MU-FLK SERIES

1W UNREGULATED

DANUBE

FEATURES

- SINGLE IN LINE PACKAGE
- UP TO 1W UNREGULATED OUTPUT POWER
- 100% BURN IN
- HIGH EFFICIENCY
- INTERNAL SMD TECHNOLOGY
- LOW COST
- NO HEATSINK REQUIRED
- UL 94V-0 PACKAGE MATERIAL
- CUSTOM SOLUTIONS AVAILABLE
- RoHS COMPLIANT
- 3 YEARS WARRANTY

OUTPUT SPECIFICATIONS

Voltage Set-point 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

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

INPUT SPECIFICATIONS

Input Voltage Range	+/-10% max
Input Filter	Capacitor Typ
Input Reflected Ripple Current	50mAp-p max
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]	>2,000,000 Hours
Weight	1.3g Typ
Case Material	Non-Conductive Plastic
Case A Size	11.7mm*6.0mm*10.2mm
Case B Size	11.7mm*7.5mm*10.1mm
Conducted Emissions	EN55022 Class A
Radiated Emissions	EN55022 Class B

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

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[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
ISOLATION 1500VDC

MODEL NUMBER	INPUT VOLTAGE (VDC)	OUTPUT VOLTAGE (VDC)	OUTPUT CURRENT (mA)	INPUT[7] CURRENT(mA)		EFF (%)[8]	ISOLATION (VDC)	PACKAGE
				FULL LOAD	NO LOAD			
MUS-03.303.3(F)L	3.3	3.3	303	403	43	75	1500	B
MUS-03.305(F)L	3.3	5	200	406	46	75	1500	B
MUS-0505(F)L	5	5	200	260	31	77	1500	A
MUS-0509(F)L	5	9	110	260	31	77	1500	A
MUS-0512(F)L	5	12	84	256	31	78	1500	A
MUS-0515(F)L	5	15	67	253	31	79	1500	A
MUS-1203.3(F)L	12	3.3	300	112	13	74	1500	A
MUS-1205(F)L	12	5	200	105	13	79	1500	A
MUS-1209(F)L	12	9	110	106	13	78	1500	A
MUS-1212(F)L	12	12	84	102	13	80	1500	A
MUS-1215(F)L	12	15	67	102	13	80	1500	A
MUS-2403.3(F)L	24	3.3	300	57	9	73	1500	B
MUS-2405(F)L	24	5	200	53	9	78	1500	B
MUS-2409(F)L	24	9	110	55	9	76	1500	B
MUS-2412(F)L	24	12	84	54	9	77	1500	B
MUS-2415(F)L	24	15	67	54	10	77	1500	B

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

● PARTNUMBES STRUCTURE

Model Name	Difference
MUS-x1x2(F)L	M=Series Name U=Unregulated S=single output x1=input voltage(03.3；05；12；24) x2=Output voltage(03.3；05；09；12；15) F= Fuse(Optional, if Suffix" F") L= Operating Temperature=-40 °C to +85 °C

[7] *NOMINAL INPUT VOLTAGE.*
[8] *NOMINAL INPUT VOLTAGE, FULL LOAD.*

● SELECTION GUIDE
ISOLATION 3000VDC

MODEL NUMBER	INPUT VOLTAGE (VDC)	OUTPUT VOLTAGE (VDC)	OUTPUT CURRENT (mA)	INPUT[9] CURRENT(mA)		EFF (%)[10]	ISOLATION (VDC)	PACKAGE
				FULL LOAD	NO LOAD			
MUS-03.303.3(F)LK	3.3	3.3	303	403	43	75	3000	B
MUS-03.305(F)LK	3.3	5	200	404	46	75	3000	B
MUS-0505(F)LK	5	5	200	260	31	77	3000	B
MUS-0509(F)LK	5	9	110	260	31	77	3000	B
MUS-0512(F)LK	5	12	84	256	31	78	3000	B
MUS-0515(F)LK	5	15	67	253	31	79	3000	B
MUS-1203.3(F)LK	12	3.3	300	112	13	74	3000	B
MUS-1205(F)LK	12	5	200	105	13	79	3000	B
MUS-1209(F)LK	12	9	110	106	13	78	3000	B
MUS-1212(F)LK	12	12	84	102	13	80	3000	B
MUS-1215(F)LK	12	15	67	102	13	80	3000	B
MUS-2403.3(F)LK	24	3.3	300	57	9	73	3000	B
MUS-2405(F)LK	24	5	200	53	9	78	3000	B
MUS-2409(F)LK	24	9	110	55	9	76	3000	B
MUS-2412(F)LK	24	12	84	54	9	77	3000	B
MUS-2415(F)LK	24	15	67	54	10	77	3000	B

