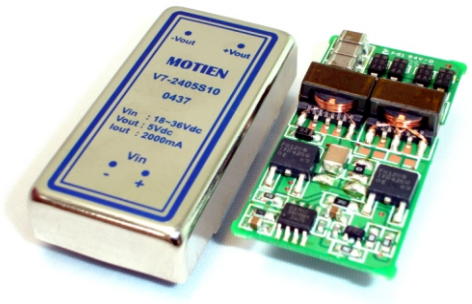
V7 - 15W Series

MOTIEN TECHNOLOGY

15W 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 87%
- -40 ~ 85°C Operation Temperature Range
- EMI Complies With EN55022 Class A



The V7 series is a family of cost effective 15W 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 87% 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	470 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

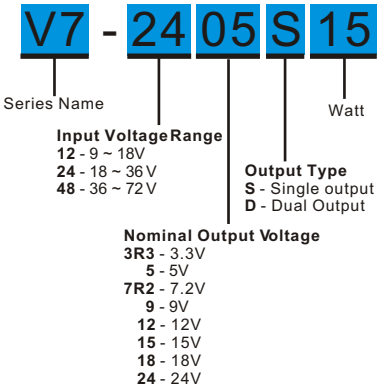
EMC SPECIFICATIONS		
Radiated Emissions	EN55022	CLASS A
	FCC 47 CFR Part 15 Subpart A	CLASS A
ESD	IEC 61000-4-2	Perf. Criteria B
RS	IEC 61000-4-3	Perf. Criteria A

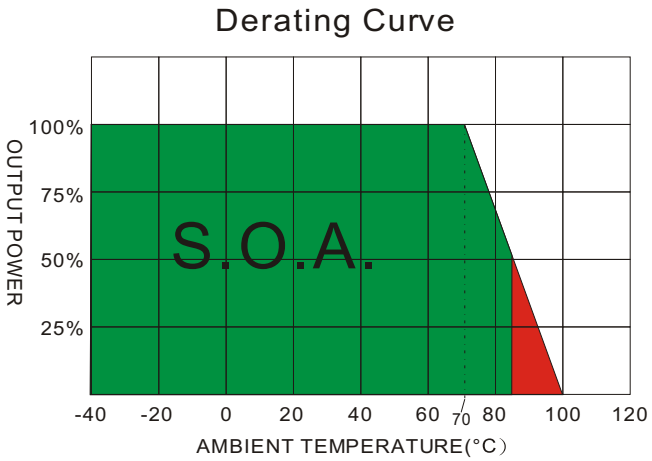
PHYSICAL SPECIFICATIONS	
Case Material	Nickel-coated Brass
Pin Material	Ø1.0mm Brass Solder-coated
Potting Material	Epoxy (UL94V-0 rated)
Weight	30.0g
Dimensions	2.00"x1.00"x0.40"

ENVIRONMENT SPECIFICATIONS	
Operating Temperature	-40°C~85°C (See Derating Curve) -40°C~70°C (For 100% load)
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

