

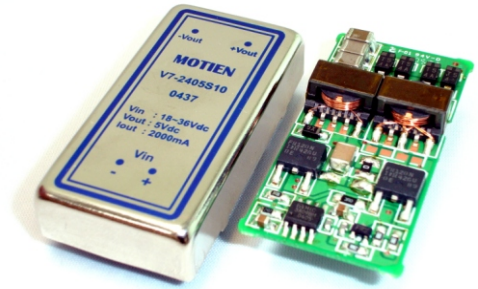
# V7 - 10W Series



10W 2:1 Regulated Single & Dual output

## Features

- Wide 2:1 Input Range
- Full SMD Technology
- 1500 VDC Isolation
- Continuous Short Circuit Protection
- Efficiency up to 86%
- -40 ~ 85°C Operation Temperature Range
- EMI Complies With EN55022 Class A



The V7 series is a family of cost effective 10W single & dual output DC-DC converters. These converters are made with nickle-coated brass case in a 2"x1" with high performance features such as 1500 VDC input/output isolation voltage, continuous short circuit protection with automatic restart and tight line / load regulation. Devices are encapsulated by using flame retardant resin. Input voltages of 12, 24 and 48 with output voltage of 3.3, 5, 7.2, 9, 12, 15, 18, 24, ±3.3, ±5, ±7.2, ±9, ±12, ±15, ±18, ±24 Vdc. High performance features include high efficiency operation up to 86% and output voltage accuracy of ±1% maximum.

All specifications typical at Ta=25°C, nominal input voltage and full load unless otherwise specified

OUTPUT SPECIFICATIONS	
Voltage accuracy	±1%
Line regulation	±0.5%
Load regulation (10% to 100% Loading)	±0.5%
Ripple & noise(20 MHz bandwidth)(1)	100mV pk-pk
Over-current protection	140% of max. Iout
Short circuit protection	Indefinite(Automatic Recovery)
Temperature coefficient	±0.02%/°C
Capacitor load(2)	See table

INPUT SPECIFICATIONS	
Voltage Range	See table
Start up Time(Nominal Vin and constant resistive load)	20mS, typ
Max. Input Current	See table
No-Load Input Current	See table
Input Filter	Capacitors
Input Reflected Ripple Current(3)	35mA pk-pk

GENERAL SPECIFICATIONS	
Efficiency	See table
I/O Isolation Voltage(3 sec)	
Input/Output	1500Vdc
Case/Input & Output	1000Vdc
I/O Isolation Capacitance	500 pF Typ.
I/O Isolation Resistance	1000M Ohm
Switching Frequency	Typical 200kHz
Humidity	95% rel H
Reliability Calculated MTBF(MIL-HDBK-217 F)	>1.121 Mhrs
Safety Standard : (designed to meet)	IEC 60950-1:2001

EMC SPECIFICATIONS		
Radiated Emissions	EN55022	CLASS A
	FCC 47 CFR Part 15 Subpart A	CLASS A
ESD	IEC 61000-4-2	Perf. Criteria B
RS	IEC 61000-4-3	Perf. Criteria A

PHYSICAL SPECIFICATIONS	
Case Material	Nickel-coated Brass
Pin Material	Ø1.0mm Brass Solder-coated
Potting Material	Epoxy (UL94V-0 rated)
Weight	30.0g
Dimensions	2.00"x1.00"x0.40"

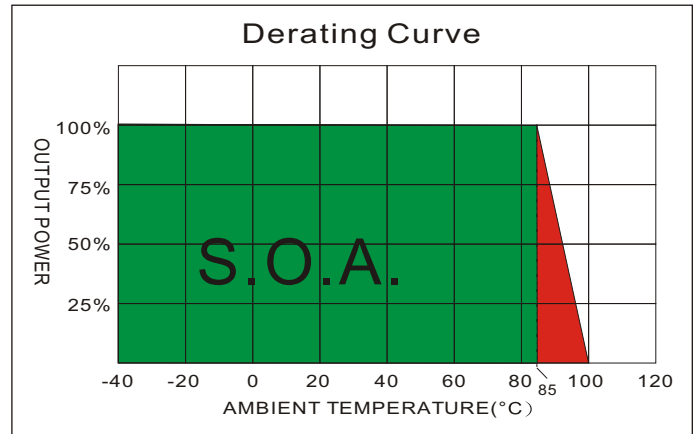
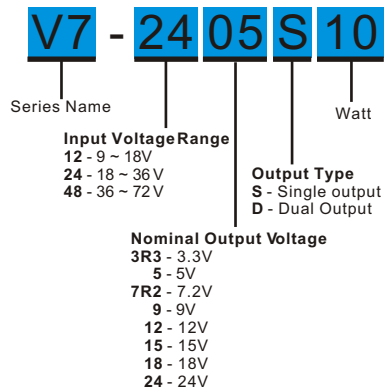
ENVIRONMENT SPECIFICATIONS	
Operating Temperature	-40°C~85°C(See Derating Curve)
Maximum Case Temperature	100°C
Storage Temperature	-40°C~125°C
Cooling	Nature Convection

