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REPORT

on

Light-emitting-diode Drivers

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DESCRIPTION

PRODUCT COVERED:

USL, CNL - LED Driver, Class P, see electrical ratings table for models.

ELECTRICAL RATINGS:

*Model No. (suffix -YYYYYY)	Rated Input - CC			Output - CC			Output-AUX (CW)	
	Voltage (Vac)	Freq. (Hz)	Max. Current (A)	Voltage Range (Vdc)	Current Range (mA)	Max. Power (W)	Voltage (Vdc)	Max. Wattage (W)
PLS-A20W-07-55-TPZ	120-277	50/60	0.34	10-55	100-700	20	-	-
PLS-A30W-10-55-TPZ	120-277	50/60	0.37	10-55	275-1050	30	-	-
PLS-A50W-14-55-TPZ	120-277	50/60	0.58	10-55	400-1400	50	-	-
PLS-A65W-18-55-TPZ	120-277	50/60	0.7	10-55	600-1800	65	-	-
PLS-A20W-07-55-TZ	120-277	50/60	0.34	10-55	100-700	20	-	-
PLS-A30W-10-55-TZ	120-277	50/60	0.37	10-55	275-1050	30	-	-
PLS-A50W-14-55-TZ	120-277	50/60	0.58	10-55	400-1400	50	-	-
PLS-A65W-18-55-TZ	120-277	50/60	0.7	10-55	600-1800	65	-	-
PLS-A85W-23-55-TZ	120-277	50/60	0.92	10-55#	700-2300#	85	-	-
PLS-A20W-07-55-TXZ	120-277	50/60	0.34	10-55	100-700	20	9.5-24	1.2
*PLS-A30W-10-55-TXZ	120-277	50/60	0.37	10-55	275-1050	30	9.5-24	1.2
*PLS-A50W-14-55-TXZ	120-277	50/60	0.58	10-55	400-1400	50	9.5-24	1.2
*PLS-A65W-18-55-TXZ	120-277	50/60	0.7	10-55	600-1800	65	9.5-24	1.2
PLS-A85W-23-55-TXZ	120-277	50/60	0.92	10-55#	700-2300#	85	9.5-24	1.2

Output Power = Output voltage x Output current ≤ 85W.

MODEL NOMENCLATURE:

PLS-AEEW-GG-HH-IJ-YYYYYY

TABLE Series:	<u>PLS</u>	-	<u>AEEW</u>	-	<u>GG</u>	-	<u>HH</u>	-	<u>I</u>	<u>J</u>	-	<u>YYYYYY</u>
Group:	1	-	2	-	3	-	4	-	5	6	-	7

Group	Description
1	Series name = PLS
*2	Represents maximum output power of driver, "EE" = 10 if max. output power < 10W = 20 if 10 W < max. output Power ≤ 20 W = 30 if 20 W < max. output Power ≤ 30 W = 40 if 30 W < max. output Power ≤ 40 W = 50 if 40 W < max. output Power ≤ 50 W = 55 if 50 W < max. output Power ≤ 55 W = 60 if 55 W < max. output Power ≤ 60 W = 65 if 60 W < max. output Power ≤ 65 W = 85 if 65 W < max. output Power ≤ 85 W
3	Represents maximum output current of driver, "GG" any 2 digits number. The current range defined for each segment denoted by "GG" (eg.0.1A-0.7A for 07). "current setting" which can be any value within this defined range. 0-30W: = 07 not more than 700 (mA); = 10 not more than 1050 (mA); >30W: = 14 not more than 1400 (mA); = 18 not more than 1800 (mA); = 23 not more than 2300 (mA)
4	Represents maximum output voltage of driver, "HH" = any 2 digits number between 10 and 55 (Vdc);
5	"I" can be "TP" for Terminal Block, isolated 0-10V dimming. "T" for Terminal Block, non isolated 0-10V dimming. "TX" for Terminal Block, non isolated 0-10V dimming, Aux output.
6	"J" can be "Z" represents with 0-10V dimming.
7	Represents customer code for market purpose only, "YYYYYY". May be 0 to 6 digits, any combination of alphanumeric characters or blank.

TECHNICAL CONSIDERATIONS (NOT FOR FIELD REPRESENTATIVE'S USE):

USL - Products designated USL have been investigated using US requirements as noted in the Test Record.

CNL - Products designated CNL have been investigated using Canadian requirements as noted in the Test Record.

MODEL DIFFERENCES

All products covered in this report utilize the same PWB design. The different output voltages and power levels are achieved by means of changes in component values in the primary circuit as well as number of turns in coil windings.