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)
V7-123R3S15	9-18	30	1031	3.3	300	3000	80	3300
V7-1205S15	9-18	30	1524	5	300	3000	82	3300
V7-127R2S15	9-18	30	1506	7.2	208	2083	83	2200
V7-1209S15	9-18	30	1470	9	166	1666	85	1000
V7-1212S15	9-18	30	1470	12	125	1250	85	1000
V7-1215S15	9-18	30	1470	15	100	1000	85	680
V7-1218S15	9-18	30	1470	18	83	833	85	470
V7-1224S15	9-18	30	1453	24	62	625	86	470
V7-123R3D15	9-18	30	1562	±3.3	±150	±1500	80	±1000
V7-1205D15	9-18	30	1524	±5	±150	±1500	82	±1000
V7-127R2D15	9-18	30	1506	±7.2	±104	±1041	83	±680
V7-1209D15	9-18	30	1488	±9	±83	±833	84	±470
V7-1212D15	9-18	30	1488	±12	±62	±625	84	±470
V7-1215D15	9-18	30	1488	±15	±50	±500	84	±330
V7-1218D15	9-18	30	1470	±18	±41	±416	85	±220
V7-1224D15	9-18	30	1470	±24	±31	±312	85	±220
V7-243R3S15	18-36	25	515	3.3	300	3000	80	3300
V7-2405S15	18-36	25	744	5	300	3000	84	3300
V7-247R2S15	18-36	25	744	7.2	208	2083	84	2200
V7-2409S15	18-36	25	735	9	166	1666	85	1000
V7-2412S15	18-36	25	735	12	125	1250	85	1000
V7-2415S15	18-36	25	726	15	100	1000	86	680
V7-2418S15	18-36	25	726	18	83	833	86	470
V7-2424S15	18-36	25	718	24	62	625	87	470
V7-243R3D15	18-36	25	515	±3.3	±150	±1500	80	±1000
V7-2405D15	18-36	25	753	±5	±150	±1500	83	±1000
V7-247R2D15	18-36	25	744	±7.2	±104	±1041	84	±680
V7-2409D15	18-36	25	735	±9	±83	±833	85	±470
V7-2412D15	18-36	25	726	±12	±62	±625	86	±470
V7-2415D15	18-36	25	726	±15	±50	±500	86	±330
V7-2418D15	18-36	25	718	±18	±41	±416	87	±220
V7-2424D15	18-36	25	718	±24	±31	±312	87	±220

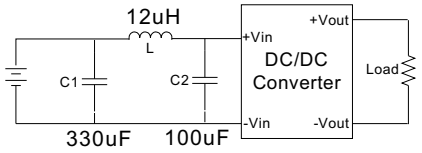
The models listed above is just for standard type. If you need the special specification product, please contact our service member by telephone presented in shortform cover or e-mail to : sales@motien.com.tw

V7 - 15W 2:1 Regulated Single & Dual output

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)
V7-483R3S15	36-72	20	257	3.3	300	3000	80	3300
V7-4805S15	36-72	20	372	5	300	3000	84	3300
V7-487R2S15	36-72	20	372	7.2	208	2083	84	2200
V7-4809S15	36-72	20	367	9	166	1666	85	1000
V7-4812S15	36-72	20	363	12	125	1250	86	1000
V7-4815S15	36-72	20	359	15	100	1000	87	680
V7-4818S15	36-72	20	359	18	83	833	87	470
V7-4824S15	36-72	20	359	24	62	625	87	470
V7-483R3D15	36-72	20	257	±3.3	±150	±1500	80	±1000
V7-4805D15	36-72	20	372	±5	±150	±1500	84	±1000
V7-487R2D15	36-72	20	372	±7.2	±104	±1041	84	±680
V7-4809D15	36-72	20	367	±9	±83	±833	85	±470
V7-4812D15	36-72	20	363	±12	±62	±625	86	±470
V7-4815D15	36-72	20	359	±15	±50	±500	87	±330
V7-4818D15	36-72	20	359	±18	±41	±416	87	±220
V7-4824D15	36-72	20	359	±24	±31	±312	87	±220

NOTE

1.Ripple/Noise measured with 20MHz bandwidth.
2.Tested by minimal Vin 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)



