DM Series

25/30W 2:1 Regulated Single & Dual output

Features

- Wide 2:1 Input Range
- Full SMD Technology
- 1500 VDC Isolation
- Efficiency up to 91%
- -40 ~ 85°C Operation Temperature Range
- Adjustable Output Voltage
- Remote On/Off Control (CTRL)
- Continuous Short Circuit Protection
- Over Current Protection
- Over Voltage Protection
- Over Temperature Protection
- Soft Start

The DM series is a family of cost effective 25/30W single & dual output DC-DC converters. These converters combine nickle-coated copper package in a 2"x1.6" case with high performance features such as Active Clamp Technology, continuous short circuit protection with automatic restart and tight line / load regulation. Devices are encapsulated using flame retardant resin. Input voltages of 12,24 and 48 with output voltage of 3.3 , 5, 12, 15, ±12, ±15Vdc. High performance features include high efficiency operation up to 91% and output voltage accuracy of ±1% maximum.

ALL SPECIFICATIONS ARE TYPICAL AT 25°C, NOMINAL INPUT AND FULL LOAD UNLESS OTHERWISE NOTED.

OUTPUT SPECIFICATIONS

Output Voltage Accuracy		±1%
Output Voltage Adjustability(Trim)		±10%, max.
Maximum Output Current		See table
Line Regulation		±0.5%, max.
Load Regulation(Io=10% to 100%) (1)		±0.5%, max.
Cross Regulation (Dual Output) (2)		±5%
Ripple&Noise (3)		75mVpk-pk, max.
Over Voltage Protection (Zener diode clamp)	3.3V output	3.9V
	5V output	6.2V
	12V output	15V
	15V output	18V
	±12V output	±15V
	±15V output	±18V
Over Current Protection		120% of FL, typ.
Short Circuit Protection		Indefinite(hiccup) (Automatic Recovery)
Temperature Coefficient		±0.02%/°C
Capacitive Load (4)		See table
Transient Recovery Time (5)		200us, typ.
Transient Response Deviation(5)		±3%, max.

INPUT SPECIFICATION S

Input Voltage Range		See table
Under Voltage Lockout		
12V Models	Module ON / OFF	8.6Vdc / 7.9Vdc, typ.
24V Models	Module ON / OFF	17.6Vdc / 16Vdc, typ.
48V Models	Module ON / OFF	33.5Vdc / 30.5Vdc, typ.
Start up Time (Nominal Vin and constant resistive load)		20mS, typ.
Input Filter		Pi Type
Input Current(No-Load)		See table, typ.
Input Current(Full-Load)		See table, max.
Input Reflected Ripple Current(6)		20mApk-pk, typ.

Remote On/Off (CTRL)

ON: 2.5 ... 5.5Vdc or open circuit

OFF: -0.7 ... 0.8Vdc or Short circuit pin2 and pin 3

OFF idle current: 2.5 mA, typ

PHYSICAL SPECIFICATIONS

Case Material	Nickel-coated Copper
Pin Material	¨ 1.0mm Brass Solder-coated
Potting Material	Epoxy (UL94V-0 rated)
Weight	48.0g
Dimensions	2.00"x1.60"x0.40"

GENERAL SPECIFICATIONS

Efficiency	See table, typ.
I/O Isolation Voltage(3 sec)	
Input/Output	1500Vdc
Case/Input & Output	1000Vdc
Isolation Resistance	1000 M Ohm, min.
Isolation Capacitance	1200 pF, typ.
Switching frequency	270kHz, typ.
Humidity	95% rel H
Reliability Calculated MTBF(MIL-HDBK-217 F)	>1 Mhrs
Safety Standard	IEC/EN 60950-1
Safety Approvals	TUV,CB

