

MILITARY SERIES FA (-40°C to +85°C Operating Temperature) SERIES MA (-55°C to +85°C Operating Temperature)

3.3 to 250 VDC Outputs Available
Isolated Regulated 100 Watts
DC-DC Converters
Wide Input Range/18-36 VDC
Short Circuit Protected
‡ Parallel Operation



The new PICO Series FA and MA 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.

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 Temp.: 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 Temp.: - 55° C to +105° C

For All Variations Call Factory

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
Selected MIL STD 883 Options also Available	
STABILIZATION BAKE	MIL STD 883 Method 1008 24 Hrs 7A=125°C
BURN IN	MIL STD 883 Method 1015 160 Hrs at 90°C
TEMPERATURE CYCLE	MIL STD 883 -55°C to +105°C Method 1010 Cond. B

SERIES FA/MA SINGLE - 100 WATTS - INPUT 18-36 VDC



INPUT VOLT-AGE RANGE (V DC)	OUTPUT VOLTAGE (V DC)	MAX. OUTPUT POWER (W)	EFF. @ FULL LOAD TYPICAL (%)	MAX LOAD REGULATION (%) **		MAX LINE REGULATION AT FULL LOAD (%)		OUTPUT VOLTAGE RIPPLE FULL LOAD 1-1 MHz BW (MVP-P) (%)	OUTPUT VOLTAGE TOLERANCE (±%) **	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	PICO PART NUMBER	PRICE
18-36	3.3	50	74	2.00	2.00	1.50	1.50	50	2.00	FA3.3S	208.00	MA3.3S	312.00
18-36	5	75	76	2.00	2.00	1.50	1.50	50	2.00	FA5S	208.00	MA5S	312.00
18-36	5.2	75	76	2.00	2.00	1.50	1.50	50	2.00	FA5.2S	208.00	MA5.2S	312.00
18-36	9	100	81	1.50	1.50	1.25	1.25	50	1.50	FA9S	208.00	MA9S	312.00
18-36	12	100	83	1.25	1.25	1.00	1.00	50	1.00	FA12S	208.00	MA12S	312.00
18-36	15	100	84	1.00	1.00	0.75	0.75	50	1.00	FA15S	208.00	MA15S	312.00
18-36	24	100	86	0.75	0.75	0.50	0.50	50	1.00	FA24S	208.00	MA24S	312.00
18-36	28	100	86	0.50	0.50	0.50	0.50	50	0.50	FA28S	208.00	MA28S	312.00
18-36	48	100	86	0.50	0.50	0.50	0.50	50	0.50	FA48S	208.00	MA48S	312.00
18-36	100	100	85	0.50	0.50	0.50	0.50	50	0.50	FA100S	312.00	MA100S	468.00

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-AGE RANGE (V DC)	OUTPUT VOLTAGE (V DC)	MAX. OUTPUT POWER (W)	EFF. @ FULL LOAD TYPICAL (%)	MAX LOAD REGULATION (%) **		MAX LINE REGULATION AT FULL LOAD (%)		OUTPUT VOLTAGE RIPPLE FULL LOAD 1-1 MHz BW (MVP-P) (%)	OUTPUT VOLTAGE TOLERANCE (±%) **	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	PICO PART NUMBER	PRICE
18-36	5	37.5/37.5	76	2.00	2.00	1.50	1.50	50	2.0	FA5D	298.00	MA5D	447.00
18-36	9	50/50	81	1.50	1.50	1.25	1.25	50	1.5	FA9D	298.00	MA9D	447.00
18-36	12	50/50	83	1.25	1.25	1.00	1.00	50	1.0	FA12D	298.00	MA12D	447.00
18-36	15	50/50	84	1.00	1.00	0.75	0.75	50	1.0	FA15D	298.00	MA15D	447.00
18-36	24	50/50	85	0.75	0.75	0.50	0.50	50	1.0	FA24D	298.00	MA24D	447.00
18-36	28	50/50	88	0.50	0.50	0.50	0.50	50	0.5	FA28D	298.00	MA28D	447.00
18-36	48	50/50	86	0.50	0.50	0.50	0.50	50	0.5	FA48D	298.00	MA48D	447.00

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

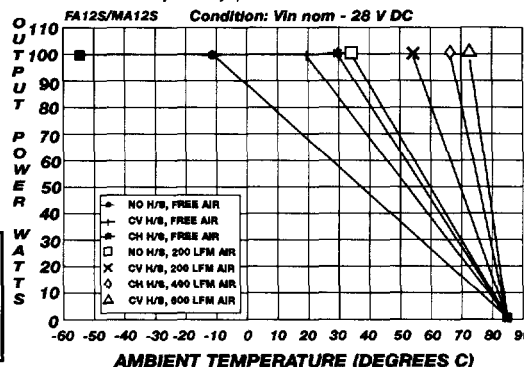
INPUT VOLT-AGE RANGE (V DC)	OUTPUT VOLTAGE (V DC)	MAX. OUTPUT POWER (W)*	EFF. @ FULL LOAD TYPICAL (%)**	MAX LOAD REGULATION (%) **		MAX LINE REGULATION AT FULL LOAD (%)		OUTPUT VOLTAGE RIPPLE FULL LOAD 1-1 MHz BW (%)	OUTPUT VOLTAGE TOLERANCE (±%)**	PICO PART NUMBER	PRICE	PICO PART NUMBER	PRICE
				10-50%	50-100%	18-28V	28-36V						
18-36	125	100	85	0.5	0.5	0.3	0.3	1	0.5	FA125S	312.00	MA125S	468.00
18-36	150	100	85	0.5	0.5	0.3	0.3	1	0.5	FA150S	312.00	MA150S	468.00
18-36	175	100	85	0.5	0.5	0.3	0.3	1	0.5	FA175S	312.00	MA175S	468.00
18-36	200	100	85	0.5	0.5	0.3	0.3	1	0.5	FA200S	416.00	MA200S	624.00
18-36	225	100	85	0.5	0.5	0.3	0.3	1	0.5	FA225S	416.00	MA225S	624.00
18-36	250	100	85	0.5	0.5	0.3	0.3	1	0.5	FA250S	416.00	MA250S	624.00

10% Minimum load required at all times

*Using proper thermal management maximum temp of + 85°C (case)

‡UL approval recognition pending

Full thermal analysis can be determined using application notes on page 138. 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 #FA12S/MA12S using Application Notes. Please consult factory with any questions.



Application Notes page 138
 Mechanical Configuration page 142

Dual Isolated Outputs
Special Voltage Combinations Available

Delivery - stock to one week

‡Parallel Operation
 Consult factory to optimize for your application