MES1206

DC/DC Converter

General Description

MES1206 is a DC/DC converter which can be used to supply DC output from a commercial power supply (85 to 265 VAC). Using these module enable simple, easy drive of microcomputers, LEDs, and other electronic components without using a transformer.

It also allows set PCBs to be kept compact and lightweight, with extremely few attachments. It can accommodate the 100VAC~200VAC power supplies used as household power supplies.



Application

- Small multi-purpose power supply
- Stand-by power supply aimed at low power consumption when loaded light
- Insulated-type DC-DC converted

Features

- Wide Input Range : FREEVOLT (AC 85V ~ 265V)
- A switching power supply can be made easily by adding simply external circuit
- Permits reduction of power consumption at low loads(when in stand-by)
- Able to deal with inputs of worldwide areas
- Ultra-compact size attained by application of high-density mounting technique
- Application of the unique molding technique features

  Compliance with various safety regulations from the compact size

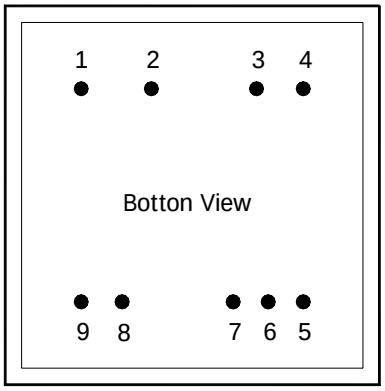
  Humming is prevented when intermittent oscillation
- Over Temperature Protection
- Output Short Circuit Protection
- Over Load Protection

Absolute Maximum Ratings (Ta = 25°C)

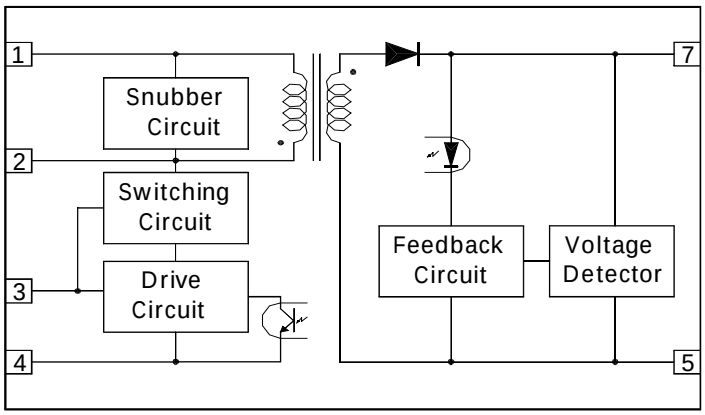
Characteristics	Symbol	Rating	Unit
Input Voltage	V_{AC}	85 ~ 265	V
Output Voltage	V_{OUT}	12	V
Maximum Output Current	I_{OMAX}	600	mA
Peak Output Current	I_{OPEAK}	1	Apk
ESD Endurance	V_{SURGE}	2	kV
Maximum Surface Temperature	T_{CMAX}	110	°C
Operating Temperature Range	T_{OPR}	-25 ~ +85	°C
Storage Temperature Range	T_{STG}	-25 ~ +105	°C

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Pin Assignment



Block Diagram



Pin Descriptions

Pin Name	Pin No.	I/O	Description
+DC IN	1	I	Voltage Input Terminal, 100~375VDC
DRAIN	2	O	Drain Output Terminal
VCC	3	I	Positive supply voltage for Switching circuits
- DC IN	4	I	Voltage Input Terminal, 0VDC
GND	5	O	Voltage Output Terminal, 0V
NC	6		No Connection
+DC OUT	7	O	Voltage Output Terminal, 12V
NC	8		No Connection
NC	9		No Connection

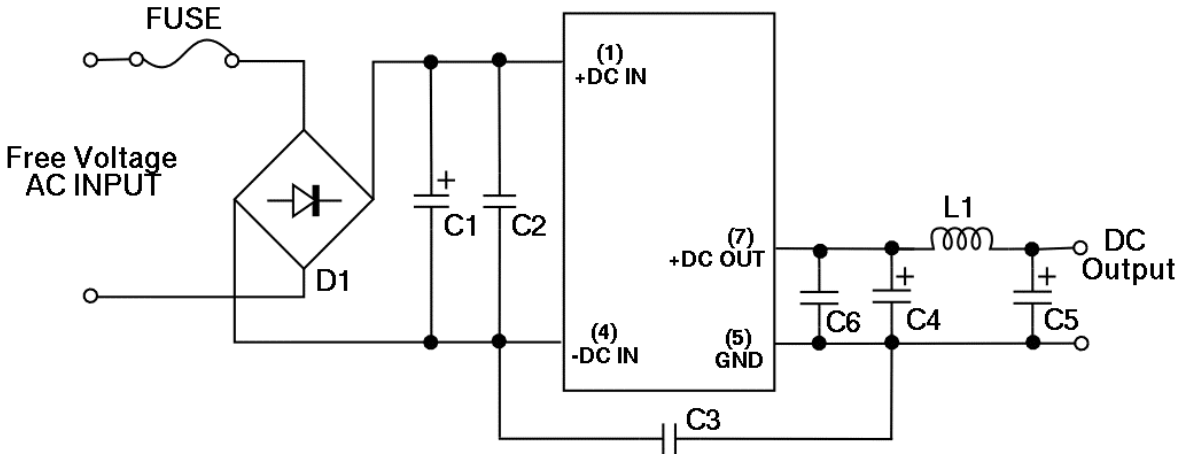
(Note1) Refer to the application circuit over pin connection

