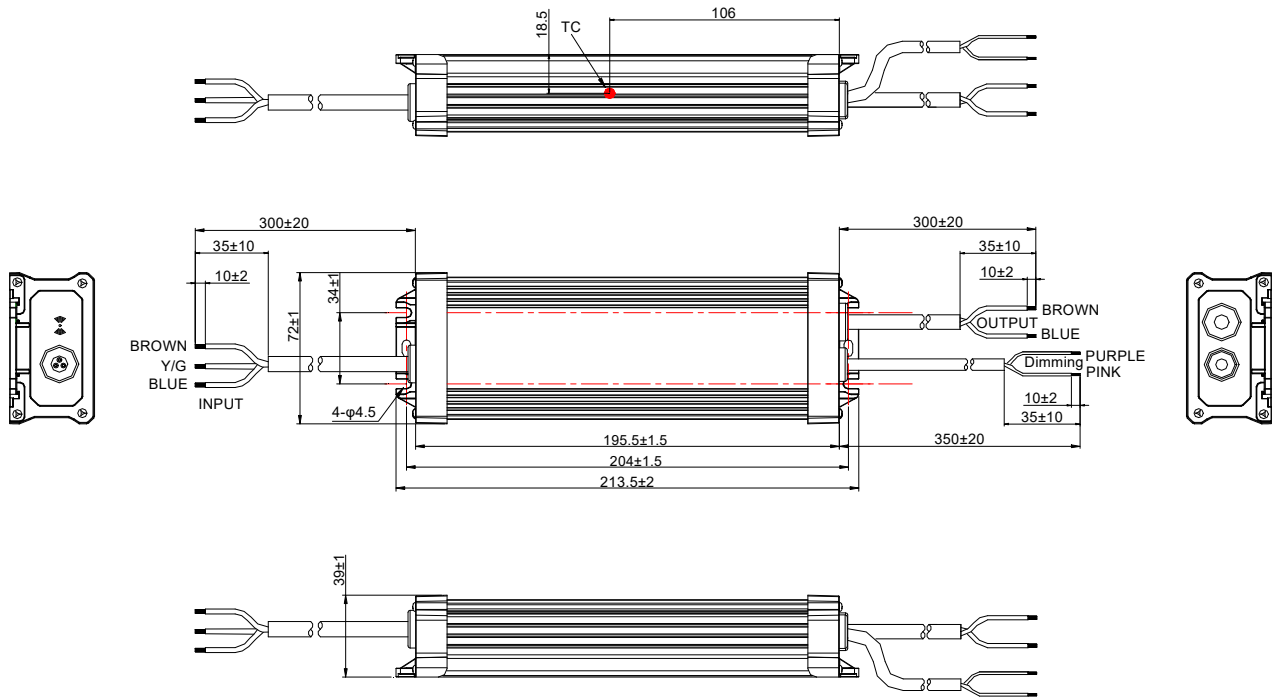
Programming mode 2



Notes:

1. The driver does not need to be powered on during the programming process.
2. Please refer to MS-PRG-D1 or MS-PRG-N1 (Programmer) datasheet for details.
3. Applicable to FEIG programmer: ISC PRH101 and CPR30-USB

**Mechanical Outline**



**Specification**

Input	CCC+VDE H05RN-F 3*1.0 mm <sup>2</sup> L=300±20mm	CCC/CE
Output	CCC+VDE H05RN-F 2*1.0 mm <sup>2</sup> L=300±20mm	CCC/CE
Dimming	UL 2733 2*22AWGL=350±20mm	UL

**Label**

← ( ( ( ) ) ) <b>INPUT</b>	<b>MOSO</b> <sup>®</sup> X6E-240D056 LED DRIVER <small>(Standard current type)</small> LED 控制装置 <small>(标准型内置型驱动)</small>	CCC CE	IP67 RoHS	DALI SELV	<b>OUTPUT</b>
L (BROWN 棕)	<b>INPUT</b> (输入) 220-240V~50/60Hz, 280W Max. 1.6A Max. PF:0.97		t <sub>a</sub> : 50°C t <sub>c</sub> : 90°C		(BROWN 棕) Vo+
G (Y/G 黄/绿)	<b>OUTPUT</b> (输出) 28-56V 0.685-6.85A Max.Uout(最大电压):100V 0.685A Max.Power(最大功率):240W				(BLUE 蓝) Vo-
N (BLUE 蓝)	中国制造 仅供LED模块 MADE IN CHINA For LED module only				(PURPLE 紫) DA+
	深圳茂硕电子科技有限公司 SHENZHEN MOSO ELECTRONICS TECHNOLOGY CO., LTD No.1061, Songbai Road, Xili Town, Nanshan District, Shenzhen, CHINA				(PINK 粉) DA-

Note:

Nameplate is laser engraved.



**Version**

A.1	First release	2023-03-07

## Specification for Approval

Product Name: 240W LED Driver

Product Model: X6E-240D056

Rev: A.1

Address: XiLiSongbai Road 1061, Nanshan District, Shenzhen City, Guangdong, China

Tel: 0755-27657000

FAX: 755-27657908

E-mail: info@mosopower.com

Website: http://www.mosopower.com

Prepared By	Checked By	Approved By

## Specification for Approval

Product Name: 240W LED Driver

Product Model: X6E-240D056

Rev: A.1

<b>CUSTOMER AUTHORIZED SIGNATURE</b>		
<b>Tested By</b>	<b>Checked By</b>	<b>Approved By</b>
(Company seal)Return one copy to MOSO with approved signature and company seal.		

Address:XiLiSongbai Road 1061, Nanshan District, Shenzhen City, Guangdong, China

Tel: 0755-27657000

FAX: 755-27657908

E-mail:info@mosopower.com

Website:http://www.mosopower.com

<b>Prepared By</b>	<b>Checked By</b>	<b>Approved By</b>