Models with suffix	Output	0-10V dimming circuit	Aux	Enclosure	PWB trace layout and circuit
TPZ	Class 2	Isolated	Not provide	ILL.1	ILL.5,6
TZ, except 85W	Class 2	Non-isolated	Not provide	ILL.2	ILL.7,8
TZ with 85W	Class 2	Non-isolated	Not provide	ILL.30	ILL.32,33
TXZ, except 85W	Class 2	Non-isolated	provide	ILL.2	ILL.7,8
TXZ with 85W	Class 2	Non-isolated	provide	ILL.30	ILL.32,33

Product characteristics-

Model No. [x] applies to all models- see electrical ratings	Input Type	<input type="checkbox"/> Branch Circuit (Mains) <input type="checkbox"/> Isolated Circuit <input type="checkbox"/> Class 2 <input type="checkbox"/> LED Class 2 <input type="checkbox"/> LVLE <input type="checkbox"/> LPS	
	Output Type	<input type="checkbox"/> Non-isolated <input type="checkbox"/> with PLIMIT @ 15 W <input type="checkbox"/> Isolated <input type="checkbox"/> with PLIMIT @ 100 W <input type="checkbox"/> Class 2 <input type="checkbox"/> LED Class 2 <input type="checkbox"/> LVLE <input type="checkbox"/> LPS	
	Environmental Conditions	<input type="checkbox"/> Dry <input type="checkbox"/> Damp <input type="checkbox"/> Wet	
	[x] Additionally evaluated to Supplemental requirements related to	<input type="checkbox"/> Safety Related Electronic Circuits	<input type="checkbox"/> Based on Reliability Evaluation <input type="checkbox"/> Based on Alternate criteria to Reliability Evaluation
		<input type="checkbox"/> Type HL	
		<input type="checkbox"/> Type TL	Tref max/ Measured Tref- xx/ yy ° C
		<input type="checkbox"/> Class P	
		<input type="checkbox"/> Wired Control Circuits	<input type="checkbox"/> Based on Separation of Circuits Evaluation for models with suffix "TPZ" . <input type="checkbox"/> Based on exception for Control Circuit not exiting the lighting equipment <input type="checkbox"/> Based on exception for LED equipment having a Class 2 output power circuit for models with suffix "TZ" or "TXZ"
		<input type="checkbox"/> Temperature Value @ Tc	90 ° C
		<input type="checkbox"/> Phase Cut Dimming	
		<input type="checkbox"/> Type IC LED driver	
		<input type="checkbox"/> Double Insulated LED equipment	
		<input type="checkbox"/> LED Driver Input Power Factor	

CONSTRUCTION DETAILS:

Corrosion Protection - Ferrous metal parts are protected against corrosion by plating or painting.

Soldered Connections - All soldered connections are mechanically secured before soldering.

Printed Wiring Boards -Suitable for the solder time and temperature used by the manufacturer.

Product markings & information on an instruction sheet or the like;

	Description	Comment
x	Company name (as identified in Online directory) or File number	
x	Model designation-	
x	Factory ID, when more than one factory	
x	Date Code	
x	Environmental considerations	See product characteristics table- \$
x	Electrical Ratings	See electrical ratings table- \$
x	Input & Output Types	See product characteristics table- \$
*x	Class 2 outputs	See product characteristics table- 'Class 2' marked on the device.
x	Polarity of supply connections	Applies to [x]Input, [x] Output- \$
x	Push-in terminals	The installation instructions contain the following information: a) For releasing the wire from the terminal connection, b) The intended wire size(s), c) Whether the terminal is intended for both solid and stranded or just solid wire, d) The length to strip the insulation from conductors, and e) The terminal relationship to the internal circuitry.
x	Class P LED drivers	See product characteristics table- optional marking 'Class P' on LED driver. If marking is provided, then the LED driver is marked "For Connections Use Wire Rated for at Least 90°C (194°F)" or equivalent - # [x] Device marked "Use only within an enclosure" or equivalent - \$, #
x	Wired Control Circuits	See product characteristics table- 1. Identification of the terminals or lead wires for control circuits - \$ 2. Identification of the intended industry or proprietary protocols - \$ 3. Instruction sheet 4. [x] For Models with suffix "TZ or TXZ" only, "Notice: This control circuit is not isolated - see installation instructions" or equivalent - \$, # 5. [X] Device wired control circuit marked 'Class 2'
x	Temperature Value @ Tc	See product characteristics table- Tc point location marking on device. The Tref max values may be marked on the device in the following format: 90 °C- \$
x	Grounding	"CASE MUST BE GROUNDED" - Optional

x- Denotes applicable product markings

\$- For built-in products this information may be provided on the product, or on an instruction sheet.

#- For products with the UL Mark for Canada, this marking is also provided in French.

*LED Driver, Model PLS-A65W-18-55-TPZ-YYYYYYY - FIGS. 1-8

*LED Driver, Model PLS-A65W-18-55-TXZ-YYYYYYY - FIGS. 1-5, 9-11

General - The general design, shape and arrangement shall be as illustrated except where variations are specifically described. Also represents the entire PLS-AEEW-GG-HH-IJ-YYYYYYY except where specifically described.

