

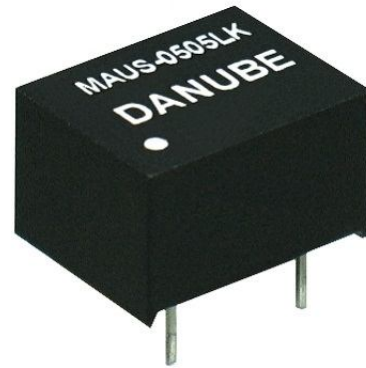
MAU-L / FLK SERIES

1W UNREGULATED

DANUBE

FEATURES

- DUAL IN LINE PACKAGE
- UP TO 1W UNREGULATED OUTPUT POWER
- 100% BURNED IN
- HIGH EFFICIENCY
- INTERNAL SMD TECHNOLOGY
- LOW COST
- UL 94V-0 PACKAGE MATERIAL
- CUSTOM SOLUTIONS AVAILABLE
- MTBF>2,000,000 HOURS
- RoHS COMPLIANT
- 3 YEARS WARRANTY



OUTPUT SPECIFICATIONS

Voltage Setpoint Accuracy	+/-2% max
Temperature Coefficient	+/-0.05%/°C
Ripple & Noise(20MHz BW) ¹	100mVp-p max
Line Regulation ²	+/-1.2% max
Load Regulation ³ (other Vout)	+/-8% max
Load Regulation ⁴ (3.3V Vout)	+/-12% max
Minimum Load	10% of Full Load
Short Circuit Protection	Momentary

INPUT SPECIFICATIONS

Input Voltage Range	+/-10% max
Input Filter Protection	Capacitor Typ Fuse Recommended
Fuse Rated	1A~1.5A (Built-in ,Suffix"F")

GENERAL SPECIFICATIONS

Efficiency	70%-82%
Isolation Voltage ⁵	1500 VDC min (also available with 3,000VDC ,Suffix"K")
Isolation Resistance	10 ⁹ ohms min
Isolation Capacitance	80pF max
Switching Frequency	100KHz Typ
MTBF ⁶	>2,900,000 Hours
Weight	1.7g Typ
Case Material	Non-Conductive Plastic
Case Size	12.7mm*10.16mm*7.10mm
Case Size(for 24V Input)	12.7mm*10.16mm*7.62mm
Conducted Emissions	EN55022 Class A
Radiated Emissions	EN55022 Class B

ENVIRONMENTAL SPECIFICATIONS

Operating Temperature	-40 °C to +85 °C
Case Temperature	+100 °C max
Storage Temperature	-55 °C to +125 °C
Humidity	95% max
Cooling	Free-Air Convection

ALL SPECIFICATIONS TYPICAL AT NOMINAL LINE, FULL LOAD , AND 25 °C UNLESS OTHERWISE NOTED.

¹ Measured with 1uF ceramic capacitor connect to the output pins.

² Line Regulation is for a 1.0% change in input Voltage.

³ Load Regulation is for output load current change from 20% to 100%.

⁴ Load Regulation is for output load current change from 20% to 100% when input voltage is 3.3V.

⁵ 1500VDC for 10 seconds,3000VDC for 3 seconds.

⁶ MIL-HDBK-217F @25 °C , Ground Benign.