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

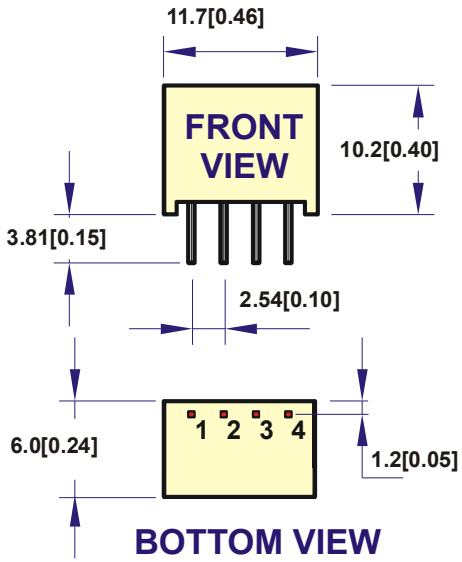
● PARTNUMBES STRUCTURE

Model Name	Difference
MUS-x1x2(F)L(K)	M=Series Name U=Unregulated S=single output x1=input voltage(03.3；05；12；24) x2=Output voltage(03.3；05；09；12；15) F= Fuse(Optional, if Suffix" F") L= Operating Temperature=-40 °C to +85 °C K= Isolation Voltage 3KVDC (Optional, if Suffix" K")

[9] *NOMINAL INPUT VOLTAGE.*
[10] *NOMINAL INPUT VOLTAGE, FULL LOAD.*

MECHANICAL DIMENSIONS & RECOMMENDED FOOTPRINT DETAILS

PACKAGE A

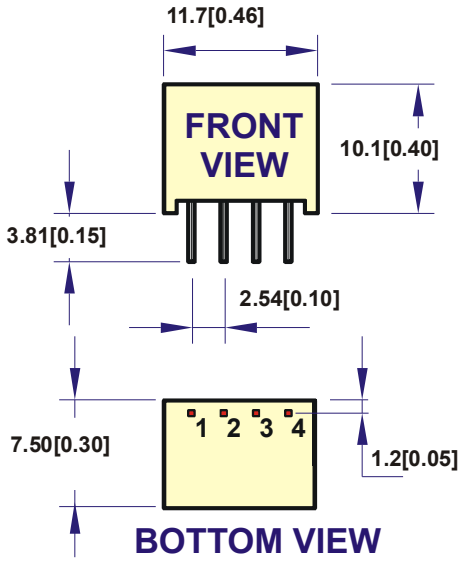


PIN	SINGLE
1	-Vin
2	+Vin
3	-Vout
4	+Vout

NOTE : All Dimensions In mm(Inches)
1. Pin Size is 0.50x0.30mm[0.02x0.01"]
2. Pin is Tolerance .XX= ±0.05mm
3. Tolerance .X or .XX= ±0.5mm

All dimensions are in mm[inches]