No.	Item	CCN	Manufacturer (File Number)	Part/Model Number	Description / Technical Data	(F) IG (I) LL
1	Enclosure (where IJ = TPZ)	-	Various	Various	Sheet aluminum, 0.6 mm thick. Consists of Top cover and Base enclosure, secured together by snap fit. Provided with a 6.8 mm dia. opening on Top cover for Data Socket and may be closed off by Data Socket Cover. Provided a Tab touch to PWB for Grounding function. See ILL. (unit: mm) for detail dimensions.	I1
1.1	Alternate (where IJ = TX or TXZ)	-	-	-	Same as above except for ILL.	I2
2	Photojack Cover	QMFZ2	Various	Various	Optional when Photojack (J6) present. Silicone (SIR). Rated V-0, 150°C. Secured to Enclosure and cover Data socket opening by physical fit. See ILL. (unit: mm) for detailed dimension.	I3
3	Functional grounding lead	AVLV2, AVLV8	Various	Various	26 AWG, rated 300 V, 105 °C with green insulation. Soldered to PWB and other end press fitted between Enclosure parts.	F6 F8
4	Potting Compound thermosetting	QMFZ2	Various	Various	SIR silicone rubber. Rated V-0, 150°C. Applied between surface of PWB and Insulating Liner.	-
5	Insulating Liner	QMFZ2	JIANGSU YUXING FILM TECHNOLOGY CO LTD (E212271)	6027D	PET film, 0.1 mm thick minimum(away sharp edge), 105°C, two-parts construction. Folding edges at two ends secured by Tape. Provided as insulation between PWB assembly and metal enclosure. See ILL. (unit: mm) for detailed dimension.	I4
*6	Input Terminals (J1)	XCFR2/8	DEGSON TECHNOLOGY CO., LTD. (E228872)	DG250-3.5	Push-in type. 4 poles, void 1-pin. Rated 300 V, 8 A, 105°C, suitable for factory/field wiring of 16-22 AWG copper solid/stranded conductors. Maintained minimum 1.5 mm through air and 3 mm over surface spacing between terminals of opposite polarity, and 3.9mm between terminals and metal enclosure.	-
6.1	Alternate	XCFR2/8	DONGGUANSHI CHANGHE ELECTRONICS CO LTD (E256644)	CS200-00-350-04P-01Y-247	Same as above, except rated 300 V, 10A, 120 °C. Suitable for factory/field wiring of 16-24 AWG copper solid/stranded conductors, 7-8 strip length.	

No.	Item	CCN	Manufacturer (File Number)	Part/Model Number	Description / Technical Data	(F) IG (I) LL
7	Output/Dimmer Terminals (J2) (where IJ = TPZ)	XCFR2/ 8	Various	Various	Located in the Class 2 circuit. Push-in type. Four poles. Rated min. 100 V, 2 A, 105°C, acceptable for field wiring 16-24 AWG, Copper conductor.	-
7.1	Alternate (where IJ = TX or TXZ)	-	-	-	Same as above except provided six poles.	-
8	Printed Wiring Board	ZPMV2 ZPMV8	Various	Various	Rated min. V-1, 130°C. Suitable for support of live parts. Overall 226 mm by 27 mm (L x W), 1.6 mm thick. Models with suffix TPZ: See ILL.5 for trace layouts and ILL.6 for circuit diagram. Models with suffix TXZ or TZ: See ILL.7 for trace layouts and ILL.8 for circuit diagram. (Circuit diagram - Not for field representative used)	F4 F5 I5 I6 I7 I8
9	PWB Support	QMFZ2	Various	Various	Three provided. Silicone rubber. Min. rated V-1, 130°C. Two of them: Overall measures 1.7 mm wide by 26 mm long, 1 mm thick. One of them: Overall measures 5 mm by 5 mm, 1 mm thick. Adhered to Insulation Liner with double sided tape.	
10	Fuse (F1)	JDYX2 JDYX8	CONQUER ELECTRONICS CO LTD (E82636)	MST	Rated 300V, 6.3A. Connected in series with ungrounded supply.	-
10A	Alternate	JDYX JDYX7	Various	Various	Same as above.	-
11	Varistor (MV1, MV2, MV3, MV4, MV5)	VZCA2 VZCA8	Various	Various	SPD Type 5, minimum voltage rating 300 Vac, minimum temperature rating 105°C.	-
12	Bridge Rectifier (D1)	-	Various	Various	SMD type. Rated min. 1000 V, 1.5A.	-
13	Thermistor (RT1, RT6)	XGPU2	Various	Various	Rated 100 °C. RT1: Rated 10K ohm, NTC type. RT6: Rated 600 ohm, PTC type.	-
14	X Capacitor (C1)	FOWX2, FOWX8	Various	Various	Type X2, rated 300 V min., 85 °C min, 0.22 uF max. Located across the line.	-