● **SELECTION GUIDE**
1W OUTPUT

MODEL NUMBER	INPUT VOLTAGE (VDC)	OUTPUT VOLTAGE (VDC)	OUTPUT CURRENT (mA)	INPUT ¹ CURRENT(mA)		EFF (%) ²	ISOLATION (VDC) ³
				FULL LOAD	NO LOAD		
				MAUS-03.303.3(F)L(K)	3.3		
MAUS-03.305(F)L(K)	3.3	5	200	403	45	75	1500 (3000)
MAUS-0505(F)L(K)	5	5	200	260	30	77	1500 (3000)
MAUS-0509(F)L(K)	5	9	110	260	30	77	1500 (3000)
MAUS-0512(F)L(K)	5	12	84	256	30	78	1500 (3000)
MAUS-0515(F)L(K)	5	15	67	253	30	79	1500 (3000)
MAUD-0505(F)L(K)	5	+/-5	+/-100	263	30	76	1500 (3000)
MAUD-0512(F)L(K)	5	+/-12	+/-42	250	30	80	1500 (3000)
MAUD-0515(F)L(K)	5	+/-15	+/-34	260	30	77	1500 (3000)
MAUS-1205(F)L(K)	12	5	200	105	14	79	1500 (3000)
MAUS-1209(F)L(K)	12	9	110	106	14	78	1500 (3000)
MAUS-1212(F)L(K)	12	12	84	104	14	80	1500 (3000)
MAUS-1215(F)L(K)	12	15	67	105	14	79	1500 (3000)
MAUD-1205(F)L(K)	12	+/-5	+/-100	109	15	76	1500 (3000)
MAUD-1212(F)L(K)	12	+/-12	+/-42	105	15	79	1500 (3000)
MAUD-1215(F)L(K)	12	+/-15	+/-34	108	15	77	1500 (3000)
MAUS-2405(F)L(K)	24	5	200	54	9	77	1500 (3000)
MAUS-2409(F)L(K)	24	9	110	55	9	76	1500 (3000)
MAUS-2412(F)L(K)	24	12	84	53	9	78	1500 (3000)
MAUS-2415(F)L(K)	24	15	67	54	10	77	1500 (3000)
MAUD-2405(F)L(K)	24	+/-5	+/-100	56	9	75	1500 (3000)
MAUD-2412(F)L(K)	24	+/-12	+/-42	54	9	77	1500 (3000)
MAUD-2415(F)L(K)	24	+/-15	+/-34	55	10	76	1500 (3000)

Note: Other input to output voltages may be available. Please contact factory.

¹ NOMINAL INPUT VOLTAGE.

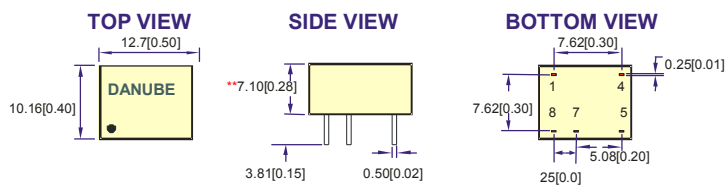
² NOMINAL INPUT VOLTAGE, FULL LOAD.

³ 1500VDC for 10 seconds,3000VDC for 3 seconds.

● PART NUMBERS STRUCTURE

Model Name	Difference
MAUv-x1x2(F)L(K)	<p>MA=Series Name</p> <p>U=Unregulated</p> <p>v=Type of output voltage (S=single output or D=Dual output)</p> <p>x1=input voltage(03.3 ; 05 ; 12 ; 24)</p> <p>x2=Output voltage(03.3 ; 05 ; 09 ; 12 ; 15 ; +/-5 ; +/-12 ; +/-15)</p> <p>F= Fuse (Optional, if Suffix" F")</p> <p>L= Operating Temperature=-40 °C to +85 °C</p> <p>K= Isolation Voltage 3KVDC (Optional, if Suffix" K")</p>

● MECHANICAL DIMENSIONS & RECOMMENDED FOOTPRINT DETAILS



All dimensions are in mm[inches]

PIN	SINGLE	DUAL
1	-Vin	-Vin
4	+Vin	+Vin
5	+Vout	+Vout
7	-Vout	COMMON
8	NP	-Vout

NOTE:

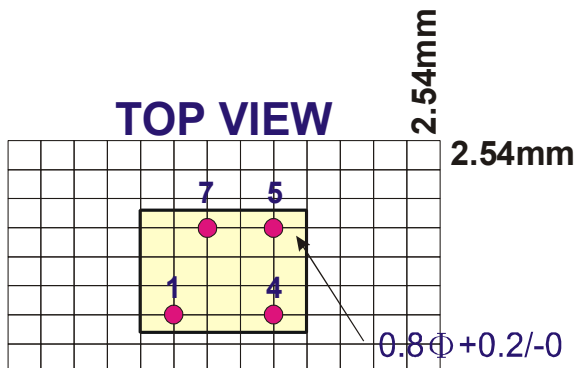
Pin Size is Tolerance 0.50Φ ±0.05mm

All Dimensions In mm(Inches)