Electrical Characteristics

Characteristics	**Symbol**	**Condition**	**Min.**	**Typ.**	**Max.**	**Unit**
Input Voltage Range	V_{IN}		100	311	375	V
Output Voltage	V_O	Vi=311V, Io=200mA	11.16	12.00	12.84	V
Output Current	I_O	Vi=311V	-	-	600	mA
Line Regulation	V_R	Vi=100~375V,Io=200mA	-0.20	0.05	0.20	V
Load Regulation	V_L	Vi=311V,Io=0~600mA	-0.20	0.05	0.20	V
Output Ripple Voltage	V_P	Vi=311V, Io=200mA	-	0.05	0.10	Vp-p
Power Conversion Efficiency	η	Vi=311V, Io=600mA	62	78	-	%

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Application Circuit

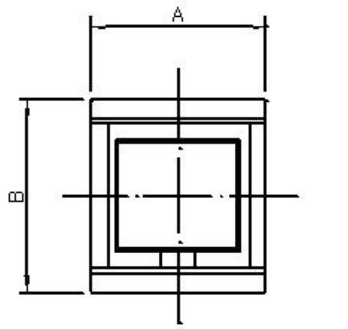


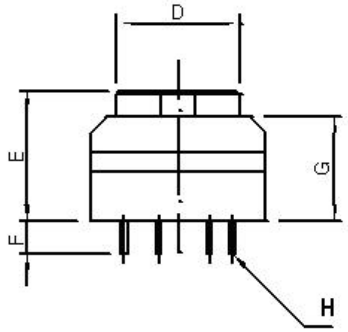
External Component Setting

FUSE	Fuse	Please make sure to use quick acting fuse 2A or higher
C1	Capacitor for input voltage smoothing	Capacitance : 10μF~820μF, Rated voltage : 400V or higher Ripple current is 0.13Arms above.
C2	For noise terminal voltage reduction	Capacitance : 0.1μF~0.22μF, Rated voltage : 400V or higher Film capacitor or ceramic capacitor. Reduce the noise terminal voltage. The constant value should be evaluated in the set.
C3	Capacitor for Safety	Capacitance : 1nF~4.7nF, Rated voltage : 400V or higher
C4,C5	Capacitor for output voltage smoothing	Capacitance : 470μF~1000μF, Rated voltage : 25V or higher ESD is 0.4Ω max. Ripple current is 0.25Arms above. Output noise voltage is influenced. Please evaluate it in the actual set.
C6	Bypass Capacitor for high frequency noise	Capacitance : 10nF~100nF, Rated voltage : 50V or higher Film capacitor or ceramic capacitor. Reduce the high frequency noise terminal output.
L1	Choke Coil	L : 4.7~10μH, Allowable current : 2A or higher Please use the one that is hard to be magnetic saturated even in the high temperature.
D1	Rectifier Diode	In the absolute maximum ratings, the reverse peak voltage should be 500V or higher, the average rectifying current should be 1A or higher, and the peak surge current should be 10A or higher. (Full-wave rectifier can be used in out part.)

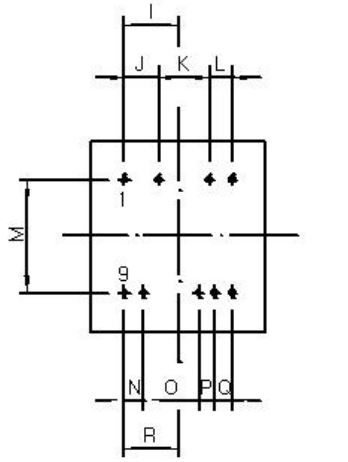
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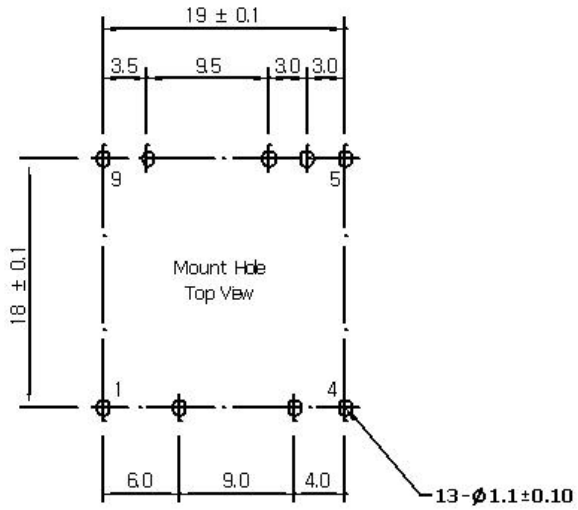
Package Outline





	Dimension mm
A	31.0
B	31.0
C	18.0
D	22.0
E	21.0
F	5.5
G	17.0
H	□ 0.65 ± 0.1
I	9.5
J	6.0
K	9.0
L	4.0
M	18 ± 0.1
N	3.5
O	9.5
P	3.0
Q	3.0
R	9.5





Product mass : about 25.0g
Dimension : mm
Tolerance : ± 0.5mm

Ordering Information

Order Number	Temperature Range	Package Type
MES1206	-25°C ~ 85°C	

* Please consult the factory or sales representative for pricing and availability.

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