



**CALL: 508-580-8515, EXT 1**

**30 Watt, MAC30 DC-DC Single, Dual and Triple Output Series**



**FEATURES**

- Wide Input Range 2:1
- Pick and Place Packaging
- High Efficiency to 89%
- External Trim
- -40°C to +105°C Operation
- 1500Vdc Isolation
- Open Frame Construction
- Surface Mount and Thru-Hole Types
- Remote On/Off
- Under-Voltage Lockout
- Overvoltage and Short Circuit Protection
- Integral Metal Substrate
- Floating or Common Auxiliaries

The MAC30 series of DC-DC converters have been designed as a surface-mount and thru-hole solution for a wide range of applications where light weight and ease of assembly are needed. Utilizing the latest thermal transfer techniques the MAC30 series packs up to 30 watts of power in 1.75" x 2.0" x .500" open frame construction, and operating temperatures of -40°C to +105°C. All models are designed to meet UL1950, CSA950 and EN 60950.

**MODEL SELECTION GUIDE**

MODEL NUMBER NOTE*****	INPUT VOLTAGE		Lin@Vin NOM		OUTPUT V1,V2/V3*****	OUTPUT;Note 7 CURRENT/MAX	PO/W	OUTPUT OVP	TYPICAL EFFICIENCY
	NOM	RANGE	FL	NL					
MAC30-12S2V5**	12Vdc	9-18	1.299	7mA	2.5	4.8A	12	3.9V	77%
MAC30-12S3V3**	12Vdc	9-18	1.667	7mA	3.30	4.8A	16	3.9V	80%
MAC30-12S05**	12Vdc	9-18	2.410	7mA	5.00	4.8A	24	6.8V	83%
MAC30-12S12**	12Vdc	9-18	2.353	7mA	12.00	2.0A	24	15V	85%
MAC30-12S15**	12Vdc	9-18	2.299	7mA	15.00	2.0A	24	18V	87%
MAC30-12T3D12**	12Vdc	9-18	2.033	7mA	3.3 & +/-12.00	3.6& +/--.33A	20	3.9/V1	82%
MAC30-12T3D15**	12Vdc	9-18	2.008	7mA	3.3 & +/-15.00	3.6 % +/--.26A	20	3.9/V1	83%
MAC30-12T3D24**	12Vdc	9-18	2.008	7mA	3.3 & +/-24.00	3.6 & +/--.17A	20	3.9/V1	83%
MAC30-12T5D12**	12Vdc	9-18	2.381	7mA	5.0 & +/-12.00	3.2 & +/--.33A	24	6.8/V1	84%
MAC30-12T5D15**	12Vdc	9-18	2.299	7mA	5.0 & +/-15.00	3.2 & +/--.26A	24	6.8/V1	87%
MAC30-12T5D24**	12Vdc	9-18	2.299	7mA	5.0 & +/-24.00	3.2 & +/--.17A	24	6.8/V1	87%
MAC30-24S2V5**	24Vdc	18-36	0.801	7mA	2.50	6.0A	15	3.9V	78%
MAC30-24S3V3**	24Vdc	18-36	1.029	7mA	3.30	6.0A	20	3.9V	81%
MAC30-24S05**	24Vdc	18-36	1.488	7mA	5.00	6.0A	30	6.8V	84%
MAC30-24S12**	24Vdc	18-36	1.453	7mA	12.00	2.5A	30	15V	86%
MAC30-24S15**	24Vdc	18-36	1.420	7mA	15.00	2.0A	30	18V	88%
MAC30-24S24**	24Vdc	18-36	1.420	7mA	24.00	1.25A	30	29.5V	88%
MAC30-24T3D12**	24Vdc	18-36	1.255	7mA	3.3 & +/-12.00	4.5 & +/--.42A	25	3.9/V1	83%
MAC30-24T3D15**	24Vdc	18-36	1.240	7mA	3.3 & +/-15.00	4.5 & +/--.33A	25	3.9/V1	84%
MAC30-24T3D24**	24Vdc	18-36	1.240	7mA	3.3 & +/-24.00	4.5& +/--.21A	25	3.9/V1	84%
MAC30-24T5D12**	24Vdc	18-36	1.471	7mA	5.0 & +/-12.00	4.0 & +/--.42A	30	6.8/V1	85%
MAC30-24T5D15**	24Vdc	18-36	1.420	7mA	5.0 & +/-15.00	4.0 & +/--.33A	30	6.8/V1	88%
MAC30-24T5D24**	24Vdc	18-36	1.420	7mA	5.0 & +/-24.00	4.0 & +/--.21A	30	6.8/V1	88%
MAC30-48S2V5**	48Vdc	36-75	0.396	7mA	2.50	6.0A	15	3.9V	79%
MAC30-48S3V3**	48Vdc	36-75	0.508	7mA	3.30	6.0A	20	3.9V	82%

