



SPECIFICATION FOR APPROVAL



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KED-18W SERIES

AC-DC POWER SUPPLY

AC-DC POWER SUPPLY

KED-18W SERIESManufacturer Part No.: KS251466



Customer NameKTEC

Customer Part NO.

Project Modify List

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1. INPUT REQUIREMENTS

1.1 Highlight & Features

- Wide input range (85 ~ 305 Vac)
- Wide operating temperature range (-40 to +85°C)
- Class B emissions
- Meet to 62368, 61558, and 60335 safety standards
- Designed to meet 60601 medical safety standard (2xMOPP)
- Over voltage, over current, short circuit protections
- Input over voltage category III for fixed installations



MOEDL	Output voltage	Output current	Output power	Ripple and noise	Efficiency
	(Vdc)	max (A)	Max (W)	max (mVp-p)	Typ (%)
KED-18W-033EP	3.3	4.0	13.2	120	82
KED-18W-050EP	5	3.6	18.0	120	85
KED-18W-090EP	9	2.0	18.0	120	84
KED-18W-120EP	12	1.5	18.0	120	85
KED-18W-150EP	15	1.2	18.0	120	85
KED-18W-240EP	24	0.75	18.0	120	86

- Notes:
1. At full load, nominal input, 20 MHz bandwidth oscilloscope, with output capacitors outlined in Figure/Table 1 below.
 2. At 230 Vac input.
 3. All specifications are measured at Ta=25°C, humidity <75%, nominal input voltage, and rated output load unless otherwise specified.

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2. INPUT

Parameter	Conditions/description	Min	Typ	Max	Units
Voltage	AC input	85		305	Vac
	DC input	100		430	Vdc
	Note: 1.AC input (Line and Neutral can be swapped when using an AC input) 2. DC input(The polarity cannot be reversed when using a DC input)				
Frequency		47		63	Hz
Current	at 115 Vac			0.45	A
	at 230 Vac			0.30	A
Inrush current	at 230 Vac		60		A
Leakage current	at 277 Vac/50 Hz			0.1	mA
No load power consumption	3.3, 5, 9, 12, 15,20V Vdc output models			0.1	W

3. OUTPUT

Parameter	Conditions/description	Min	Typ	Max	Units
Capacitive load	3.3 Vdc output models			6,600	μ F
	5 Vdc output models			5,000	
	9 Vdc output models			3,000	
	12 Vdc output models			2,000	
	15 Vdc output models			1,500	
	24 Vdc output models			680	
Output voltage accuracy			± 2		%
Line regulation	at rated load		± 0.5		%
Load regulation	10% ~ 100% load		± 1.0		%
Hold-up time	at 115 Vac		10		ms
	at 230 Vac		22		ms
Switching frequency			65		kHz

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4. PROTECTIONS

Parameter	Conditions/description	Min	Typ	Max	Units
Over voltage protection	3.3 & 5 Vdc output models			7.5	V
	9 Vdc output model			15	
	12 & 15 Vdc output models			20	
	24 Vdc output model			30	
Over current protection	auto recovery	110			%
Short circuit protection	continuous, auto recovery, hiccup				

5. SAFETY & COMPLIANCE

Parameter	Conditions/description	Min	Typ	Max	Units
Over voltage protection	3.3 & 5 Vdc output models			7.5	V
	9 Vdc output model			15	
	12 & 15 Vdc output models			20	
	24 Vdc output model			30	
Over current protection	auto recovery	110			%
Short circuit protection	continuous, auto recovery, hiccup				

