



Figure 1. Top View



Figure 2. Side View



Figure 3. Side View



Figure 4. Bottom View

FEATURES

- Wide Input Power Voltage Range: 18V to 36V
- Output Voltage: 300V
- Max. Output Current: 20mA
- High Efficiency: 78%
@ $V_{IN} = 24V$ & $V_{OUT} = 100V$ & $I_{OUT} = 20mA$
- Output Ripple Voltage: $\pm 1\%$ @20MHz
- Isolation Voltage: 1500VDC
- Output Short-Circuit Protection: Automatic Recovery
- Full Aluminum Housing for Complete Shielding
- Industry Standard DIP Package
- Operating Temperature Range: $-40^{\circ}C \sim +85^{\circ}C$
- 100 % Lead (Pb)-free and RoHS Compliant

APPLICATIONS

This power module, ATMV24V300V20MA1, is designed for achieving DC-DC conversion from low voltage to high voltage as a power supply source. It is widely used in scientific research and other fields including:

- Sustaining Ion Pumps
- Spectral Analysis
- Electrophoresis
- Particle Accelerator
- Capillary Electrophoresis
- Piezo Devices
- Photo Multiplier Tubes
- Avalanche Photo Diodes



DESCRIPTION

This Power Module is a medium voltage, isolated DC-DC converter with 2:1 input voltage range. With a wide operating temperature range, built in short-circuit protection, providing this unit with high reliability and long life.

Table 1. Pin Names, Functions and Specifications.

Table with 7 columns: No., Name, Type, Description, Min., Typ., Max. and 5 rows of pin specifications.

SPECIFICATIONS

Table 2.

Table with 7 columns: Parameter, Symbol, Test Conditions, Min., Typ., Max., Unit/Note and 16 rows of technical specifications.



Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit/Note
Isolation Capacitance				1		nF
Output Voltage Temperature Coefficient	TCV_{OUT}	$V_{VPS} = 24V$ $I_{OUT} = 80mA$			0.03	%/°C
Cooling Method			Air Cooling			
Mean Time Between Failure	MTBF	MIL-HDBK-217F@25°C		1000		Kh
Operating Temperature Range	T_{opr}		-40		85	°C
Storage Temperature Range	T_{stg}		-40		105	°C
Maximum Soldering Temperature on Connection Pins	T_{sld}	Soldering Time:10s			300	°C
Case Temperature Rise	T_{cs}	$V_{VPS} = 24V$ $I_{OUT} = 80mA$		35		°C
Storage Relative Humidity Range	RH				95	%
Case Material			Aluminum			
External Dimensions (Exclude Connection Pins)			50.8×25.4×10.5			mm
			2×1×0.41			inch
Weight				25		g
				0.055		lbs
				0.881		Oz