MODEL NUMBER NOTE*****	INPUT VOLTAGE		Lin@Vin NOM		OUTPUT V1,V2/V3*****	OUTPUT;Note 7 CURRENT/MAX	PO/W	OUTPUT OVP	TYPICAL EFFICIENCY
	NOM	RANGE	FL	NL					
MAC30-48S05**	48Vdc	36-75	0.735	7mA	5.00	6.0A	30	6.8V	85%
MAC30-48S12**	48Vdc	36-75	0.718	7mA	12.00	2.5A	30	15V	87%
MAC30-48S15**	48Vdc	36-75	0.702	7mA	15.00	2.0A	30	18V	89%
MAC30-48T3D12**	48Vdc	36-75	0.620	7mA	3.3 & +/-12.00	4.5 & +/--.42	25	3.9/Vo1	84%
MAC30-48T3D15**	48Vdc	36-75	0.599	7mA	3.3 & +/-15.00	4.5 & +/--.33	25	3.9/Vo1	87%
MAC30-48T3D24**	48Vdc	36-75	0.599	7mA	3.3 & +/-24.00	4.5 & +/--.21	25	3.9/Vo1	87%
MAC30-48T5D1212**	48Vdc	36-75	0.718	7mA	5.0 & +/-12.00	4.0 & +/--.42	30	6.8/Vo1	87%
MAC30-48T5D15**	48Vdc	36-75	0.702	7mA	5.0 & +/-15.00	4.0 & +/--.33	30	6.8/Vo1	89%
MAC30-48T5D24**	48Vdc	36-75	0.702	7mA	5.0 & +/-24.00	4.0 & +/--.21	30	6.8/Vo1	89%

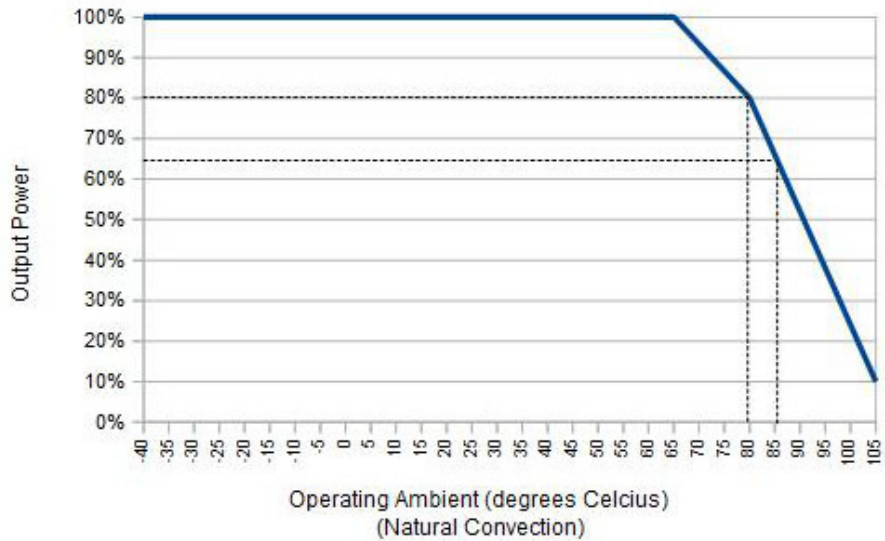
Note:\*\* Insert suffix: SM for Surface Mounting or TH for Thru-hole type Mounting.  
**MODIFICATIONS AND CUSTOMS AVAILABLE. CALL FACTORY:508-580-8515**

INPUT	
Input Voltage Range	2:1
Note/3	9-18Vdc/12V models, 18-36Vdc/24V models, 36-75Vdc/48V models
Input Filter	Pi Type
Under Voltage Lockout	8.5V/12V models, 16.5V/24V models, 32V/48V models
Remote On:	+5V or open, Ref.(-)Vin
Remote Off:	+0.7V Ref (-)Vin
Conducted Noise	EN55022, level A/Note 5