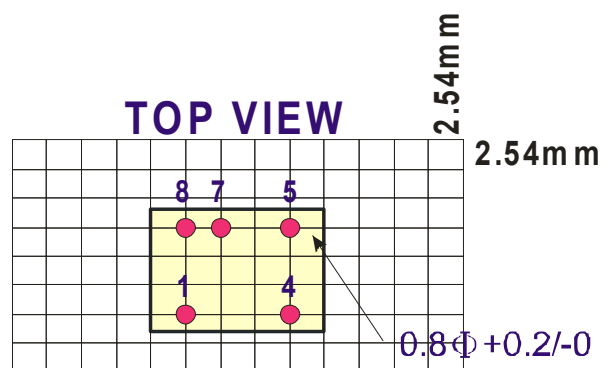
Tolerance .X or .XX= ±0.5mm

Note: **7.62[0.30] for 24V input Voltage

SINGLE OUTPUT

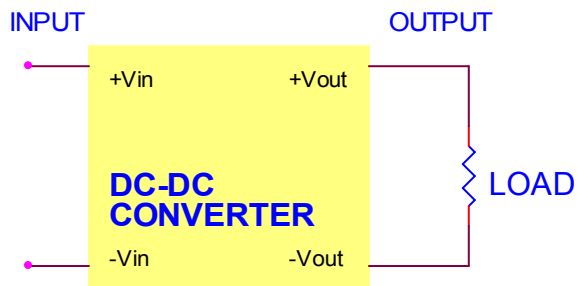


DUAL OUTPUT

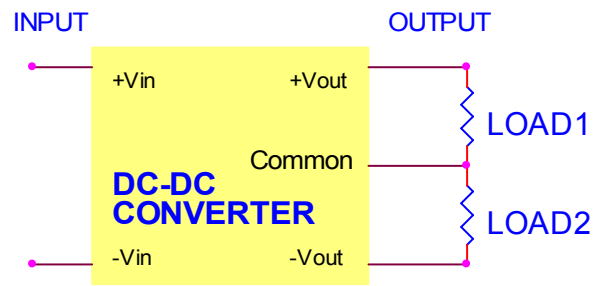


● TYPICAL APPLICATIONS

SINGLE OUTPUT

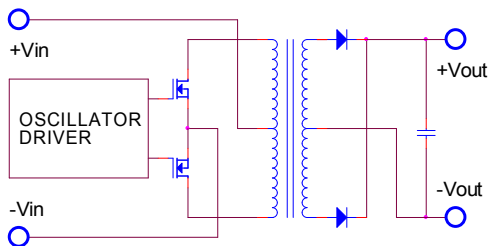


DUAL OUTPUT

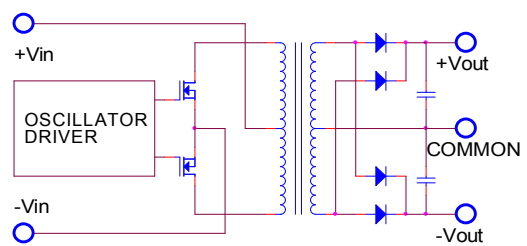


● SIMPLIFIED SCHEMATIC

SINGLE OUTPUT



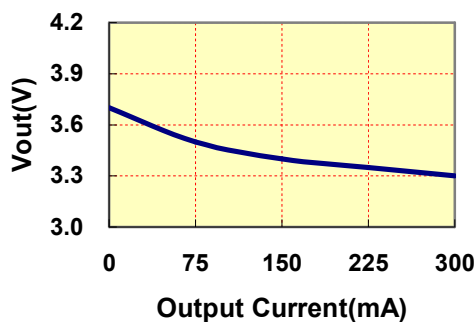
DUAL OUTPUT