No.	Item	CCN	Manufacturer (File Number)	Part/Model Number	Description / Technical Data	(F) IG (I) LL
*15	Y Capacitors (C5, C6, C27, C50A)	FOWX2, FOWX8	Various	Various	Class Y1 & Y2, rated 105°C min, max. 300V. C5, C6: rated 1500 pF max.. Located Primary to Ground. C27: rated 1000 pF max.. Bridging Primary to Secondary. C50A: rated 4700 pF max. Located Secondary to Ground.	-
15	Electrolytic Capacitors (C3, C11, C30, C17, C45, C160)	-	Various	Various	C3: Rated 63 V min., 82 uF max., 105 °C min. C11, C30: Rated 35 V min., 1200 uF max., 105 °C min. C17: Rated 50 V min., 22 uF max., 105 °C min. C45 (for TPZ series only): Rated 50 V min., 100 uF max., 105 °C min. C160: Rated 50 V min., 100 uF max., 105 °C min.	-
17	Optical Isolator (IC2, IC22)	FPQU2, FPQU8	Various	Various	Rated Isolation voltage 3.75 kV min., with minimum operating temperature min. 85 °C. IC2: Bridging Primary to secondary. IC22(for TPZ series only): Bridging Secondary to Control circuit.	-
18	Transistor (Q1, Q29, Q12)	-	Various	Various	SMD type. Q1: Rated min. 100 V, 1 A. Q16, Q29: Rated min. 160 V, 0.6 A. Q12: Rated min. 100 V, 8 A.	-
19	MOSFETS (Q13, Q17, Q18, Q47)	-	Various	Various	SMD type. Rated min. 60 V, 115 mA.	-
20	IC (IC1)	-	Various	SO8, BM PFC	SMD type. Consists of 8 pins.	-
21	IC (IC7)	-	Various	SOT23-6, BUCK DRIVER	SMD type. Consists of 6 pins.	-
22	IC (IC14)	-	Various	QFN20 CPU	SMD type. Consists of 21 pins.	-
23	IC (IC3)	-	Various	SO8 AP4310	SMD type. Consists of 8 pins.	-
24	Phonojack (J6)	-	-	-	Under Class 2 circuit. 2.5mm jack socket. 4 pins. Constructed of R/C (QMFZ2) material, rated HB min., 90°C min. Soldered to PWB. Provided with Shroud. See ILL. (unit: mm) for detailed dimension.	I9

No.	Item	CCN	Manufacturer (File Number)	Part/Model Number	Description / Technical Data	(F) IG (I) LL
25	Electronic Component List	-	-	-	See ILL. below for details:	-
					PLS-A20W-07-55-TPZ	I10
					PLS-A30W-10-55-TPZ	I11
					PLS-A50W-14-55-TPZ	I12
					PLS-A65W-18-55-TPZ	I13
					PLS-A20W-07-55-TZ	I14
					PLS-A30W-10-55-TZ	I15
					PLS-A50W-14-55-TZ	I16
					PLS-A65W-18-55-TZ	I17
					PLS-A20W-07-55-TXZ	I18
					PLS-A30W-10-55-TXZ	I19
					PLS-A50W-14-55-TXZ	I20
					PLS-A65W-18-55-TXZ	I21

Table 1. Component differences:

Model No. Component	Models with suffix TPZ	Models with suffix TXZ	Models with suffix TZ
IC10	/	ESOP8, Sync Buck Regulator	/
IC22	Isolation voltage 3.75kV min.	/	/
IC23	SOT23-6, DIM-PWM	/	/
E. Capacitor C45	100uF max., 50V min.	/	/
C38	1000p Max 300V min	/	/
MOSFETS (Q20)	Rated min 60V 115mA	/	/
TRANSISTOR (Q19)	Rated min 160V 600mA	/	/
MOSFETS Q21	/	Rated min 60V 115mA	/
TRANSISTOR (Q6)	/	Rated min 60V 600mA	Rated min 60V 600mA
L5	/	22uH, SMD	/

Winding devices - See below for details.

No.	Item	CCN	Manufacturer (File Number)	Part Number	Rating	(F) IG (I) LL
1	Line Filter (L1)	-	-	-	See table below for details.	-
1.1	Core	-	-	-	Ferrite.	-
1.2	Coils (N1, N2)	OBMW2	Various	Various	Enamel copper wire, 130°C min., windings separated from each other by bobbin.	-
1.3	Bobbin	QMFZ2	Various	Various	Phenolic, 0.71 mm thick min., rated V-0, 130°C.	-
2	Inductor (L4)	-	-	-	See table below for details.	-
2.1	Core	-	-	-	Ferrite.	-
2.2	Coil (N1)	OBMW2	Various	Various	Enamel copper wire, 130 °C min., Fully covered with Tape.	-
2.3	Tape	OANZ2	Various	Various	PET tape, 0.025 mm thick per layer, 2 layers provided for outer wrap.	-

Model No.	Core Dimension (mm)	Coil: No. of turns x Diameter (mm) x no. of Conductors	Rating
	Line Filter (L1) (L x W x H)		
Models PLS-A65W series	18.5 mm x 8.3 mm x 14.8 mm	N1: 110T x 0.3 x 1P N2: 110T x 0.3 x 1P	33mH
Models PLS-A50W (TXZ/TZ series)	18.5 mm x 8.3 mm x 14.8 mm	N1: 160T x 0.26 x 1P N2: 160T x 0.26 x 1P	68mH
Models PLS-A50W (TPZ series)	18.5 mm x 8.3 mm x 14.8 mm	N1: 130T x 0.27 x 1P N2: 130T x 0.27 x 1P	47mH
Models PLS-A30W series; Models PLS-A20W series	18.5 mm x 8.3 mm x 14.8 mm	N1: 170T x 0.25 x 1P N2: 170T x 0.25 x 1P	85mH