OUTPUT	
Output Power	30W continuous Max
Output Voltage/current	See Model table
Output Setting Accuracy, Singles	+/-1% Typ. +/-1.5% max.
Output Setting Accuracy, Aux	+/-3%
Load Variation Singles/FL-10%L	+/-0.5% Note 4,6
Load Variation Aux/FL-20%	+/-3% Balanced, V1/10%L-F1
Line Regulation	+/-0.5%/Vo1,+/-2% Aux
Total Error Band, Singles	+/-3%, Line/Load and Temp.
Total Error Band, Auxiliary Outputs	+/-10%, Io1,2 & 3@20%FL
Ripple and Noise, 20MHz BW	100mV, Vo1, 1%Aux.
Transient Response/FL-1/2L	2% deviation, 200uS
Temperature Coefficient	+/-0.1%°c
Short Circuit Protection	Indefinite, Modulated, Automatic Recovery

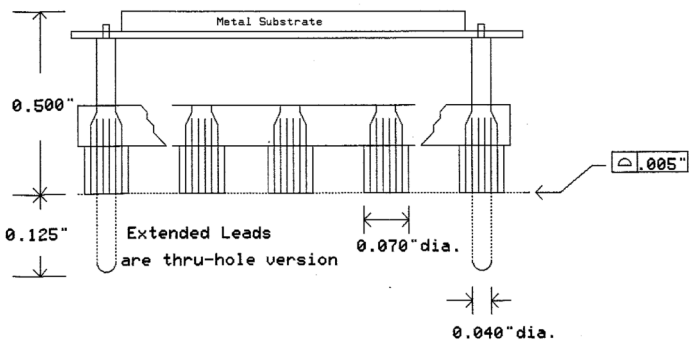
GENERAL	
Efficiency	See Model Table
Isolation Voltage	1500Vdc/1Min
Isolation Resistance	100M
Switching Frequency	350KHz
MBTF	1.0M hrs.MIL-HDBK-217F Ground Benign@25°C

ENVIRONMENTAL	
Operating Temperature Range	-40°C to +105°C
Operating Temperature Range	-40°C to +65°C@FL
Storage Temperature Range	-55°C to +125°C
Maximum Case Temperature	110C
Humidity	5% to 95% RH, Non-condensing
Cooling	Natural Convection
Processing:Note 2	230°C peak, 20 sec.

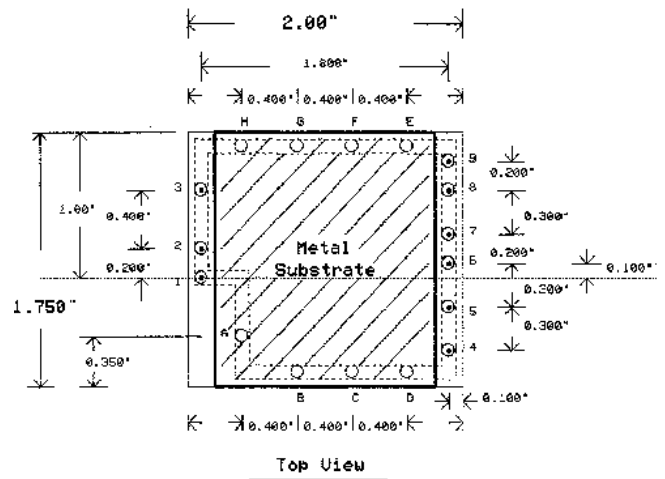


MECHANICAL	
Size	1.75"x 2.00"x 0.500"
Weight	24.0g
Mounting	SMD and Thru-hole types.
Case/Material	Open-frame, 94V-0 FR-4 P.C.B. with Bonded Aluminum Substrate

"Rail Pins" are alpha  
 "Input/Output" are numeric



PIN CONNECTIONS		
Pin Number	Single Outputs	Dual Outputs
1	+Vin	+Vin
2	-Vin	-Vin
3	ON/OFF	ON/OFF
4	N/C	+V2
5	N/C	Com.V2/V3
6	N/C	-V3
7	+Vo	+V1
8	-Vo	Com.V1
9	Trim	Trim



#### NOTES:

1. O.V.P. protection is across Vo1.
2. Consult factory for recommended reflow profile.
3. Typical start-up for 12Vin models is 9V. Maximum startup is 9.5V with full operation down to 9.0V
4. Operation is allowed to No-Load on single outputs, however operation below 10% load may cause ripple and noise to exceed spec.
5. External Capacitor required.
6. Auxiliary output regulation relies on cross coupling of output channels. A 10% minimum load is required on Vo1 for regulation.
7. Continuous Maximum Output current. (Operation at 150% of full current is allowed periodically / short term- Consult Factory)

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