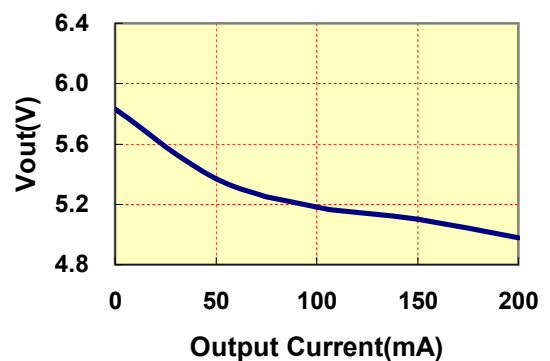
● TYPICAL PERFORMANCE CURVES

Specifications typical at TA=25°C, nominal input voltage, rated output current unless otherwise specified.

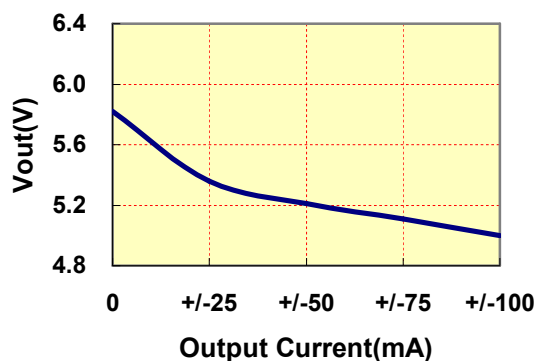
VOUT VS LOAD(3.3Vout Models)



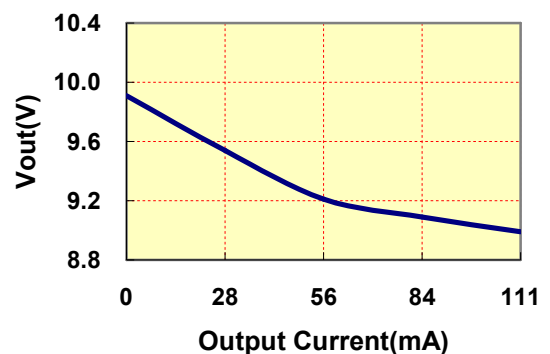
VOUT VS LOAD(5Vout Models)



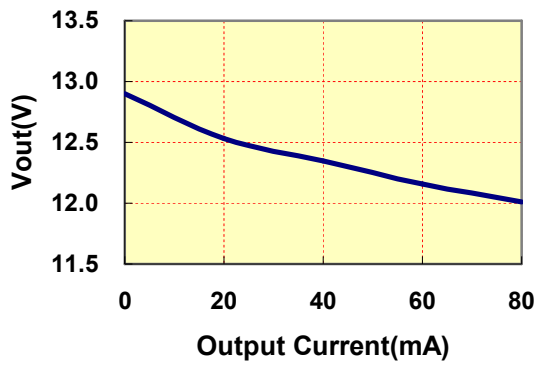
VOUT VS LOAD(+/-5Vout Models)



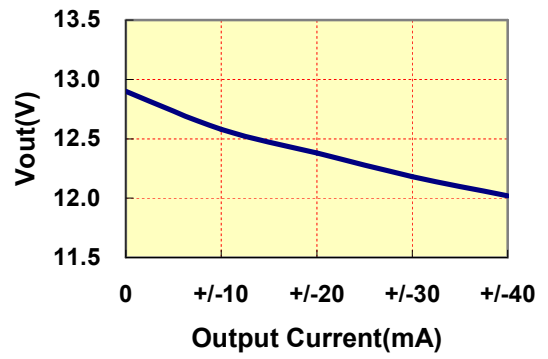
VOUT VS LOAD(9Vout Models)