TYPICAL PERFORMANCE CHARACTERISTICS

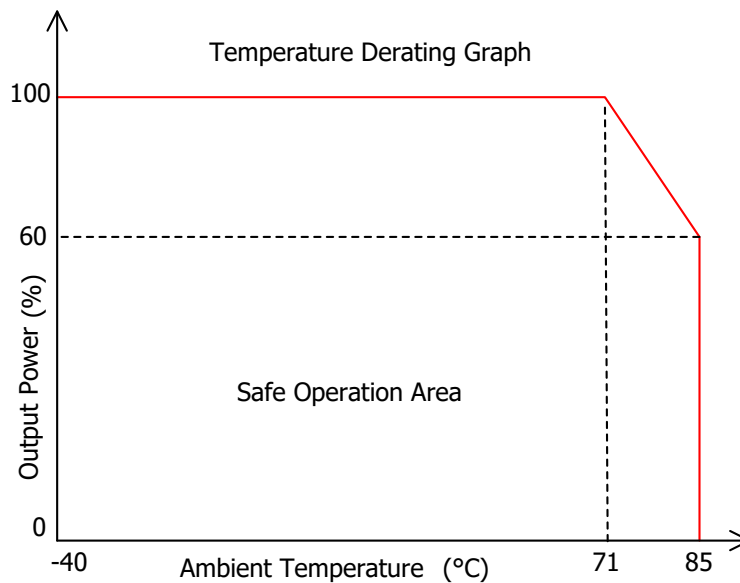


Figure 5. Derating Curve

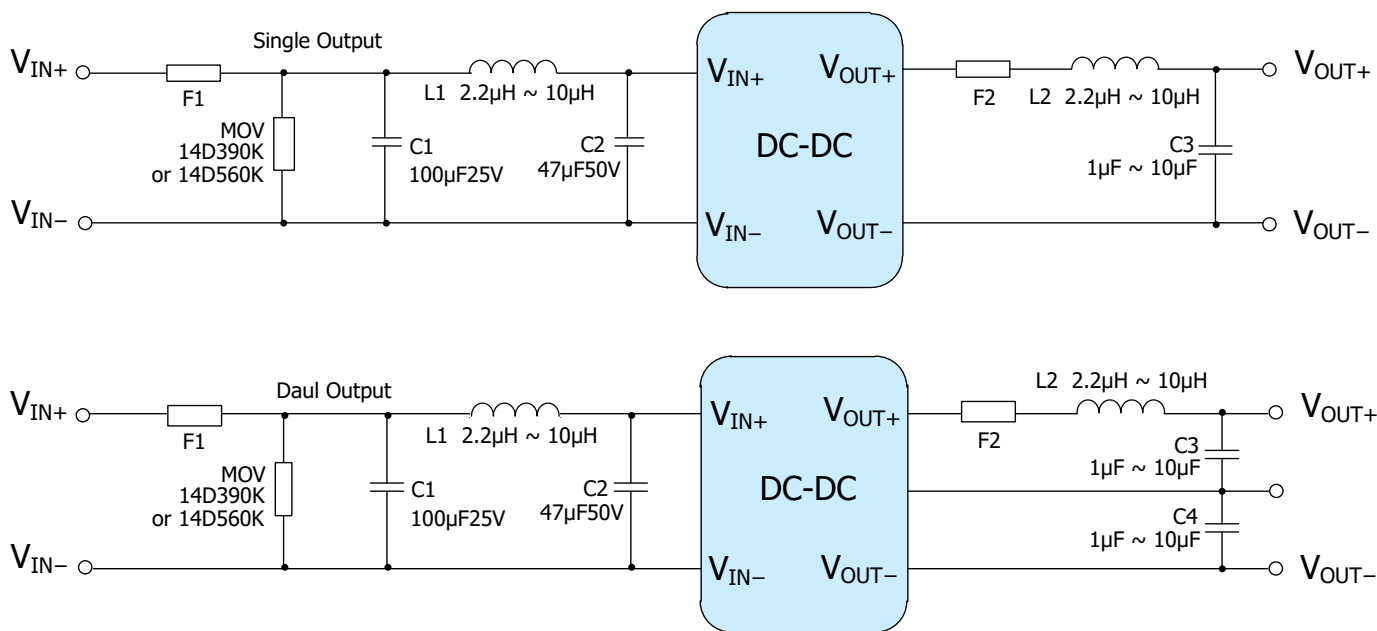
TYPICAL APPLICATIONS


Figure 6. Typical Applications

Table 3. Recommended Values

F1	Input Time-delay Fuse	
F2 & F3	Output Time-delay Fuse, or Resettable Fuse (PTC)	
MOV	14D390K	Input Voltage: 12VDC
	14D560K	Input Voltage: 24VDC
C1 & C2	100µF/25V	Input Voltage: 2VDC
	47µF/50V	Input Voltage: 24VDC
C3 & C4	1.0µF ~ 10µF (High Frequency ESR)	
L1, L2 & L3	2.2µH ~ 10µH	

To further reduce the input and output ripple, the parameters of the LC filter can be appropriately increased, but it should be noted that the external capacitor at the output end should not be too large, and should be lower than the maximum capacitive load of the product.