ABSOLUTE MAXIMUM RATINGS(4)	
These are stress ratings. Exposure of devices to any of these conditions may adversely affect long-term reliability.	
Input Voltage(100mS)	
12 Modes	-0.7~24 Vdc
24 Modes	-0.7~40 Vdc
48 Modes	-0.7~80 Vdc
Lead Soldering Temperature (1.5mm from case 10sec.)	260°C

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## V7 - 10W 2:1 Regulated Single & Dual output

### PARTNUMBER STRUCTURE



## MODEL SELECTION GUIDE

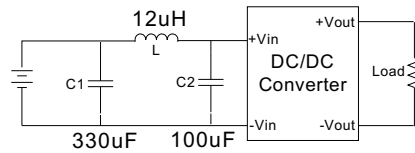
MODEL NUMBER	INPUT Voltage Range (Vdc)	INPUT Current		OUTPUT Voltage (Vdc)	OUTPUT Current		EFFICIENCY @FL(%)	Capacitor Load(uF)
		No-Load (mA)	Full Load (mA)		Min. load (mA)	Full load (mA)		
V7-123R3S10	9-18	30	705	3.3	200	2000	78	2200
V7-1205S10	9-18	30	1016	5	200	2000	82	2200
V7-127R2S10	9-18	30	1004	7.2	138	1388	83	1000
V7-1209S10	9-18	30	1004	9	111	1111	83	1000
V7-1212S10	9-18	30	992	12	83	833	84	680
V7-1215S10	9-18	30	992	15	66	666	84	470
V7-1218S10	9-18	30	980	18	55	555	85	470
V7-1224S10	9-18	30	980	24	41	416	85	330
V7-123R3D10	9-18	30	1068	±3.3	±100	±1000	78	±1000
V7-1205D10	9-18	30	1016	±5	±100	±1000	82	±1000
V7-127R2D10	9-18	30	1004	±7.2	±69	±694	83	±680
V7-1209D10	9-18	30	992	±9	±55	±555	84	±470
V7-1212D10	9-18	30	992	±12	±41	±416	84	±470
V7-1215D10	9-18	30	980	±15	±33	±333	85	±330
V7-1218D10	9-18	30	980	±18	±27	±277	85	±220
V7-1224D10	9-18	30	980	±24	±20	±208	85	±220
V7-243R3S10	18-36	25	352	3.3	200	2000	78	2200
V7-2405S10	18-36	25	508	5	200	2000	82	2200
V7-247R2S10	18-36	25	502	7.2	138	1388	83	1000
V7-2409S10	18-36	25	496	9	111	1111	84	1000
V7-2412S10	18-36	25	496	12	83	833	84	680
V7-2415S10	18-36	25	490	15	66	666	85	470
V7-2418S10	18-36	25	490	18	55	555	85	470
V7-2424S10	18-36	25	484	24	41	416	86	330
V7-243R3D10	18-36	25	352	±3.3	±100	±1000	78	±1000
V7-2405D10	18-36	25	508	±5	±100	±1000	82	±1000
V7-247R2D10	18-36	25	502	±7.2	±69	±694	83	±680
V7-2409D10	18-36	25	502	±9	±55	±555	83	±470
V7-2412D10	18-36	25	496	±12	±41	±416	84	±470
V7-2415D10	18-36	25	496	±15	±33	±333	84	±330
V7-2418D10	18-36	25	490	±18	±27	±277	85	±220
V7-2424D10	18-36	25	490	±24	±20	±208	85	±220

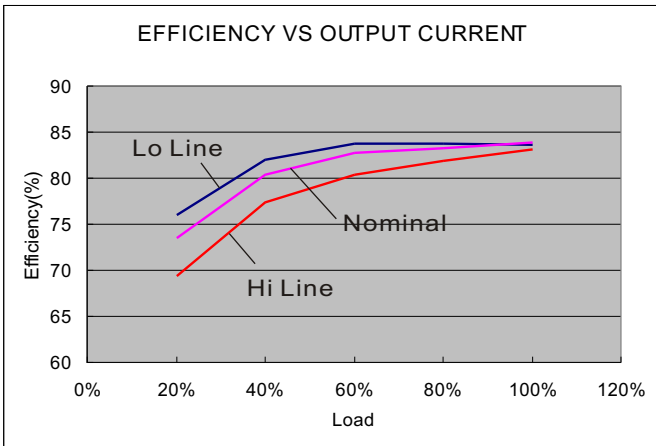
## V7 - 10W 2:1 Regulated Single & Dual output