PACKAGE B

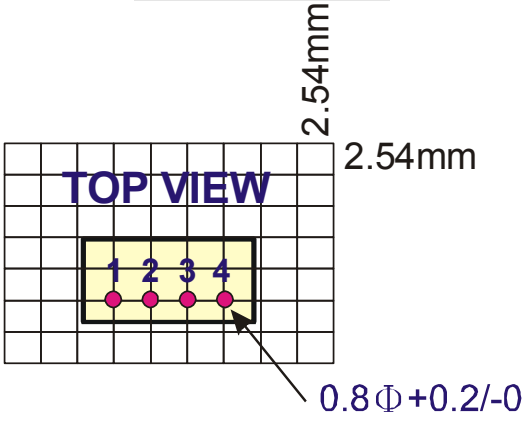


PIN	SINGLE
1	-Vin
2	+Vin
3	-Vout
4	+Vout

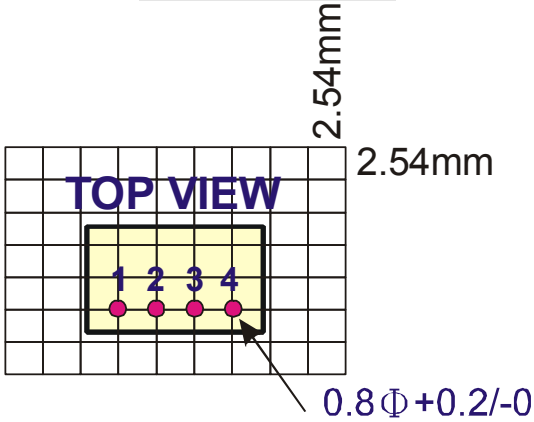
NOTE : All Dimensions In mm(Inches)
1. Pin Size is 0.50x0.30mm[0.02x0.01"]
2. Pin is Tolerance .XX= ±0.05mm
3. Tolerance .X or .XX= ±0.5mm

All dimensions are in mm[inches]

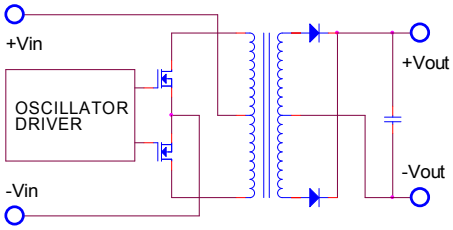
PACKAGE A



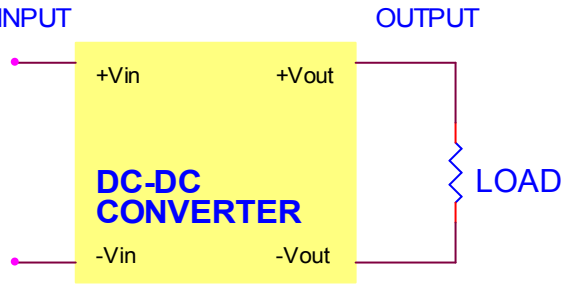
PACKAGE B



● SIMPLIFIED SCHEMATIC



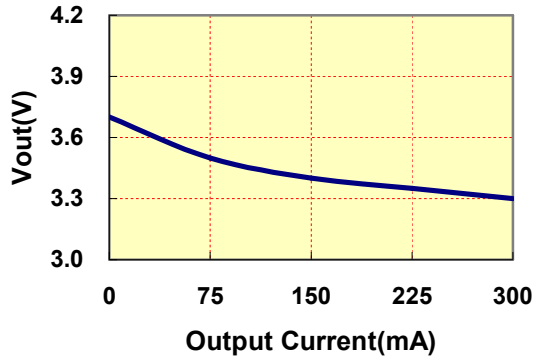
● TYPICAL APPLICATIONS



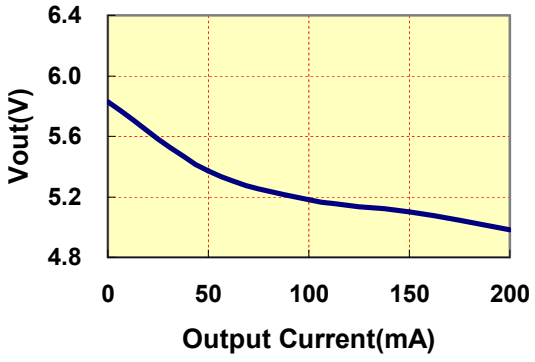
● TYPICAL PERFORMANCE CURVES

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

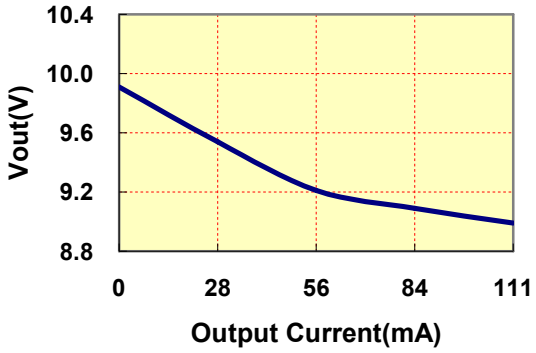
VOUT VS LOAD(3.3Vout Models)



