PICO Electronics

Military DC-DC Converters

Series FC/MC Single and Series FC/MC Dual

Isolated Regulated 100 Watts, Wide Input Range/100-180 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. +85º C
Operating temperature: See thermal chart: -40º C to +85º C base plate, -55º C to +85º C base plate.
Test conditions: 25º C ambient
Isolation Base Input: 2121 VDC
Isolation Input Output: 4242 VDC
Isolation Output to Base: 1000 VDC
Storage temperature: -55º C to +105º C

- **50 Standard Models**

For all variations, call factory.
For Parallel Operation: Add suffix "P" (i.e. FC/MC5SP).
Consult factory to optimize for your application.

Series FC : (-40º C to +85º C Operating Temperature) **Series MC : (-55º C to +85º 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=125º C
Burn In	MIL STD 883 Method 1015 160 Hrs at 90º C, case
Temperature Cycle	MIL STD 883, -55ºC to +105ºC, Method 1010 Cond. B

The PICO FC and MC Series of high power DC-DC Converters, allow a wide input voltage of 100-180 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 FC/MC Single * 100 Watts * Input 100-180 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 FC Single (-40º C to +85º C)		Series MC Single (-55º C to +85º C)	
				10-50%	50-100%	100-150V	150-180V			Pico Part Number	Price (US $)	Pico Part Number	Price (US $)
100-180	3.3	50	76	1.00	1.00	0.75	0.75	50	2.0	FC3.3S	288.15	MC3.3S	392.93

100-180	5	75	78	1.00	1.00	0.75	0.75	50	1.5	FC5S	288.15	MC5S	392.93
100-180	5.2	75	78	1.00	1.00	0.75	0.75	50	1.5	FC5.2S	288.15	MC5.2S	392.93
100-180	9	100	84	0.75	0.75	0.50	0.50	50	1.0	FC9S	288.15	MC9S	392.93
100-180	12	100	86	0.75	0.75	0.50	0.50	50	1.0	FC12S	288.15	MC12S	392.93
100-180	15	100	87	0.75	0.75	0.50	0.50	50	1.0	FC15S	288.15	MC15S	392.93
100-180	24	100	88	0.50	0.50	0.30	0.30	50	0.5	FC24S	288.15	MC24S	392.93
100-180	28	100	88	0.50	0.50	0.20	0.20	50	0.5	FC28S	288.15	MC28S	392.93
100-180	48	100	88	0.50	0.50	0.20	0.20	50	0.5	FC48S	288.15	MC48S	392.93
100-180	100	100	87	0.50	0.50	0.30	0.30	50	0.5	FC100S	432.22	MC100S	589.39

10% Minimum load required at all times.
* Using proper thermal management, maximum temp. of +85º C (case)
** Reading taken at nominal 150 VDC input

Series FC/MC Dual * 100 Watts * Input 100-180 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 FC Dual (-40º C to +85º C)		Series MC Dual (-55º C to +85º C)	
				10-50%	50-100%	100-150V	150-180V			Pico Part Number	Price (US $)	Pico Part Number	Price (US $)
100-180	5	37.5/37.5	78	1.00	1.00	0.75	0.75	50	1.5	FC5D	412.83	MC5D	562.95
100-180	9	50/50	84	0.75	0.75	0.50	0.50	50	1.0	FC9D	412.83	MC9D	562.95
100-180	12	50/50	86	0.75	0.75	0.50	0.50	50	1.0	FC12D	412.83	MC12D	562.95
100-180	15	50/50	87	0.75	0.75	0.50	0.50	50	1.0	FC15D	412.83	MC15D	562.95
100-180	24	50/50	88	0.50	0.50	0.30	0.30	50	0.5	FC24D	412.83	MC24D	562.95
100-180	28	50/50	88	0.50	0.50	0.20	0.20	50	0.5	FC28D	412.83	MC28D	562.95
100-180	48	50/50	88	0.50	0.50	0.20	0.20	50	0.5	FC48D	412.83	MC48D	562.95

10% Minimum load required at all times.
* Using proper thermal management, maximum temp. of +85º C (case)
** Reading taken at nominal 150 VDC input

****HIGH VOLTAGE SERIES FC/MC
TO 300 VDC - 100 WATTS - INPUT 100-180 VDC

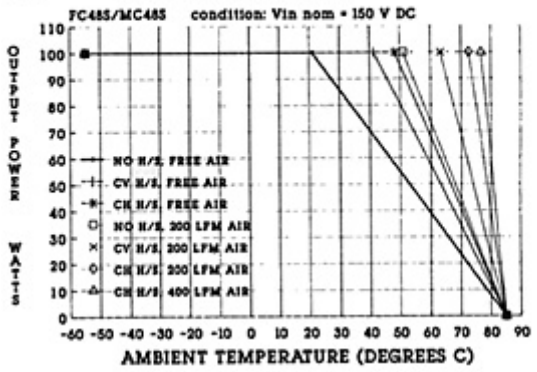
INPUT VOLTAGE RANGE (VDC)	OUTPUT VOLTAGE (V DC)	MAX. OUTPUT POWER (W)*	EFF. @ FULL LOAD TYP. (%)**	MAX. LOAD REGULATION (%)**		MAX. LINE REGULATION AT FULL LOAD (%)		OUTPUT VOLTAGE RIPPLE FULL LOAD 1-1MHz BW (%)	OUTPUT VOLTAGE Tolerance (±%)**	SERIES FC SINGLE (-40ºC to +85ºC)		SERIES MC SINGLE (-55ºC to +85ºC)	
				20-50%	50-100%	100-150V	150-180V			PICO PART NUMBER	PRICE (US $)	PICO PART NUMBER	PRICE (US $)
100-180	125	100	85	0.5	0.5	0.3	0.3	1	0.5	FC125S	420.43	MC125S	589.39
100-180	150	100	85	0.5	0.5	0.3	0.3	1	0.5	FC150S	420.43	MC150S	589.39

100-180	175	100	85	0.5	0.5	0.3	0.3	1	0.5	FC175S	420.43	MC175S	589.39
100-180	200	100	85	0.5	0.5	0.3	0.3	1	0.5	FC200S	560.58	MC200S	785.86
100-180	225	100	85	0.5	0.5	0.3	0.3	1	0.5	FC225S	560.58	MC225S	785.86
100-180	250	100	85	0.5	0.5	0.3	0.3	1	0.5	FC250S	560.58	MC250S	785.86
100-180	275	100	85	0.5	0.5	0.3	0.3	1	0.5	FC275S	560.58	MC275S	785.86
100-180	300	100	85	0.5	0.5	0.3	0.3	1	0.5	FC300S	700.72	MC300S	982.32

10% Minimum load required at all times
*Using proper thermal management maximum temp of +85ºC (case)
**Reading taken at nominal 150 VDC input
****UL approval recognition pending

VIEW HEAT SINKS[1] GO TO APPLICATION NOTES [2] GO TO MECHANICAL CONFIGURATIONS[3]

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 #FC48S/MC48S 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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