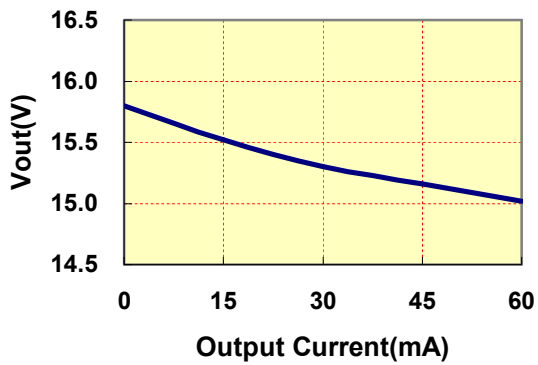
VOUT VS LOAD(12Vout Models)



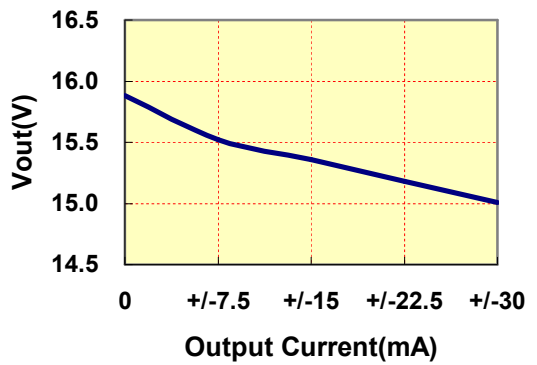
VOUT VS LOAD(+/- 12Vout Models)



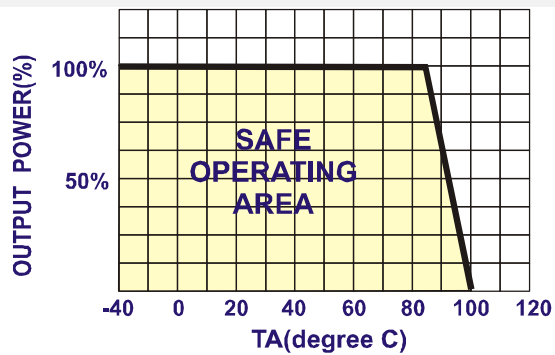
VOUT VS LOAD(15Vout Models)



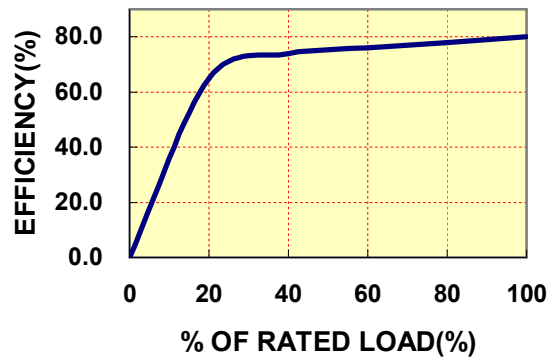
VOUT VS LOAD(+/- 15Vout Models)



DERATING CURVE



EFFICIENCY VS LOAD



● INPUT FUSE SELECTION GUIDE

2.7-3.6V	4.5-5.5V	10.8-13.2V	21.6-26.4V
INPUT VOLTAGE(VDC)	INPUT VOLTAGE(VDC)	INPUT VOLTAGE(VDC)	INPUT VOLTAGE(VDC)
1000mA Slow-Blow Type	500mA Slow-Blow Type	250mA Slow-Blow Type	150mA Slow-Blow Type

Note: Certain applications may require the installation of external fuse in front of the input.

MAU-L/FLK SERIES APPLICATION NOTES:

EXTERNAL CAPACITANCE REQUIREMENTS:

Output filtering is required for operation. A minimum of 10uF is needed. Output capacitance may be increased for additional filtering, not to exceed 220uF.

To meet the reflected ripple requirements of the converter, an input impedance of less than 0.5 ohm from DC to 250KHz is required.

We Can Offer EMC-Filter According To EN55011/22 Class B.

Negative Outputs:

A negative output voltage may be obtained by connecting the +OUT to circuit ground and connecting -OUT as the negative output.

FOR MORE INFORMATION CALL:

Danube Enterprise Co., Ltd.

Tel: 886-7-3755165

Fax: 886-7-3755330

E-mail: danube@ms10.hinet.net

Home Page

<http://www.danube.com.tw>