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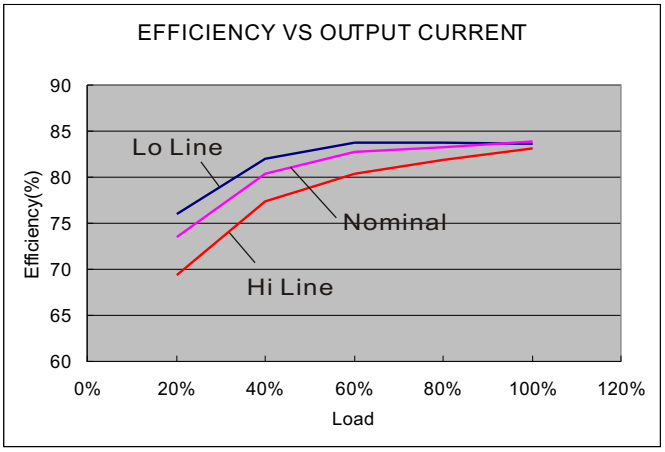
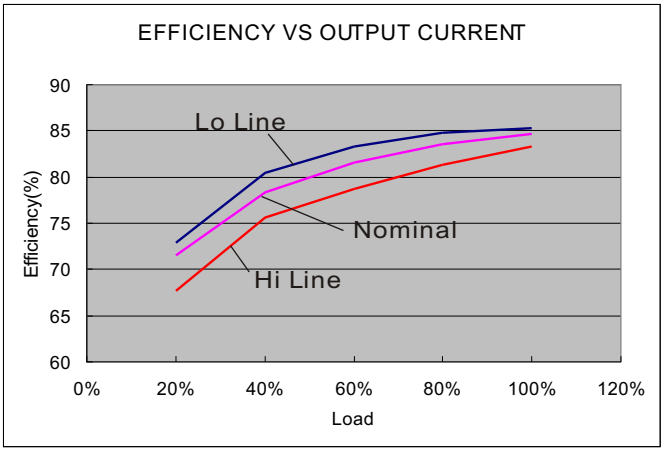
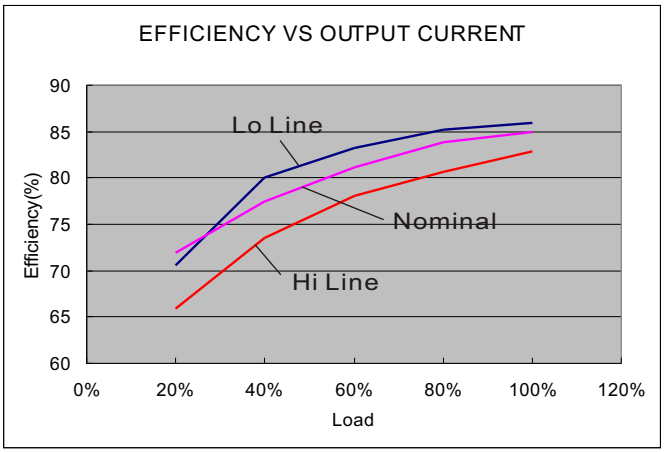


12 Models

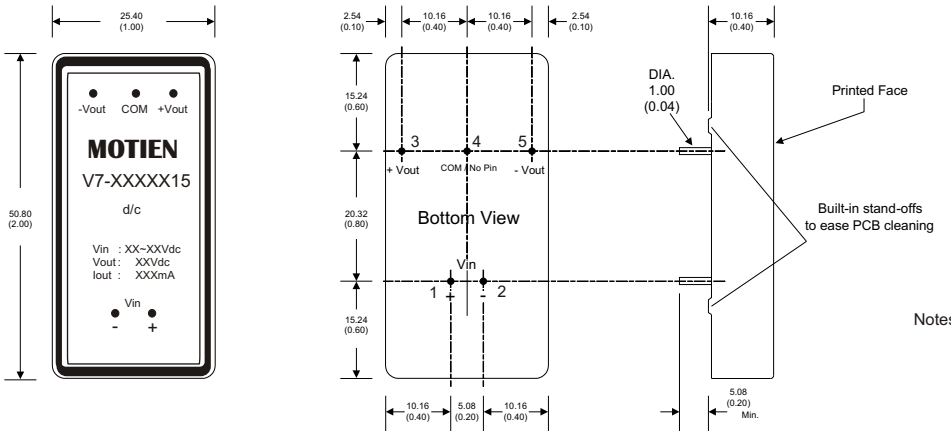


24 Models



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)

MOTIEN ISO 9001:2000 REGISTERED
No. 9, Keji 2nd Rd., Technology Industrial Park, Tainan City 70955, Taiwan
Tel: 886-6-384 2366(Rep.) Fax: 886-6-384 2399
Website : www.motien.com.tw Email : sales@motien.com.tw

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