



UMR-C SERIES

125 to 6000V, 20 to 30W
Standard DC/DC Modules



Features

- Capacitor Charging High Voltage Power Supplies
- Regulated Output Voltage from V_{OUT} Max to True Zero
- Wide Input Voltage Range
- Low Ripple
- Indefinite Output Short Circuit Protection
- Output Voltage and Current Monitors
- Fixed-Frequency, Low-Stored-Energy Design
- UL/cUL Recognized Component; CE Mark (LVD and RoHS)

Specifications

		Conditions		Value	Units
		20W	30W		
Input					
Voltage	Nominal	+24	+24		VDC
Voltage Range	Full Power	+23 to 30	+23 to 30		VDC
Voltage Range	Derated Power Range	+10 to 32	+10 to 32		VDC
Current	Standby/Disable	<20	<20		mA
Current	No Load, Max V_{OUT}	<80	<80		mA
Current	Full Load, Max V_{OUT}	<1000	<1500		mA
AC Ripple Current	Nominal Input, Full Load	<100	<100		mAp-p
Output					
Static Load Regulation	No Load to Full Load, Max V_{OUT}	<0.01			%VDC
Line Regulation	Nominal Input, Max V_{OUT} , Full Power	<0.08			%VDC
Stability	30-minute warmup, per 8h/per day	<0.01 / <0.02			%VDC
Programming & Controls					
Input Impedance	Nominal Input, Positive Models	1.0 to Signal Ground			M Ω
	Nominal Input, Negative Models	0.01 to V_{REF}			
Adjust Resistance	Typical Potentiometer Values	10K to 100K (Pot Across V_{REF} and Signal Ground, Wiper to Adjust)			Ω
Adjust Logic (V_{ADJ})	Positive Models	0 to +4.64 = 0 to 100% Rated Output			VDC
	Negative Models	+5 to +0.36 = 0 to 100% Rated Output			
Reference Voltage (V_{REF})	Temperature +25°C	+5 \pm 0.5%			VDC
Enable/Disable HV_{OUT}	Default HV Enabled	0 to +0.5 = Disabled; +2.4 to 32 = Enabled			VDC
Environmental					
Operating Temperature ¹	Case Temperature, Full Load, Max V_{OUT}	-40 to +65			°C
Temperature Coefficient	Over the Specified Temperature	\pm 50 (\pm 25 Optional)			PPM/°C
Thermal Shock	Mil-Std-810, Method 503-4, Proc. II	-40 to +65			°C
Storage Temperature	Non-Operating, Case Temperature	-55 to +105			°C
Humidity	All Conditions, Standard Package	0 to 95% Non-Condensing			-
Altitude	All Conditions, Standard Package	Sea Level through Vacuum			-
Shock	Mil-Std-810, Method 516.5, Proc IV	20			G
Vibration	Mil-Std-810, Method 514.5, Fig 514.5C-3	10			G

¹Typically, convection cooled. Units operating at full power might require additional cooling to maintain case temperature below 65°C. Damage to the power supply may occur if not appropriately cooled during use.

Part Number ³	Output Voltage VDC	Output Current mA	High Freq. Ripple ⁴ %Vp-p	Output Capacitance μF	I _{MON} Scaling ⁵ mA/V	V _{MON} Scaling ⁶ V
20W Models						
UMR-C-125*-20	0 to 125	160.0	<1	0.1000	1900	10:1 ±2%
UMR-C-250*-20	0 to 250	80.0	<1	0.0500	1000	10:1 ±2%
UMR-C-500*-20	0 to 500	40.0	<1	0.0330	506	10:1 ±2%
UMR-C-1000*-20	0 to 1000	20.0	<1	0.0330	244	100:1 ±2%
UMR-C-2000*-20	0 to 2000	10.0	<1	0.0010	130	100:1 ±2%
UMR-C-4000*-20	0 to 4000	5.0	<1	0.0034	67	100:1 ±2%
UMR-C-6000*-20	0 to 6000	3.3	<1	0.0026	49	100:1 ±2%
30W Models						
UMR-C-125*-30	0 to 125	240.0	<1	0.1000	2900	10:1 ±2%
UMR-C-250*-30	0 to 250	120.0	<1	0.0500	1400	10:1 ±2%
UMR-C-500*-30	0 to 500	60.0	<1	0.0330	740	10:1 ±2%
UMR-C-1000*-30	0 to 1000	30.0	<1	0.0330	400	100:1 ±2%
UMR-C-2000*-30	0 to 2000	15.0	<1	0.0010	212	100:1 ±2%
UMR-C-4000*-30	0 to 4000	7.5	<1	0.0034	86	100:1 ±2%
UMR-C-6000*-30	0 to 6000	5.0	<1	0.0026	57	100:1 ±2%