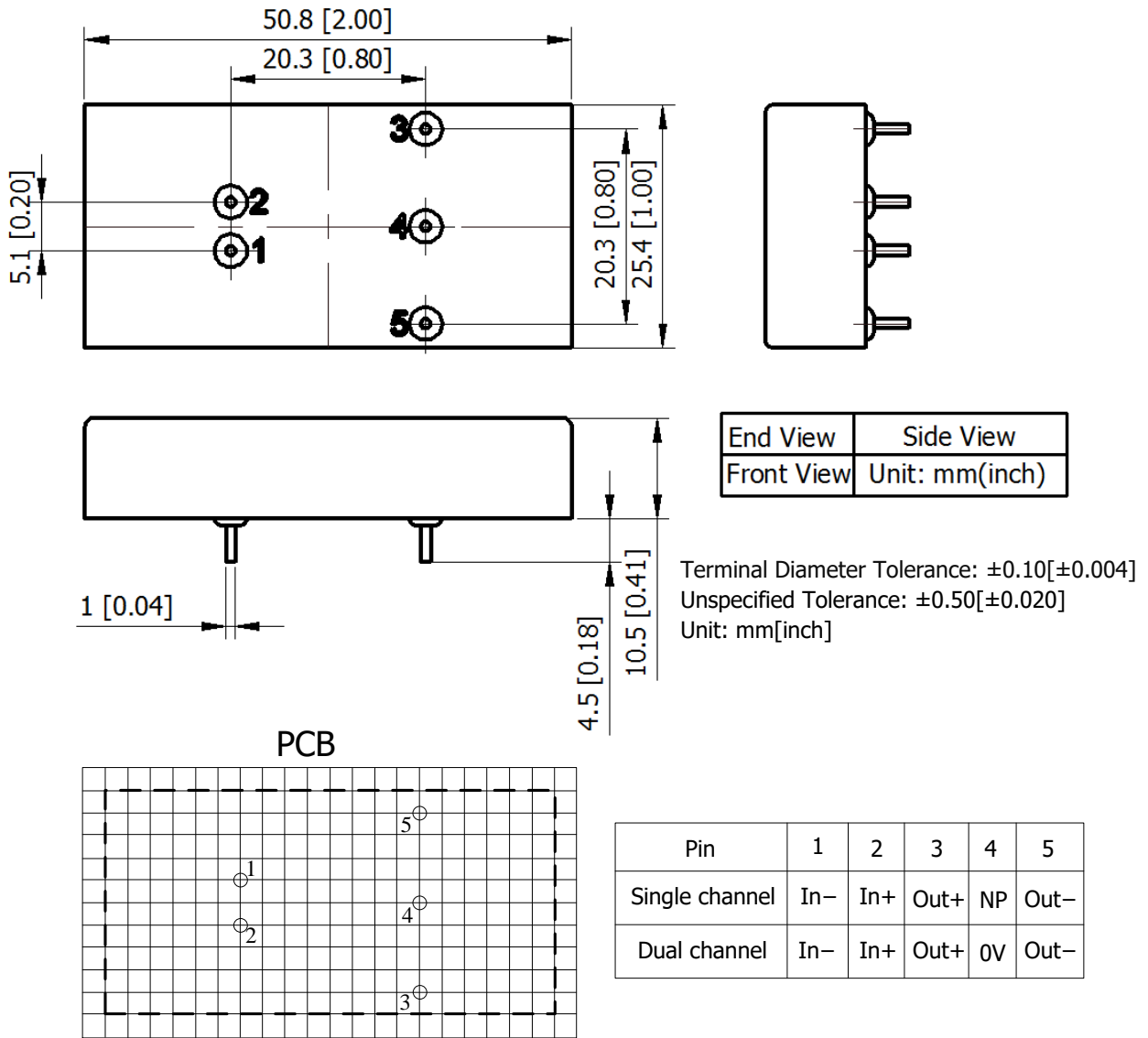
OUTLINE DIMENSIONS


Figure 7. Outline Dimensions

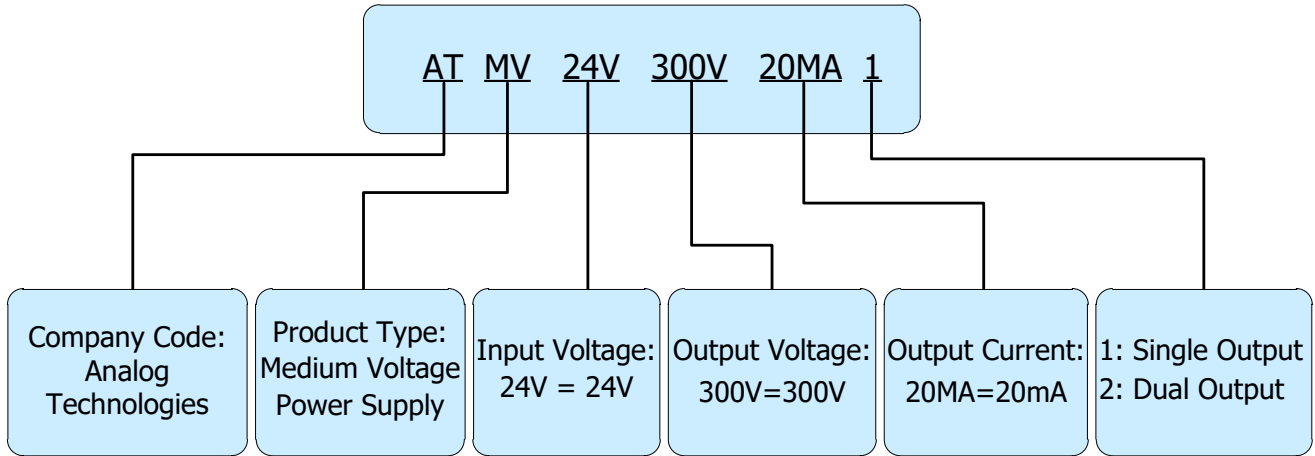


ORDERING INFORMATION


Figure 8. Naming Convention of ATMV24V300V20MA1

Part Number	Buy Now
ATMV24V300V20MA1	 *  *



*: both  and  are our online store icons. Our products can be ordered from either one of them with the same pricing and delivery time.

Table 4. ATMV24V300V20MA1 and Its Families

Product Model	Input Voltage		Output Voltage	Output Current	Efficiency	MAX. Capacitive Load
	Typ.	Range	V	mA	%	µF
ATMV12V50V160MA1	12	9 ~ 18	50	160	78	100
ATMV12V100V80MA1			100	80	76	100
ATMV12V200V40MA1			200	40	75	68
ATMV12V300V20MA1			300	20	74	47
ATMV12V400V10MA1			400	10	73	33
ATMV12V500V8MA1			500	8	72	22
ATMV12V600V6.7MA1			600	6.7	70	10
ATMV12V700V4.3MA1			700	4.3	68	4.7
