

Military DC-DC Converters



Series FA/MA Single and Series FA/MA Dual

Isolated Regulated 100 Watts, Wide Input Range/18-36 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

• 46 Standard Models

For all variations, call factory.

For Parallel Operation: Add suffix "P"(i.e. FA/MA5SP).

Consult factory to optimize for your application.

Series FA : (-40° C to +85° C Operating Temperature)

Series MA : (-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

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

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 FA and MA Series of high power DC-DC Converters, allow a wide input voltage of 18-36 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 FA/MA Single * 100 Watts * Input 18-36 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 FA Single (-40° C to +85° C)		Series MA Single (-55° C to +85° C)	
				10-50%	50-100%	18-28V	28-36V			Pico Part Number	Price (US \$)	Pico Part Number	Price (US \$)
18-36	3.3	50	74	2.00	2.00	1.50	1.50	50	2.0	FA3.3S	288.15	MA3.3S	392.93
18-36	5	75	76	2.00	2.00	1.50	1.50	50	2.0	FA5S	288.15	MA5S	392.93
18-36	5.2	75	76	2.00	2.00	1.50	1.50	50	2.0	FA5.2S	288.15	MA5.2S	392.93
18-36	9	100	81	1.50	1.50	1.25	1.25	50	1.5	FA9S	288.15	MA9S	392.93
18-36	12	100	83	1.25	1.25	1.00	1.00	50	1.0	FA12S	288.15	MA12S	392.93
18-36	15	100	84	1.00	1.00	0.75	0.75	50	1.0	FA15S	288.15	MA15S	392.93
18-36	24	100	86	0.75	0.75	0.50	0.50	50	1.0	FA24S	288.15	MA24S	392.93
18-36	28	100	86	0.50	0.50	0.50	0.50	50	0.5	FA28S	288.15	MA28S	392.93
18-36	48	100	86	0.50	0.50	0.50	0.50	50	0.5	FA48S	288.15	MA48S	392.93
18-36	100	100	85	0.50	0.50	0.50	0.50	50	0.5	FA100S	432.22	MA100S	589.39

10% Minimum load required at all times.
 * Using proper thermal management, maximum temp. of +85° C (case)
 ** Reading taken at nominal 28 VDC input

Series FA/MA Dual * 100 Watts * Input 18-36 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 FA Dual (-40° C to +85° C)		Series MA Dual (-55° C to +85° C)	
				10-50%	50-100%	18-28V	28-36V			Pico Part Number	Price (US \$)	Pico Part Number	Price
18-36	5	37.5/37.5	76	2.00	2.00	1.50	1.50	50	2.0	FA5D	412.83	MA5D	562.95
18-36	9	50/50	81	1.50	1.50	1.25	1.25	50	1.5	FA9D	412.83	MA9D	562.95
18-36	12	50/50	83	1.25	1.25	1.00	1.00	50	1.0	FA12D	412.83	MA12D	562.95
18-36	15	50/50	84	1.00	1.00	0.75	0.75	50	1.0	FA15D	412.83	MA15D	562.95
18-36	24	50/50	85	0.75	0.75	0.50	0.50	50	1.0	FA24D	412.83	MA24D	562.95
18-36	28	50/50	86	0.50	0.50	0.50	0.50	50	0.5	FA28D	412.83	MA28D	562.95
18-36	48	50/50	86	0.50	0.50	0.50	0.50	50	0.5	FA48D	412.83	MA48D	562.95

10% Minimum load required at all times.
 * Using proper thermal management, maximum temp. of +85° C (case)
 ** Reading taken at nominal 28 VDC input

****HIGH VOLTAGE SERIES FA/MA
TO 250 VDC - 100 WATTS - INPUT 18-36 VDC

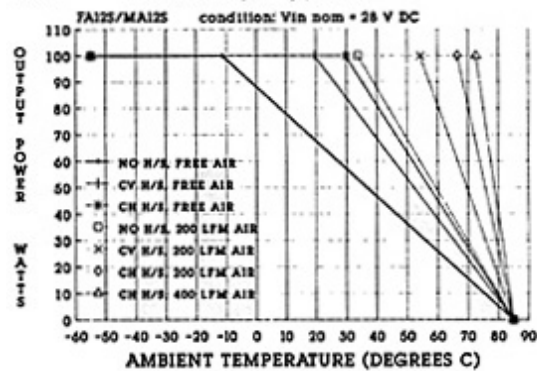
INPUT VOLTAGE RANGE (VDC)	OUTPUT VOLTAGE (VDC)	MAX. OUTPUT POWER (W)*	EFF. @ FULL LOAD TYP. (%)**	MAX. LOAD REGULATION (%)**		MAX. LINE REGULATION AT FULL LOAD		OUTPUT VOLTAGE RIPPLE FULL LOAD 1-1MHz BW (%)	OUTPUT VOLTAGE Tolerance (±%)**	SERIES FA SINGLE (-40°C to +85°C)		SERIES MA SINGLE (-55°C to +85°C)	
				20-50%	50-100%	18-28V	28-36V			PICO PART NUMBER	PRICE (US \$)	PICO PART NUMBER	PRICE (US \$)
18-36	125	100	85	0.5	0.5	0.3	0.3	1	0.5	FA125S	420.43	MA125S	589.39
18-36	150	100	85	0.5	0.5	0.3	0.3	1	0.5	FA150S	420.43	MA150S	589.39
18-36	175	100	85	0.5	0.5	0.3	0.3	1	0.5	FA175S	420.43	MA175S	589.39
18-36	200	100	85	0.5	0.5	0.3	0.3	1	0.5	FA200S	560.58	MA200S	785.86
18-36	225	100	85	0.5	0.5	0.3	0.3	1	0.5	FA225S	560.58	MA225S	785.86
18-36	250	100	85	0.5	0.5	0.3	0.3	1	0.5	FA250S	560.58	MA250S	785.86
10% Minimum load required at all times. *Using proper thermal management maximum temp of +85°C (case) **Reading taken at nominal 28 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 #FA125/MA12S using Application Notes - Please consult factory with any questions.



[Larger Version of Graph](#)

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

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