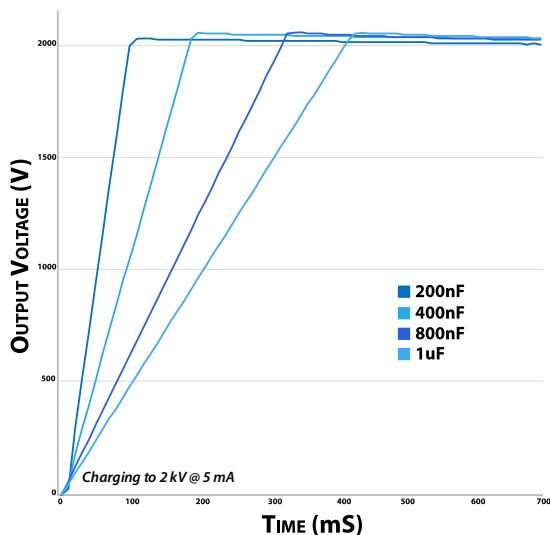
³For "*", substitute "P" for positive output or "N" for negative output

⁴1Hz to 1MHz

⁵Full Scale Signal

⁶Into 10MΩ Meter

Rise Time/Capacitor Charging



Maximum Safe Repetitive Discharge Rate:

$$\frac{C \cdot V_o^2}{2} F < 1W$$

Typical Rise Time:

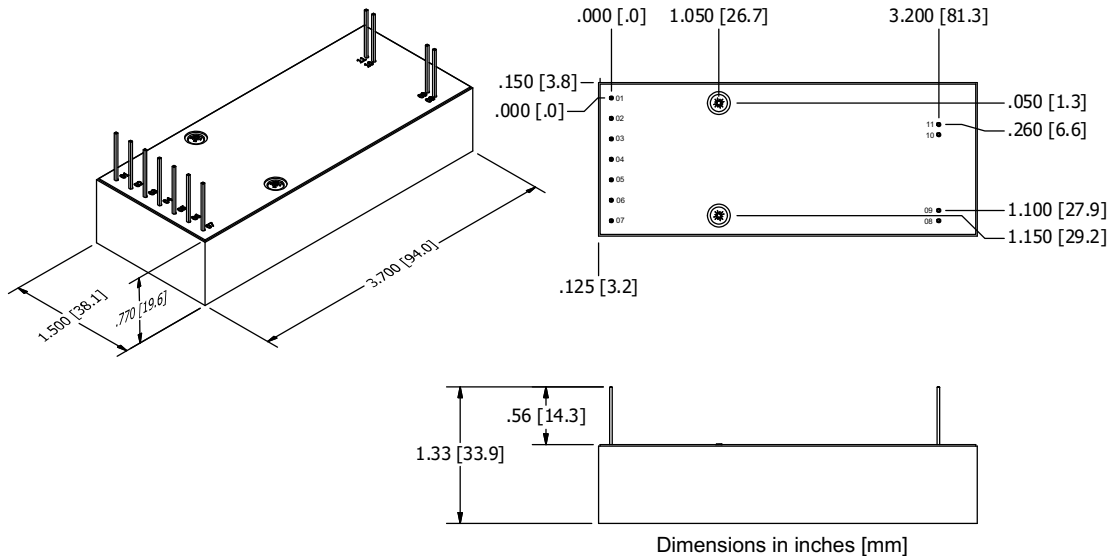
$$t_R = \frac{C + C_{ext}}{I_o} V_o$$

Minimum Rise Time is 10nS

Abbreviations:

- C Output Capacitance of Power Supply
- C_{ext} Capacitance of External Capacitor
- V_o Power Supply Output Voltage
- F Power Supply Discharge Frequency
- I_o Nominal Output Current
- t_R Rise Time

Mechanical Drawings and Pin Assignments



Mechanical Specifications	
Volume	4.3in ³ [70.5cm ³]
Weight	5.0oz [142g]
Case	DAP case certified to ASTM-D-5948
Pins	Pins 1-7 0.200in Spacing Pins 8-9, 10-11 0.100in Spacing

Tolerances	
Overall	0.050in [±1.27mm]
Pin to Pin	0.015in [±0.38mm]
Mounting	0.025in [±0.64mm]

Pin Assignments & Connections		
Pin 1	PWRGND ⁷	Input Power Ground Return
Pin 2	+VIN	Positive Power Input
Pin 3	IMON ⁷	Output Current Monitor
Pin 4	ENABLE	Enable/Disable
Pin 5	SIGGND	Signal Ground Return
Pin 6	VADJ ⁷	Voltage Adjust
Pin 7	VREF	Voltage Reference
Pin 8	HVRTN	High Voltage Ground Return
Pin 9	VMON	Output Voltage Monitor
Pin 10,11	HVOUT	High Voltage Output

⁷PWRGND may be labelled -VIN, IMON as IOUT, and VADJ as RMTADJ on some models.

Options

Append to Part #	Option Description	Not Compatible With
-H	Aluminum Heat Sink	E, C
-T	±25PPM/°C Temperature Coefficient ⁸	-
-W	Flying Lead for High Voltage Output	-
-M	Mu-Metal Shielding Over Case	-
-E	Eared Mounting Plate	H
-C	RF Tight Aluminum Case	E, H

⁸Operating Temperature is +10 to +45°C.

Certifications and Compliances