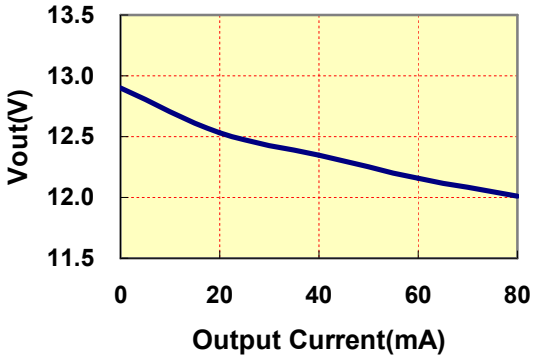
VOUT VS LOAD(5Vout Models)



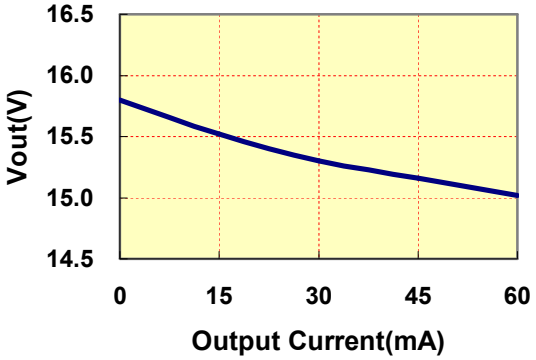
VOUT VS LOAD(9Vout Models)



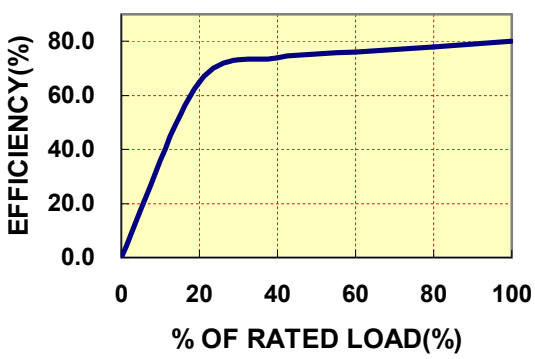
VOUT VS LOAD(12Vout Models)



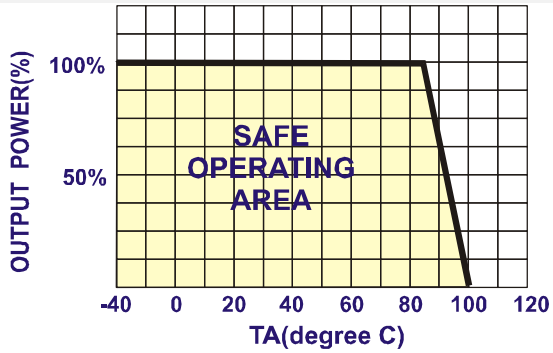
VOUT VS LOAD(15Vout Models)



EFFICIENCY VS LOAD

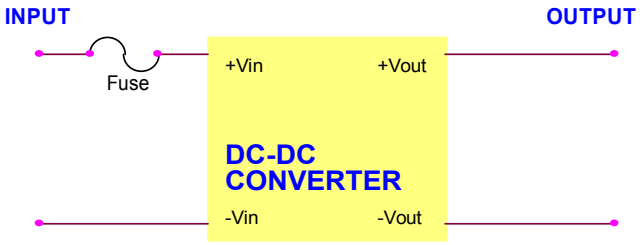


DERATING CURVE



● INPUT FUSE SELECTION GUIDE

3.0-3.6V INPUT VOLTAGE(VDC)	4.5-5.5V INPUT VOLTAGE(VDC)	10.8-13.2V INPUT VOLTAGE(VDC)	21.6-26.4V 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.

MU-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:

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