MODEL NUMBER	INPUT Voltage Range (Vdc)	INPUT Current		OUTPUT Voltage (Vdc)	OUTPUT Current		EFFICIENCY @FL(%)	Capacitor Load(uF)
		No-Load (mA)	Full Load (mA)		Min. load (mA)	Full load (mA)		
V7-483R3S10	36-72	20	176	3.3	200	2000	78	2200
V7-4805S10	36-72	20	251	5	200	2000	83	2200
V7-487R2S10	36-72	20	251	7.2	138	1388	83	1000
V7-4809S10	36-72	20	248	9	111	1111	84	1000
V7-4812S10	36-72	20	248	12	83	833	84	680
V7-4815S10	36-72	20	248	15	66	666	84	470
V7-4818S10	36-72	20	245	18	55	555	85	470
V7-4824S10	36-72	20	245	24	41	416	86	330
V7-483R3D10	36-72	20	176	±3.3	±100	±1000	78	±1000
V7-4805D10	36-72	20	254	±5	±100	±1000	82	±1000
V7-487R2D10	36-72	20	248	±7.2	±69	±694	84	±680
V7-4809D10	36-72	20	248	±9	±55	±555	84	±470
V7-4812D10	36-72	20	245	±12	±41	±416	85	±470
V7-4815D10	36-72	20	245	±15	±33	±333	85	±330
V7-4818D10	36-72	20	242	±18	±27	±277	86	±220
V7-4824D10	36-72	20	242	±24	±20	±208	86	±220

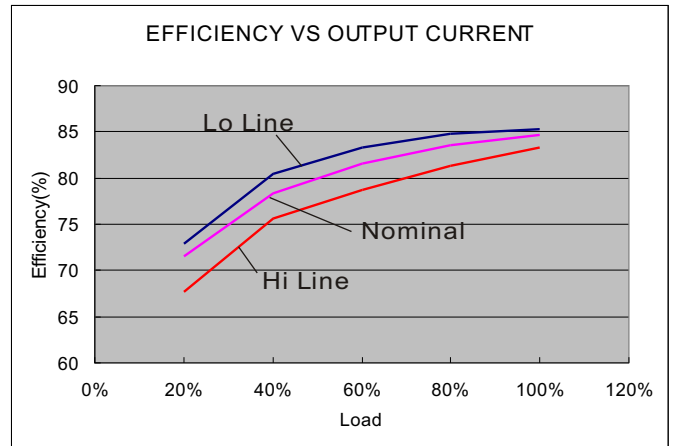
### NOTE

1. Ripple/Noise measured with 20MHz bandwidth.
2. Tested by minimal  $V_{in}$  and constant resistive load.
3. Measured Input reflected ripple current with a simulated source inductance of 12uH.
4. Exceeding the absolute ratings of the unit could cause damage. It is not allowed for continuous operating.
5. Operation under no-load conditions will not damage these devices, however they may not meet all listed specifications.
6. Suggest adding input external filter (C1, C2, L) to meet conducted emissions (En55022 class A)

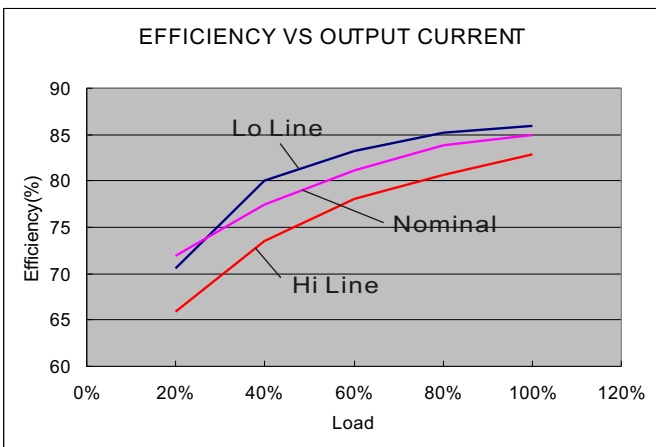




12 Models

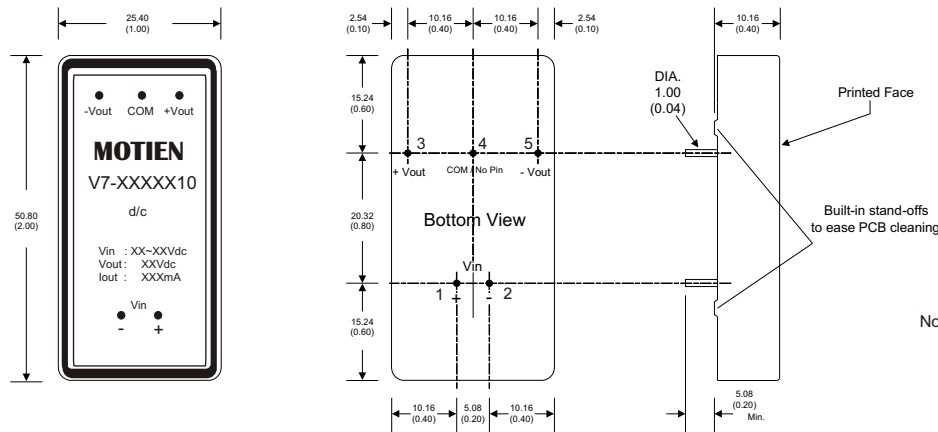


24 Models



48 Models

**MECHANICAL SPECIFICATIONS**



PIN CONNECTIONS		
PIN NUMBER	SINGLE	DUAL
1	+V Input	+V Input
2	-V Input	-V Input
3	+V Output	+V Output
4	N.P.	Common
5	-V Output	-V Output

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