ATMV24V300V20MA1	24	18 ~ 36	100	80	78	100
ATMV24V200V40MA1			200	40	77	68
ATMV24V300V20MA1			300	20	75	47
ATMV24V400V10MA1			400	10	74	33



Product Model	Input Voltage		Output Voltage	Output Current	Efficiency	MAX. Capacitive Load
	Typ.	Range	V	mA	%	µF
ATMV24V500V8MA1			500	8	73	22
ATMV24V600V6.7MA1			600	6.7	71	10
ATMV24V700V4.3MA1			700	4.3	70	4.7
ATMV12V50V80MA2	12	9 ~ 18	±50	±80	76	68
ATMV12V100V40MA2			±100	±40	75	68
ATMV12V150V20MA2			±150	±20	74	47
ATMV12V200V10MA2			±200	±10	73	33
ATMV12V250V8MA2			±250	±8.0	72	22
ATMV12V300V6.6MA2			±300	±6.6	70	10
ATMV24V50V80MA2			24	18 ~ 36	±50	±80
ATMV24V100V40MA2	±100	±40			77	68
ATMV24V150V20MA2	±150	±20			75	47
ATMV24V200V10MA2	±200	±10			74	33
ATMV24V250V8MA2	±250	±8.0			73	22
ATMV24V300V6.6MA2	±300	±6.6			71	10

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