Model No.	Core Dimension (mm)	Coil: No. of turns x Diameter (mm) x no. of Conductors	Rating
	Line Filter (L4) (Outer Dia. X Inner Dia x Thickness)		
Models PLS-A65W series; Models PLS-A50W series	11.2mm OD x 6.35mmID X 3.96T	N1: 48T x 0.5 x 1P	122uH
Models PLS-A30W series; Models PLS-A20W series	11.2mm OD x 6.35mmID X 3.96T	N1: 144T x 0.3 x 1P	1.1mH

No.	Item	CCN	Manufacturer (File Number)	Part Number	Rating	(F) IG (I) LL
3	Transformer (T1)	-	-	-	Refer to table below for details.	-
3.0	Electrical Insulation System	OBJY2	ENERGY RECOVERY PRODUCTS (ZHUHAI) CO LTD (E472467)	ERP-130	Class 130(B). Table IX	-
-	Alternate #1	OBJY2	DONGGUAN ZHONGKAI ELECTRONIC CO LTD (E349803)	Tai Hu 130-TM	Same as above.	-
-	Alternate #2	OBJY2	YUDU COUNTY ASET ELECTRONIC TECHNOLOGY CO LTD (E354764)	130-TM	Same as above.	-
3.1	Core	-	-	-	Ferrite. Fully wrapped by Tape to provide spacing between windings to Core.	-
3.2	Bobbin	QMFZ2	SUMITOMO BAKELITE CO LTD (E41429)	Sumikon PM-9820 or PM-9630	Phenolic, 0.71 mm thick minimum, rated V-0, 150 °C. Three-flange type. Min. 0.8 mm bent-up tape on bobbin provided spacing between primary and secondary windings.	-
3.3	Primary and Secondary Winding	OBMW2	Various	Various	ANSI type MW28/35/36/37/38/73/74/75/79/80/82/83/85. Rated min. 130°C.	-
3.4	Tape	OANZ2	3M COMPANY ELECTRICAL MARKETS DIV(EMD) (E1738 5)	1350T-1 (b) or 1350F-1 (b)	PET tape, 0.025 mm thick per layer, 3 layers provided.	-
3.5	Primary Crossover Lead Insulation	OANZ2	3M COMPANY ELECTRICAL MARKETS DIV(EMD) (E1738 5)	1350T-1 (b) or 1350F-1 (b)	PET tape, 0.025 mm thick per layer, min. 2 layer tape provided.	-
3.6	Varnish	OBOR2	SUZHOU TAIHU ELECTRIC ADVANCED MATERIAL CO LTD (E228349)	T-4260(a)	Rated 130 °C min. Suitable for ANSI type MW28/80/76.	-

Winding devices (Cont'd)

Model No.	Core Dimension (mm)	Coil: No. of turns x Diameter (mm) x no. of Conductors	Rating	ILL.
	Transformer (T1) (L x W x H)			
Models PLS-A20W with suffix TPZ	48mm x 26.5mm x 20mm	N1: 63T x 0.25 x 1P N2: 24T x 0.1 x 20P N3: 63T x 0.25 x 1P N4: 16T x 0.15 x 1P N5: 16T x 0.15 x 1P N6: 12T x 0.15 x 1P	720uH	22
Models PLS-A30W with suffix TPZ	48mm x 26.5mm x 20mm	N1: 63T x 0.25 x 1P N2: 24T x 0.1 x 20P N3: 63T x 0.25 x 1P N4: 16T x 0.15 x 1P N5: 16T x 0.15 x 1P N6: 12T x 0.15 x 1P	620uH	23
Models PLS-A50W with suffix TPZ	48mm x 26.5mm x 20mm	N1: 63T x 0.25 x 1P N2: 24T x 0.1 x 20P N3: 63T x 0.25 x 1P N4: 24T x 0.1 x 20P N5: 16T x 0.15 x 1P N6: 16T x 0.15 x 1P N7: 12T x 0.15 x 1P	420uH	24
Models PLS-A65W with suffix TPZ	48mm x 26.5mm x 20mm	N1: 63T x 0.25 x 1P N2: 24T x 0.1 x 25P N3: 63T x 0.25 x 1P N4: 24T x 0.1 x 25P N5: 16T x 0.15 x 1P N6: 16T x 0.15 x 1P N7: 12T x 0.15 x 1P	320uH	25
Models PLS-A20W with suffix TXZ or TZ	48mm x 26.5mm x 20mm	N1: 63T x 0.25 x 1P N2: 24T x 0.1 x 20P N3: 63T x 0.25 x 1P N4: 16T x 0.15 x 1P N5: 12T x 0.15 x 1P	720uH	26
Models PLS-A30W with suffix TXZ or TZ	48mm x 26.5mm x 20mm	N1: 63T x 0.25 x 1P N2: 24T x 0.1 x 20P N3: 63T x 0.25 x 1P N4: 16T x 0.15 x 1P N5: 12T x 0.15 x 1P	620uH	27
Models PLS-A50W with suffix TXZ or TZ	48mm x 26.5mm x 20mm	N1: 63T x 0.25 x 1P N2: 24T x 0.1 x 20P N3: 63T x 0.25 x 1P N4: 24T x 0.1 x 20P N5: 16T x 0.15 x 1P N6: 12T x 0.15 x 1P	420uH	28
Models PLS-A65W with suffix TXZ or TZ	48mm x 26.5mm x 20mm	N1: 63T x 0.25 x 1P N2: 24T x 0.1 x 25P N3: 63T x 0.25 x 1P N4: 24T x 0.1 x 25P N5: 16T x 0.15 x 1P N6: 12T x 0.15 x 1P	320uH	29