EMC CHARACTERISTICS

Radiated Emissions	EN55022	CLASS A
Conducted Emissions(7)	EN55022	CLASS A
ESD	IEC61000-4-2	Perf. Criteria A
RS	IEC61000-4-3	Perf. Criteria A
EFT(8)	IEC61000-4-4	Perf. Criteria A
Surge (8)	IEC61000-4-5	Perf. Criteria A
CS	IEC61000-4-6	Perf. Criteria A
PFMF	IEC61000-4-8	Perf. Criteria A

ENVIRONMENTAL SPECIFICATIONS

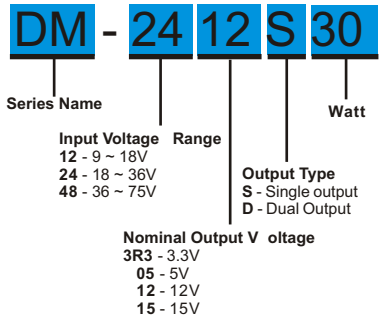
Operating Ambient Temperature	-40°C ~ +85°C(See Derating Curve) -40°C ~ +60°C(For 100% load)
Maximum Case Temperature	100°C
Storage Temperature	-55°C ~ +125°C
Over Temperature Protection (Case)	110 °C, typ.
Cooling	Nature Convection

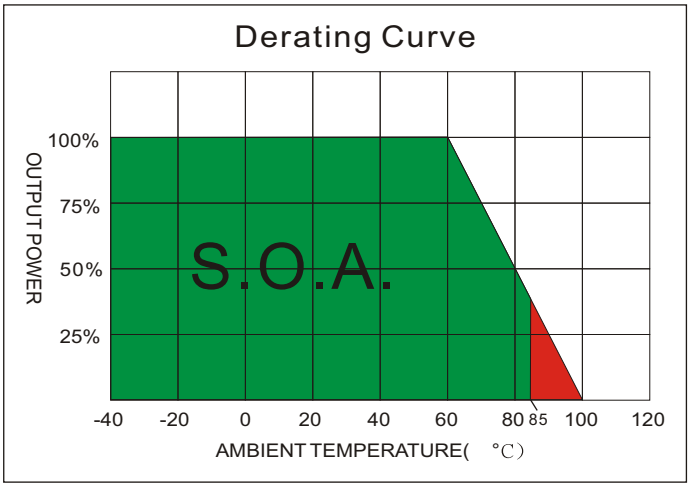
ABSOLUTE SPECIFICATIONS (9)

These are stress ratings. Exposure of devices to any of these conditions may adversely affect long-term reliability.

Input Surge V oltage (100mS)	
12 Models	25 Vdc ,max.
24 Models	50 Vdc ,max.
48 Models	100 Vdc ,max.
Soldering Temperature (1.5mm from case 10 sec. Max.)	260 °C max .

PART NUMBER STRUCTURE



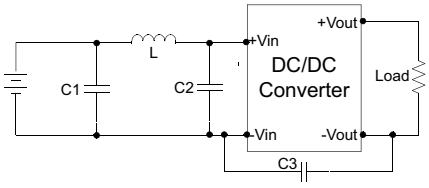


MODEL SELECTION GUIDE

MODEL NUMBER	INPUT Voltage Range (Vdc)	INPUT Current No-Load (mA)	INPUT Current Full Load (mA)	OUTPUT Voltage (Vdc)	OUTPUT Current Min. load (mA)	OUTPUT Current Full load (mA)	EFFICIENCY @FL(%)	Capacitor Load(uF)
DM-123R3S25	9-18	30	1867	3.3	0	5500	83	15000
DM-1205S25	9-18	30	2480	5	0	5000	86	10000
DM-1212S30	9-18	30	2841	12	0	2500	90	2200
DM-1215S30	9-18	30	2841	15	0	2000	90	1000
DM-243R3S25	18-36	25	922	3.3	0	5500	84	15000
DM-2405S25	18-36	25	1225	5	0	5000	87	10000
DM-2412S30	18-36	25	1404	12	0	2500	91	2200
DM-2415S30	18-36	25	1404	15	0	2000	91	1000
DM-483R3S25	36-75	20	461	3.3	0	5500	84	15000
DM-4805S25	36-75	20	613	5	0	5000	87	10000
DM-4812S30	36-75	20	702	12	0	2500	91	2200
DM-4815S30	36-75	20	702	15	0	2000	91	1000
DM-1212D30	9-18	30	2841	±12	0	±1250	90	±1000
DM-1215D30	9-18	30	2841	±15	0	±1000	90	±680
DM-2412D30	18-36	25	1404	±12	0	±1250	91	±1000
DM-2415D30	18-36	25	1404	±15	0	±1000	91	±680
DM-4812D30	36-75	20	710	±12	0	±1250	90	±1000
DM-4815D30	36-75	20	710	±15	0	±1000	90	±680