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6. SAFETY & COMPLIANCE

Parameter	Conditions/description	Min	Typ	Max	Units
Isolation voltage	input to output, 1 min, <5mA	4200			Vac
Safety approvals	certified to 62368: IEC, EN, UL/cUL designed to meet 61558: IEC, EN designed to meet 60335: IEC, EN designed to meet 60601: IEC, EN, UL/cUL				
Safety class	class II				
EMI/EMC	CISPR32/EN 55032 CLASS B CISPR11/EN 55011 CLASS B EN 55014-1				
ESD	IEC/EN 61000-4-2 Contact ± 8 KV perf. Criteria B IEC/EN 55014-2 perf. Criteria B				
Radiated immunity	IEC/EN 61000-4-3 10V/m perf. Criteria A IEC/EN 55014-2 perf. Criteria A				
EFT/burst	IEC/EN 61000-4-4 ± 2 KV perf. Criteria B IEC/EN 61000-4-4 ± 4 KV (See Fig.2 for recommended circuit) perf. Criteria B IEC/EN 55014-2 perf. Criteria B				
Surge	IEC/EN 61000-4-5 line to line ± 1 KV perf. Criteria B IEC/EN 61000-4-5 line to line ± 2 KV (See Fig.2 for recommended circuit) perf. Criteria B IEC/EN 55014-2 perf. Criteria B				
Conducted immunity	IEC/EN 61000-4-6 10Vr.m.s perf. Criteria A IEC/EN 55014-2 perf. Criteria A				
Voltage dips and interruptions	IEC/EN 61000-4-11 0%, 70% perf. Criteria B IEC/EN 55014-2 perf. Criteria B				
MTBF	MIL-HDBK-217F at 25°C	3200,000			hours
RoHS	yes				

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7. ENVIROMENTAL

Parameter	Conditions/description	Min	Typ	Max	Units
Operating temperature	(see derating curve)	-40		85	°C
Storage temperature		-40		85	°C
Storage humidity		0		95	%

8. SOLDERABILITY

Parameter	Conditions/description	Min	Typ	Max	Units
Wave soldering	5~10 seconds max	255	260	265	°C
Hand soldering	3~5 seconds max	350	360	370	°C

9. MECHANICAL

Parameter	Conditions/description	Min	Typ	Max	Units
Dimensions	DIP: 47.60 x 26.80 x 23.50				mm
Weight	DIP				g
	chassis mount				
	DIN-rail				
Case material	lack plastic, flame-retardant and heat-resistant (UL94V-0)				

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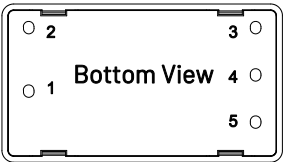
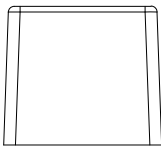
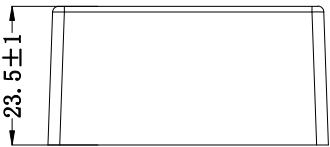
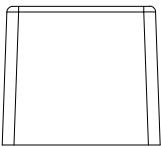
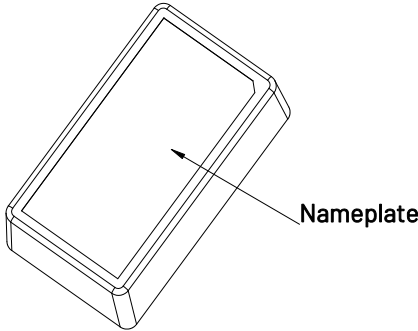
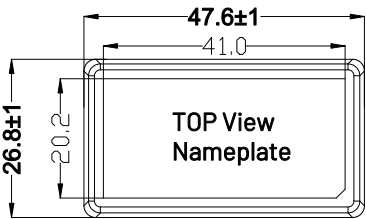
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10. MECHANICAL DRAWING

PIN CONNECTIONS	
Pin	Function
1	AC (N)
2	AC (L)
3	-V o
4	+V o
5	no pin



NOTE:

- 1. Case cover & chassis material PC BLACK (NO KTEC)
- 2. AC PIN MATERIAL: BRASS (NI PLATED)
- 3. PAHS 6P NP REACH ROHS
- 4. Satin Finish
- 5. Top mold: MSC025014 Bottom mold: MSC025015

