

Military DC-DC Converters



Series FB/MB Single and Series FB/MB Dual

**Isolated Regulated 100 Watts, Wide Input Range/36-72 VDC
Fully Regulated, Short Circuit Protected
Parallel Operation Available**

Features:

- Dual isolated outputs
- Short circuit protection
- Input voltage protection
- Thermal, over temp. shutdown
- Line regulation
- Load regulation
- No external components required
- Hi density, hi efficiency design
- Remote shutdown
- Trim capabilities
- Fixed frequency-100 Khtz

Typical Characteristics:

Frequency: 100 Khtz

Base plate: Max. +85° C

Operating temperature: See thermal chart: -40° C to +85° C base plate, -55° C to +85° C base plate.

Test conditions: 25° C ambient

Isolation Base Input: 2121 VDC

Isolation Input Output: 4242 VDC

Isolation Output to Base: 1000 VDC

Storage temperature: -55° C to +105° C

50 Standard Models

For all variations, call factory.

For Parallel Operation: Add suffix "P" (i.e. FB/MB5SP).

Consult factory to optimize for your application

Series FB : (-40° C to +85° C Operating Temperature) Series MB : (-55° C to +85° C Operating Temperature)	
Surge	Meets MIL STD 704
Vibration	Meets MIL STD 202 Method 204 Cond. D
Humidity	Meets MIL STD 202 Method 106
Shock	Meets MIL STD 202 Method 213 Cond. I
Altitude	Meets MIL STD 202 Method 105 Cond. D
Selected MIL STD 883 Options also Available	
Stabilization Bake	MIL STD 883 Method 1008 24 Hrs TA=125° C
Burn In	MIL STD 883 Method 1015 160 Hrs at 90° C, case
Temperature Cycle	MIL STD 883, -55°C to +105°C, Method 1010 Cond. B

The PICO FB and MB Series of high power DC-DC Converters, allow a wide input voltage of 36-72 VDC, while maintaining a regulated output. They are fully safeguarded for over voltage, over temperature and continuous short circuit protection.

The availability of Dual Isolated outputs, small size, and the capability of parallel operation as standard features should reduce your design and component costs, while the fixed frequency operation helps parallel connections for higher power requirements.

This high density unit is assembled in the USA with PICO quality and component selection, allowing it to meet the most stringent commercial requirements.

Series FB/MB Single * 100 Watts * Input 36-72 VDC

Input Volt. Range (V DC)	Outp. Volt. (V DC)	Max. Output Power * (W)	EFF. Full Load Typical ** (%)	Max. Load Regulation (%)**		Max. Line Regulation At Full Load (%)		Output Voltage Ripple (Full Load) 1-1MHz BW (MV P-P)	Outp. Volt. Toler. ** (±%)	Series FB Single (-40° C to +85° C)		Series MB Single (-55° C to +85° C)	
				10-50%	50-100%	36-48V	48-72V			Pico Part Number	Price (US \$)	Pico Part Number	Price (US \$)
36-72	3.3	50	76	1.50	1.50	0.75	0.75	50	2.0	FB3.3S	261.95	MB3.3S	367.22
36-72	5	75	78	1.00	1.00	0.75	0.75	50	1.5	FB5S	261.95	MB5S	367.22

36-72	5.2	75	78	1.00	1.00	0.75	0.75	50	1.5	FB5.2S	261.95	MB5.2S	367.22
36-72	9	100	82	1.00	1.00	0.75	0.75	50	1.0	FB9S	261.95	MB9S	367.22
36-72	12	100	84	0.75	0.75	0.50	0.50	50	1.0	FB12S	261.95	MB12S	367.22
36-72	15	100	85	0.75	0.75	0.50	0.50	50	1.0	FB15S	261.95	MB15S	367.22
36-72	24	100	87	0.50	0.50	0.50	0.50	50	0.5	FB24S	261.95	MB24S	367.22
36-72	28	100	87	0.50	0.50	0.50	0.50	50	0.5	FB28S	261.95	MB28S	367.22
36-72	48	100	88	0.50	0.50	0.50	0.50	50	0.5	FB48S	261.95	MB48S	367.22
36-72	100	100	87	0.50	0.50	0.50	0.50	50	0.5	FB100S	392.93	MB100S	550.84

10% Minimum load required at all times.
* Using proper thermal management, maximum temp. of +85° C (case)
** Reading taken at nominal 48 VDC input