LED Driver, Model PLS-A85W-23-55-TZ-YYYYYYY - FIGS. 12 to 20
(Also represent LED Driver, Model PLS-A85W-23-55-TXZ-YYYYYYY)

General - The general design, shape and arrangement shall be as illustrated except where variations are specifically described.

No.	Item	CCN	Manufacturer (File Number)	Part/Model Number	Description / Technical Data	(F) IG (I) LL
1	Enclosure	-	Various	Various	Sheet aluminum, 0.6 mm thick. Consists of Top cover and Base enclosure, secured together by snap fit. Provided with a 7 mm dia. opening on Top cover for Data Socket and may be closed off by Data Socket Cover. Provided a Tab touch to PWB for Grounding function. See ILL. (unit: mm) for detail dimensions.	I30
2	Photojack Cover	QMFZ2	Various	Various	Optional when Photojack (J6) present. Silicone (SIR). Rated V-0, 150°C. Secured to Enclosure and cover Data socket opening by physical fit. See ILL. (unit: mm) for detailed dimension.	I3
3	Functional grounding lead	AVLV2, AVLV8	Various	Various	26 AWG, rated 300 V, 105 °C with green insulation. Soldered to PWB and other end press fitted between Enclosure parts.	F16
4	Potting Compound thermosetting	-	-	-	Not provided.	
5	Insulating Liner	QMFZ2	JIANGSU YUXING FILM TECHNOLOGY CO LTD (E212271)	6027D	PET film, 0.18 mm thick minimum(away sharp edge), 105°C, two-parts construction. Folding edges at two ends secured by Tape. Provided as insulation between PWB assembly and metal enclosure. See ILL. (unit: mm) for detailed dimension.	I31
6	Input Terminals (J1)	XCFR2/8	DEGSON TECHNOLOGY CO., LTD. (E228872)	DG250-3.5	Push-in type. 4 poles, void 1-pin. Rated 300 V, 8 A, 105°C, suitable for factory/field wiring of 16-22 AWG copper solid/stranded conductors. Maintained minimum 1.5 mm through air and 3 mm over surface spacing between terminals of opposite polarity, and 3.9mm between terminals and metal enclosure.	-
6.1	Alternate	XCFR2/8	DONGGUANSHI CHANGHE ELECTRONICS CO LTD (E256644)	CS200-00-350-04P-01Y-247	Same as above, except rated 300 V, 10A, 120 °C. Suitable for factory/field wiring of 16-24 AWG copper solid/stranded conductors, 7-8 strip length.	

No.	Item	CCN	Manufacturer (File Number)	Part/Model Number	Description / Technical Data	(F) IG (I) LL
7	Output/Dimmer Terminals (J2)	XCFR2/ 8	Various	Various	Located in the Class 2 circuit. Push-in type. Six poles. Rated min. 100 V, 2 A, 105°C, acceptable for field wiring 16-24 AWG, Copper conductor.	-
8	Printed Wiring Board	ZPMV2 ZPMV8	Various	Various	Rated min. V-1, 130°C. Suitable for support of live parts. Overall 388.5 mm by 27 mm (L x W), 1.6 mm thick. See ILL.32 for trace layouts and ILL.33 for circuit diagram. (Circuit diagram - Not for field representative used)	F17 F18 I32 I33
9	PWB Support	QMFZ2	Various	Various	Two provided. Silicone rubber. Min. rated V-1, 130°C. For heat conduction. One of them: Overall measures 26 mm wide by 46 mm long, 1 mm thick. On the Top of T1. One of them: Overall measures 17mmOD, 1 mm thick. On the Top of D1.	
10	Heatsink	-	-	-	Two provided. Aluminum. Overall 19.6mm wide by 19mm high by 6.1mm thick. Heatsink 1: secured to Q2. Heatsink 1: secured to Q48.	
11	Fuse (F1)	JDYX2 JDYX8	CONQUER ELECTRONICS CO LTD (E82636)	MST	Rated 300V, 6.3A. Connected in series with ungrounded supply.	-
11A	Alternate	JDYX JDYX7	Various	Various	Same as above.	-
12	Varistor (MV1, MV2, MV3A, MV4, MV5)	VZCA2 VZCA8	Various	Various	SPD Type 5, minimum voltage rating 300 Vac, minimum temperature rating 100°C.	-
13	Gas Discharge Tube (GDT1)	VZCA2 VZCA8	Various	Various	SPD Type 5, minimum voltage rating 300 Vac, minimum temperature rating 105°C.	-
14	Bridge Rectifier (D1)	-	Various	Various	SMD type. Rated min. 1000 V, 4A.	-
15	Thermistor (RT1, RT6)	XGPU2	Various	Various	RT1: Rated 10K ohm, NTC type, 125 °C. RT6: Rated 600 ohm, CPTC type, 85 °C.	-