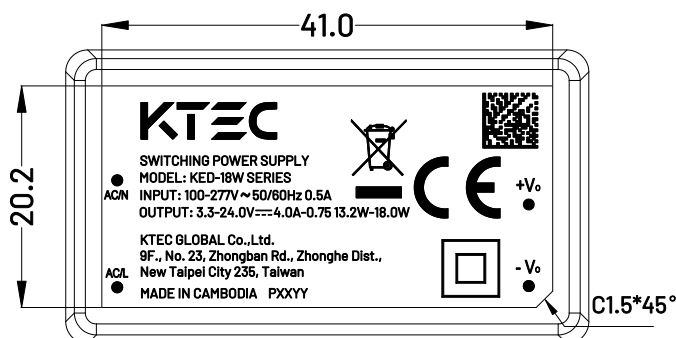
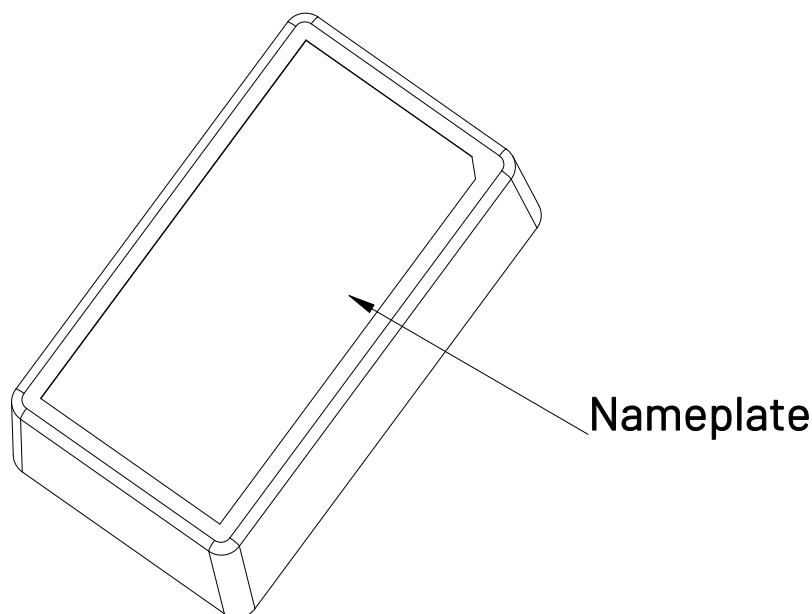
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11. NAME PLATE



Note: Laser

PXXYY (P=PAHS, 6P, NP XX=Week, YY=Year), use the actual production date.

SN (Data Matrix Code size: 5*5mm):

First code G(Ktec) + Production part number (Product code) + Ten yards of flow code SSSSSSSSSS (decimal) Total 19 codes

Example : GKS2514660000000001, GKS2514660000000002...GKS2514669999999999.

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12. MAIN FUNCTION INTRODUCTION:

12.1 APPLICATION DESIGN

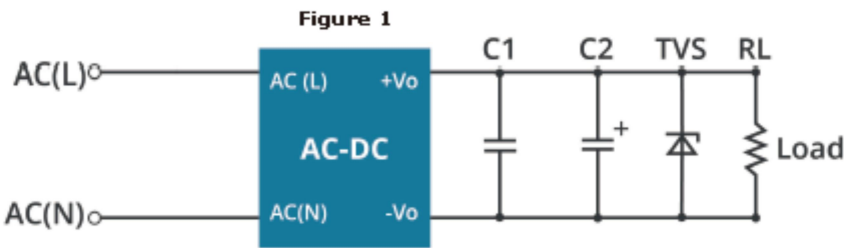


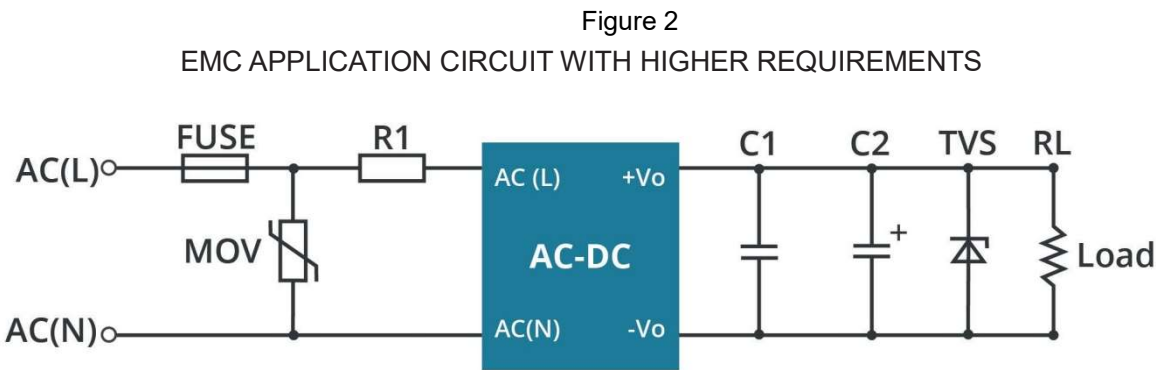
Table1

Part No.	C1(μF)	C2(μF)	TVS
KED-18W-033EP	1μF/50V	220μF/16V	SMBJ7.0A
KED-18W-050EP		220μF/16V	SMBJ7.0A
KED-18W-090EP		100μF/25V	SMBJ12A
KED-18W-120EP		100μF/25V	SMBJ20A
KED-18W-150EP		100μF/25V	SMBJ20A
KED-18W-240EP		100uF/35V	SMBJ30A

Note: 2A / 300V, slow-blow fuse integrated into unit.

Output Filtering Components:
An electrolytic capacitor with high frequency operation, low ESR, and at least 20% margin on rated output voltage is recommended for C2. C1 should be a ceramic capacitor and the TVS will help protect downstream electronics in the unlikely event of converter failure.

12.2 EMC RECOMMENDED CIRCUIT



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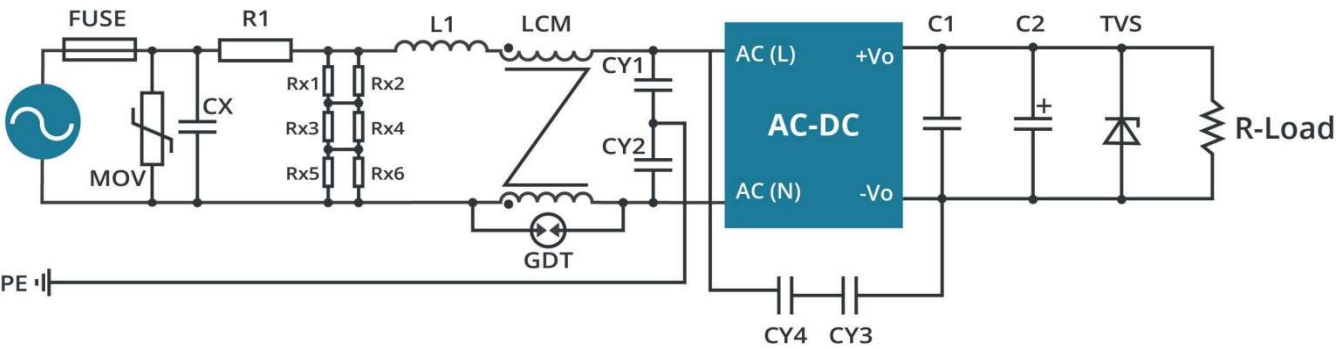
Table 2

Components	Recommended Value
FUSE	3.15A/300V, slow-blow, required
MOV	S14K350
R1	6.8Ω/3W

12.3 EMC CIRCUIT (CONTINUED)

Figure 3

RECCOMENDED CIRCUIT FOR CLASS I EQUIPMENT



Recommended when the output terminal of the product needs to be connected to PE or connected to PE through a Y capacitor

Table 3

Components	Recommended Value
FUSE	3.15A/300V, slow-blow, required
MOV	S14K350
CX	334K/305Vac
R1	12Ω/5W (wire-wound resistor, required)
L1	1.2mH/0.5A
CY1/CY2	2.2nF/400Vac
CY3/CY4	1nF/400Vac
GDT	300V/1KA
LCM	20mH

Note: Rx1/Rx2/Rx3/Rx4/Rx5/Rx6 is the bleeder resistance of CX, and the recommended resistance value is 1.5MΩ/150Vdc.