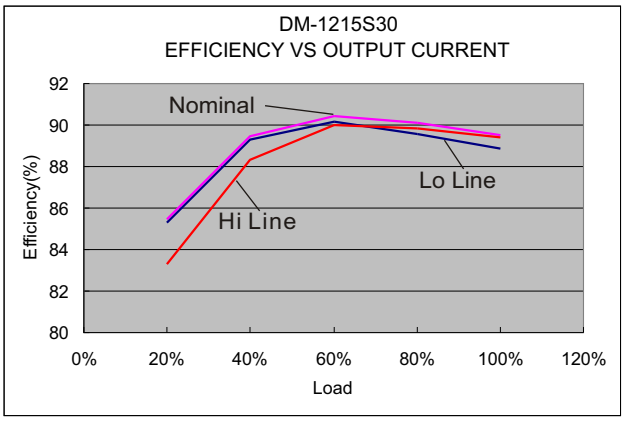
NOTE

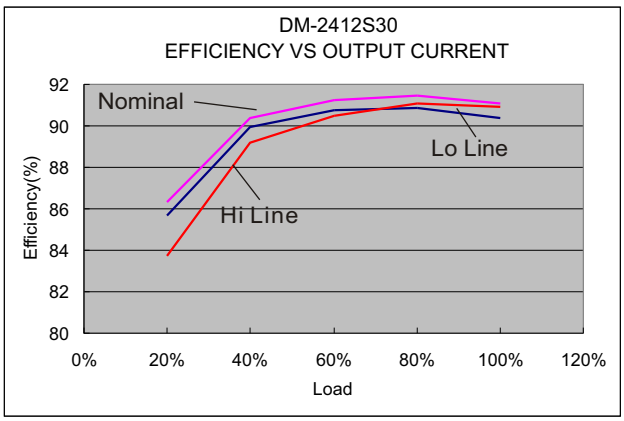
1. Operation between no-load and 10% load conditions will not damage the module, but it may not meet all specifications listed.
2. One load is 25% to 100% load, the other load is 100% load, the output voltage variable rate is within ±5%.
3. Measured with 20MHz bandwidth and 1.0uF ceramic capacitor.
4. Tested by minimal Vin and constant resistive load.
5. Tested by normal Vin and 25% load step change (75%-50%-25% of Io).
6. Measured Input reflected ripple current with a simulated source inductance of 12uH.
7. Input filter components (C1, C2, L) are used to help meet conducted emissions requirement for the module.
   These components should be mounted as close as possible to the module; and all leads should be minimized to decrease radiated noise.
8. An external filter capacitor is required if the module has to meet IEC61000-4-4 and IEC61000-4-5.
   The filter capacitor ZimTec Electronics suggest: Nichicon FW series, 1000uF/100V.
9. Exceeding the absolute ratings of the unit could cause damage.
   It is not allowed for continuous operating.