No.	Item	CCN	Manufacturer (File Number)	Part/Model Number	Description / Technical Data	(F) IG (I) LL
16	X Capacitor (C1,C35)	FOWX2, FOWX8	Various	Various	Type X2, rated 310 V min., 110 °C min, 0.15 uF max. Located across the line.	-
17	Y Capacitors (C5,C6,C27, C50A)	FOWX2, FOWX8	Various	Various	Rated 105°C. C5, C6: rated 1000 pF max. 400V. Class Y1 or X1. Located Primary to Ground. C27: rated 2200 pF max. 400V. Class Y1. Bridging Primary to Secondary. C50A: rated 4700 pF max. 400V. Class Y1. Located Secondary to Ground.	-
18	Electrolytic Capacitors (C3, C11, C30, C160, C187)	-	Various	Various	C3: Rated 63 V min., 82 uF max., 105 °C min. C11, C30: Rated 80 V min., 680 uF max., 105 °C min. C160: Rated 50 V min., 100 uF max., 105 °C min. C187: Rated 50 V min., 22 uF max., 105 °C min.	-
19	Optical Isolator (IC2,IC6)	FPQU2, FPQU8	Various	Various	Rated Isolation voltage 3.75 kV min., with minimum operating temperature min. 110 °C. Bridging Primary to secondary.	-
20	Transistor (Q1, Q15)	-	Various	Various	SMD type. Q1: Rated min. 100 V, 1 A. Q15: Rated min. 30 V, 5.8 A.	-
21	MOSFETS (Q2, Q5, Q13, Q17, Q32, Q38)	-	Various	Various	SMD type. Q2: Rated min. 650 V, 20 A. Q5: Rated min. 600 V, 1 A. Q13: Rated min. 60 V, 115mA. Q17: Rated min. 60 V, 115mA. Q32: Rated min. 60 V, 340mA. Q38: Rated min. 60 V, 115mA.	-
22	IC (IC1)	-	Various	SO8, BM PFC	SMD type. Consists of 8 pins.	-
23	IC (IC4)	-	Various	SO8, LM2903	SMD type.	-
24	IC (IC10)	-	Various	ESOP8 TPP00031	SMD type. Consists of 9 pins.	-
25	IC (IC14)	-	Various	UFQFPN20 MM32F0020B1N	SMD type. Consists of 21 pins.	-
26	IC (IC27)	-	Various	SO8, MP6902	SMD type. Consists of 8 pins.	-

No.	Item	CCN	Manufacturer (File Number)	Part/Model Number	Description / Technical Data	(F) IG (I) LL
28	Phonojack (J6)	-	-	-	Under Class 2 circuit. 2.5mm jack socket. 4 pins. Constructed of R/C (QMFZ2) material, rated HB min., 90°C min. Soldered to PWB. Provided with Shroud. See ILL. (unit: mm) for detailed dimension.	I9
29	Electronic Component List	-	-	-	See ILL. below for details:	-
					PLS-A85W-18-55-TZ	I34
					PLS-A85W-18-55-TXZ	I34

Table 1. Component differences:

Model No.		
Component	PLS-A85W-18-55-TZ	PLS-A85W-18-55-TXZ
L5	Not provided	22uH, SMD

Winding devices - See below for details.

No.	Item	CCN	Manufacturer (File Number)	Part Number	Rating	(F) IG (I) LL
1	Line Filter (L1, L6)	-	-	-	See table below for details.	-
1.1	Core	-	-	-	Ferrite.	-
1.2	Coils (N1, N2)	OBMW2	Various	Various	Enamel copper wire, 130°C min., windings separated from each other by bobbin.	-
1.3	Bobbin	QMFZ2	Various	Various	Phenolic, 0.71 mm thick min., rated V-0, 130°C.	-
2	Inductor (L5)	-	-	-	See table below for details.	-
2.1	Core	-	-	-	Ferrite.	-
2.2	Coil (N1)	OBMW2	Various	Various	Enamel copper wire, 130 °C min.	-
3	Ring Inductor (L4)	-	-	-	See table below for details.	-
3.1	Core	-	-	-	Ferrite.	-
3.2	Coil (N1)	OBMW2	Various	Various	Enamel copper wire, 130 °C min.,	-
3.3	Bobbin	QMFZ2	Various	Various	Phenolic, 0.71 mm thick min., rated V-0, 130°C.	-
4	Ring Inductor (L7)	-	-	-	See table below for details.	-
4.1	Core	-	-	-	Ferrite.	-
4.2	Coil (N1,N2)	OBMW2	Various	Various	N2:Enamel copper wire, 130 °C min., N1: Insulated Winding Wire, rated 130°C min.	-
4.	Bobbin	QMFZ2	Various	Various	Phenolic, 0.71 mm thick min., rated V-0, 130°C.	-