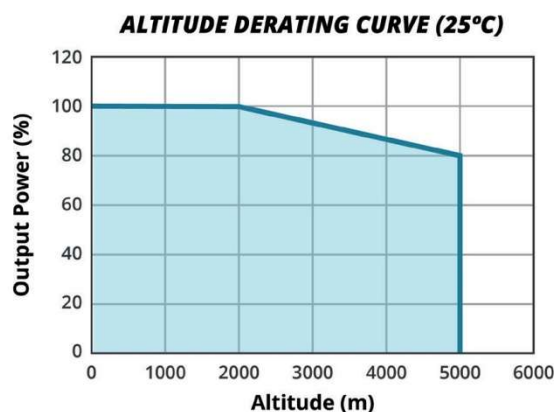
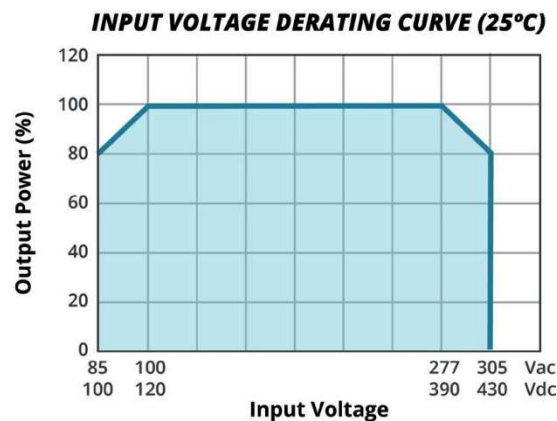
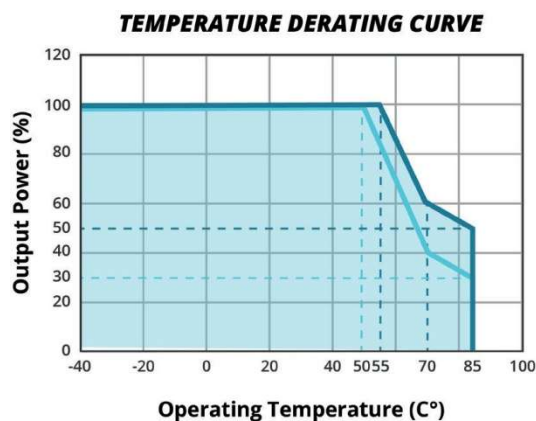
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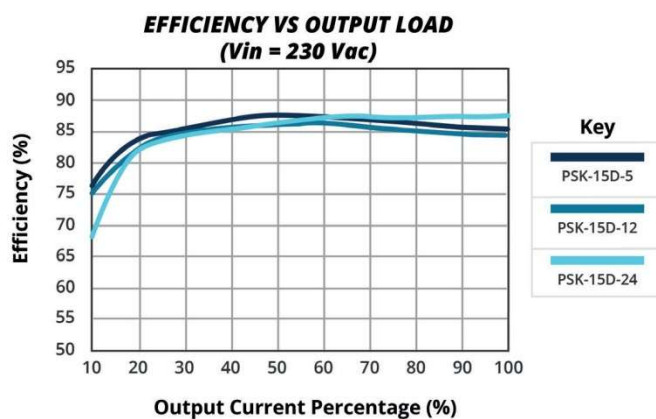
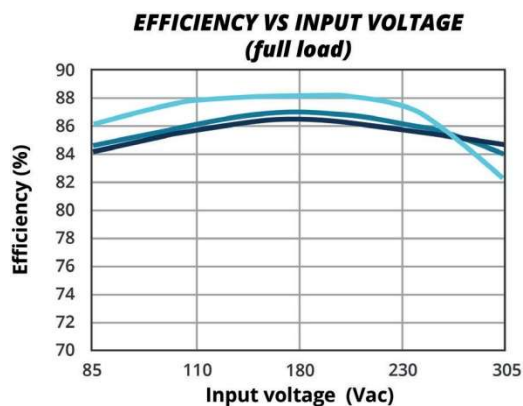
12.4 DERATING CURVES



Note: 1. With an AC input between 85~100V/277~305Vac and a DC input between 100~120V/390~430Vdc, the output power must be derated as per temperature derating curves.

2. This product is suitable for applications using natural air cooling.

12.5 EFFICIENCY CURVES



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13. PACKING (UNIT: MM)