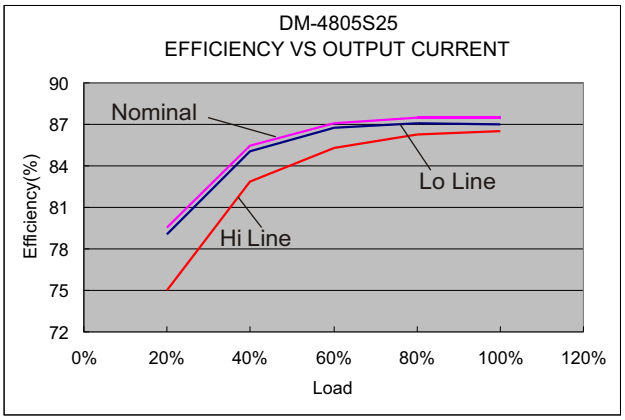


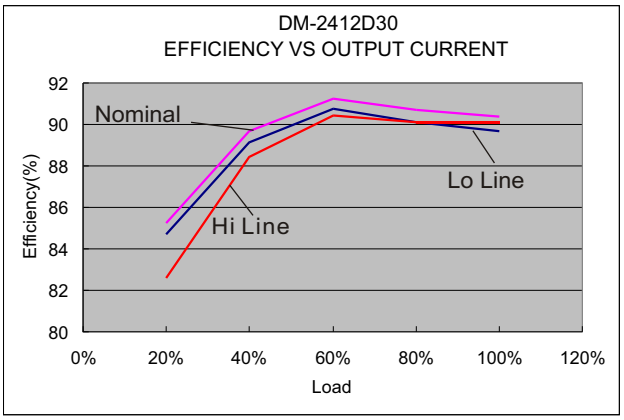
	C1	L	C2	C3
DM-12XXXXX	330uF, 100V	12uH	100uF,100V	N/A
DM-24XXXXX	330uF, 100V	12uH	100uF,100V	N/A
DM-48XXXXX	330uF, 100V	12uH	100uF,100V	1000pF/2KV

The models listed above is just for standard type. If you need the special specification product, please contact our service member by telephone presented in shortform cover or e-mail to : info@zimtec-electronics.de

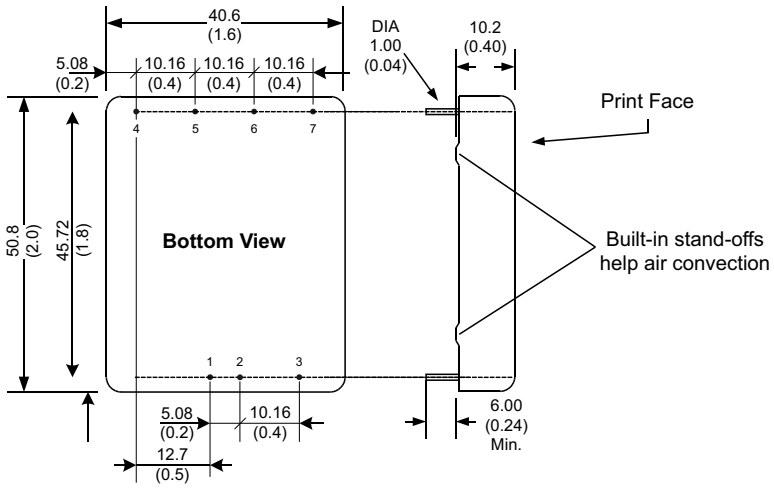








MECHANICAL SPECIFICATIONS

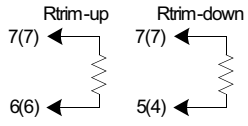


PIN CONNECTIONS		
PIN NUMBER	SINGLE	DUAL
1	+Vin	+Vin
2	-Vin	-Vin
3	CTRL	CTRL
4	No pin	+Vout
5	+Vout	Com
6	-Vout	-Vout
7	Trim	Trim

All dimensions are typical in millimeters (inches).
1. Pin diameter: 1.0 ±0.05 (0.04 ±0.002)
2. Pin pitch and length tolerance: ±0.35 (±0.014)
3. Case Tolerance: ±0.5 (±0.02)

EXTERNAL OUTPUT TRIMMING

Output can be externally trimmed by using the method as below. ( ) for dual output trim.



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