Model No.	Core Dimension (mm)	Coil: No. of turns x Diameter (mm) x no. of Conductors	Rating
	Line Filter (L1, L6) (L x W x H)		
PLS-A85W-18-55-TXZ PLS-A85W-18-55-TZ	18.4 mm x 14.8 mm x 8 mm	N1: 60T x 0.4 x 1P N2: 60T x 0.4 x 1P	10mH

Model No.	Core Dimension (mm)	Coil: No. of turns x Diameter (mm) x no. of Conductors	Rating
	Line Filter (L4) (Outer Dia. X Inner Dia x Thickness)		
PLS-A85W-18-55-TXZ PLS-A85W-18-55-TZ	13.46mm OD x 6.99mm ID X 5.51T	N1: 60T x 0.6 x 1P	201.6uH

Model No.	Core Dimension (mm)	Coil: No. of turns x Diameter (mm) x no. of Conductors	Rating
	Line Filter (L5) (Outer Dia. X height)		
PLS-A85W-18-55-TXZ	4mm x 4mm x 2mmH	N1: 19T x 0.13 x 1P	22uH

Model No.	Core Dimension (mm)	Coil: No. of turns x Diameter (mm) x no. of Conductors	Rating
	Line Filter (L7) (Outer Dia. X Inner Dia x Thickness)		
PLS-A85W-18-55-TXZ PLS-A85W-18-55-TZ	8mm OD x 4mm ID X 4T	N1: 5T x 0.6 x 1P N2 : 5T x 0.6 x 1P	6.3uH

No.	Item	CCN	Manufacturer (File Number)	Part Number	Rating	(F) IG (I) LL
4	Transformer (T1)	-	-	-	Refer to table below for details.	-
4.0	Electrical Insulation System	OBJY2	ENERGY RECOVERY PRODUCTS (ZHUHAI) CO LTD (E472467)	ERP-130	Class 130(B). Table IX	-
-	Alternate #1	OBJY2	DONGGUAN ZHONGKAI ELECTRONIC CO LTD (E349803)	Tai Hu 130-TM	Same as above.	-
-	Alternate #2	OBJY2	YUDU COUNTY ASET ELECTRONIC TECHNOLOGY CO LTD (E354764)	130-TM	Same as above.	-
4.1	Core	-	-	-	Ferrite. Fully wrapped by Tape to provide spacing between windings to Core.	F20
4.2	Bobbin	QMFZ2	SUMITOMO BAKELITE CO LTD (E41429)	Sumikon PM-9820 or PM-9630	Phenolic, 0.71 mm thick minimum, rated V-0, 150 °C. Three-flange type. Min. 0.8 mm bent-up tape on bobbin provided spacing between primary and secondary windings.	-
4.3	Primary and Secondary Winding	OBMW2	Various	Various	ANSI type MW28/35/36/37/38/73/74/75/79/80/82/83/85. Rated min. 130°C.	-
4.4	Tape	OANZ2	3M COMPANY ELECTRICAL MARKETS DIV (EMD) (E1738 5)	1350T-1 (b) or 1350F-1 (b)	PET tape, 0.025 mm thick per layer, 3 layers provided.	-
4.5	Primary Crossover Lead Insulation	OANZ2	3M COMPANY ELECTRICAL MARKETS DIV (EMD) (E1738 5)	1350T-1 (b) or 1350F-1 (b)	PET tape, 0.025 mm thick per layer, min. 2 layer tape provided.	-
4.6	Varnish	OBOR2	SUZHOU TAIHU ELECTRIC ADVANCED MATERIAL CO LTD (E228349)	T-4260 (a)	Rated 130 °C min. Suitable for ANSI type MW28/80/76.	-

Winding devices (Cont'd)

Model No.	Core Dimension (mm)	Coil: No. of turns x Diameter (mm) x no. of Conductors	Rating	ILL.
	Transformer (T1) (L x W x H)			
PLS-A85W-18-55-TZ PLS-A85W-18-55-TXZ	25.1mm x 30.1mm x 18.5mm	N1: 27T x 0.3 x 1P N2: 12T x 0.1 x 25P N3: 27T x 0.3 x 1P N4: 12T x 0.1 x 25P N5: 27T x 0.3 x 1P N6: 12T x 0.1 x 25P N7: 27T x 0.3 x 1P N8: 27T x 0.3 x 1P N9: 8T x 0.2 x 1P N10: 6T x 0.2 x 1P N11: 7T x 0.2 x 1P	210uH	35