Series FB/MB Dual * 100 Watts * Input 36-72 VDC

Input Volt. Range (V DC)	Outp. Volt. (V DC)	Max. Output Power * (W)	EFF. Full Load Typical ** (%)	Max. Load Regulation (%)**		Max. Line Regulation At Full Load (%)		Output Voltage Ripple (Full Load) 1-1MHz BW (MV P-P)	Outp. Volt. Toler. ** (± %)	Series FB Dual (-40° C to +85° C)		Series MB Dual (-55° C to +85° C)	
				10-50%	50-100%	36-48V	48-72V			Pico Part Number	Price (US \$)	Pico Part Number	Price (US \$)
36-72	5	37.5/37.5	78	1.00	1.00	0.75	0.75	50	1.5	FB5D	375.30	MB5D	526.12
36-72	9	50/50	82	1.00	1.00	0.75	0.75	50	1.0	FB9D	375.30	MB9D	526.12
36-72	12	50/50	84	0.75	0.75	0.50	0.50	50	1.0	FB12D	375.30	MB12D	526.12
36-72	15	50/50	85	0.75	0.75	0.50	0.50	50	1.0	FB15D	375.30	MB15D	526.12
36-72	24	50/50	87	0.50	0.50	0.50	0.50	50	0.5	FB24D	375.30	MB24D	526.12
36-72	28	50/50	87	0.50	0.50	0.50	0.50	50	0.5	FB28D	375.30	MB28D	526.12
36-72	48	50/50	88	0.50	0.50	0.50	0.50	50	0.5	FB48D	375.30	MB48D	526.12

10% Minimum load required at all times.
* Using proper thermal management, maximum temp. of +85° C (case)
** Reading taken at nominal 48 VDC input

****HIGH VOLTAGE SERIES FB/MB TO 300 VDC - 100 WATTS - INPUT 36-72 VDC

INPUT VOLTAGE (VDC)	OUTPUT VOLTAGE (VDC)	MAX. OUTPUT POWER (W)*	EFF. @ FULL LOAD TYP. (%)**	MAX. LOAD REGULATION (%)**		MAX. LINE REGULATION AT FULL LOAD (%)		OUTPUT VOLTAGE RIPPLE FULL LOAD 1-1MHz BW (%)	OUTPUT VOLTAGE Tolerance (±%)*	SERIES FB SINGLE (-40°C to +85°C)		SERIES MB SINGLE (-55°C to +85°C)	
				20-50%	50-100%	36-48V	48-72V			PICO PART NUMBER	PRICE (US \$)	PICO PART NUMBER	PRICE (US \$)
36-72	125	100	85	0.5	0.5	0.3	0.3	1	0.5	FB125S	382.21	MB125S	550.84
36-72	150	100	85	0.5	0.5	0.3	0.3	1	0.5	FB150S	382.21	MB150S	550.84
36-72	175	100	85	0.5	0.5	0.3	0.3	1	0.5	FB175S	382.21	MB175S	550.84
36-72	200	100	85	0.5	0.5	0.3	0.3	1	0.5	FB200S	509.62	MB200S	734.45
36-72	225	100	85	0.5	0.5	0.3	0.3	1	0.5	FB225S	509.62	MB225S	734.45
36-72	250	100	85	0.5	0.5	0.3	0.3	1	0.5	FB250S	509.62	MB250S	734.45
36-72	275	100	85	0.5	0.5	0.3	0.3	1	0.5	FB275S	509.62	MB275S	734.45

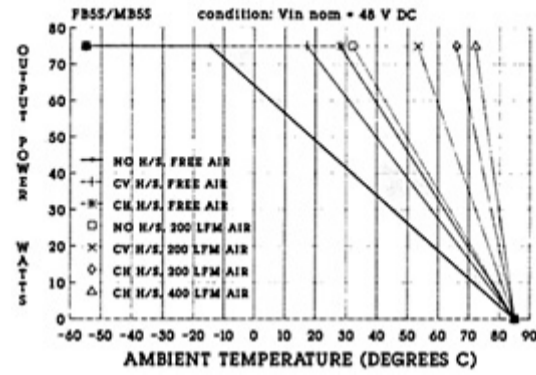
36-72	300	100	85	0.5	0.5	0.3	0.3	1	0.5	FB300S	637.02	MB300S	918.06
10% Minimum load required at all times *Using proper thermal management maximum temp of +85°C (case) **Reading taken at nominal 48 VDC input ****UL approval recognition pending													

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Full thermal analysis can be determined using application notes on page 124. By using the efficiency and thermal resistance of your desired unit to the formula you can complete your evaluation. The curves below were generated for Part #FB55/MB55 using Application Notes. Please consult factory with any questions.



Larger Version of Graph [4]

For immediate engineering assistance or to place an order: **Call Toll Free: 800-431-1064**

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