ETA-USA

HIGH QUALITY SWITCHING POWER SUPPLIES

DC/DC SWITCHING POWER SUPPLY
DC INPUT 12,24,48, 110
DUAL OUTPUT
45WATTS

VTB-WCx/VTB-WD SERIES

Dimension: 96W × 160L × 33H

General Description

VT B x W C(D) x

- VT: Series Name
- B: Wattage: B...50W
- x: OutPut Voltage
- W: Dual Output
- C(D): DC Input Range C: 12,24,48 / D: 110
- x: Input Voltage

Features

1. Variety of Models
2. Chassis mount type
3. Compact and High Efficiency

DC INPUT: 12V

Input Characteristics	Unit	VTB21FWC 12	VTB21FWC 12B	VTB22FWC 12	VTB22FWC 12B	VTB23FWC 12	VTB24FWC 12	VTB24FWC 12B
Input Voltage	Vdc	DC 12V						
Input Voltage Range	Vdc	DC 9.2V-16V						
Inrush Current	A	Not Specified						
Efficiency (typical) *1	%	78	84	82	81	83	73	81
MTBF	H	500'000						
Switching Frequency	kHz	40 Fix	40 Fix	40 Fix	40 Fix	40 Fix	40 Fix	40 Fix

DC INPUT: 24V

Input Characteristics	Unit	VTB21FWC 24	VTB21FWC 24B	VTB22FWC 24	VTB22FWC 24B	VTB23FWC 24	VTB24FWC 24	VTB24FWC 24B
Input Voltage	Vdc	DC 24V						
Input Voltage Range	Vdc	DC 19-32V						
Inrush Current	A	Not Specified						
Efficiency (typical) *1	%	79	83	83	83	84	79	79
MTBF	H	500'000						
Switching Frequency	kHz	40 Fix	40 Fix	40 Fix	40 Fix	40 Fix	40 Fix	40 Fix

DC INPUT: 48V

Input Characteristics	Unit	VTB21FWC 48	VTB21FWC 48B	VTB22FWC 48	VTB22FWC 48B	VTB23FWC 48	VTB24FWC 48	VTB24FWC 48B
Input Voltage	Vdc	DC 48V						
Input Voltage Range	Vdc	DC 38-63V						
Inrush Current	A	Not Specified						
Efficiency (typical) *1	%	76	83	81	81	83	79	80
MTBF	H	500'000						
Switching Frequency	kHz	40 Fix	40 Fix	40 Fix	40 Fix	40 Fix	40 Fix	40 Fix

DC INPUT: 110V

Input Characteristics	Unit	VTB21FWD	VTB21FWD B	VTB22FWD	VTB22FWD B	VTB23FWD	VTB24FWD	VTB24FWD B
Input Voltage	Vdc	DC 110V						
Input Voltage Range	Vdc	DC 85-140V						
Inrush Current	A	20A (maximum)						
Efficiency (typical) *1	%	76	83	81	81	83	79	80
MTBF	H	500'000						
Switching Frequency	kHz	40 Fix	40 Fix	40 Fix	40 Fix	40 Fix	40 Fix	40 Fix

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VTB-WC / VTB-WD

Output Characteristic	Unit	Models													
		VTB21FWCx / FWD		VTM21FWCxB / FWDB		VTM22FWCx / FWD		VTM22FWCxB / FWDB		VTM23FWCx / FWD		VTM24FWCx / FWD		VTM24FWCxB / FWDB	
Output Voltage	V	5	24	24	5	12	12	12	12	15	15	5	12	12	5
Output Current 45W at horizontal mount (Vin=12)	A	0.5	0.75	1.5	1.4	2.0	1.5	3.0	0.6	1.5	1.3	5.0	1.5	3.0	1.4
25W at horizontal mount (Vin=24,48)		0.5	0.85	1.5	1.5	2.0	1.7	3.0	0.8	1.7	1.3	5.0	1.7	3.0	1.5
30W at vertical mount without cover(Vin=24,48)		-	1.0	1.8	-	-	2.0	3.3	-	-	1.7	-	2.0	3.5	-
45W at horizontal mount(Vin=110)		0.5	0.85	1.5	1.5	2.0	1.7	3.0	0.8	1.7	1.3	5.0	1.7	3.0	1.5
50W at vertical mount without cover(Vin=110)		5.0	1.0	1.8	1.5	2.0	2.0	3.3	0.8	1.7	1.7	5.0	2.0	3.5	1.5
Voltage Adjust Range	V	+/-5% of Rated Output Voltage(at no load within input range)													
Ripple Noise(max)*2	mVpp	100	290	290	100	170	170	170	170	200	200	100	170	170	100
Rise up time	mS	200mS(maximum) at 25℃ and rated input/output													
Hold up time	mS	Not specified													
Regulation															
a. Line Regulation (max)	mV	35	168	168	35	84	84	84	84	105	105	35	84	84	35
b. Load Regulation (max)	mV	50	240	240	50	120	120	120	120	150	150	50	120	120	50
c. Temperature Coefficient *3	℃	0.03%/℃													
d. Drift(maximum) *4	mV	40	135	135	40	75	75	75	75	90	90	40	75	75	40
e. Dynamic Load Regulation (typ.) *5	mV	150	720	720	150	360	360	360	360	450	450	150	360	360	150
f. Recovery Time *5	mS	0.5mS(typical)													

Conditions:
*1 at rated input/output
*2 measured by a bayonet probe at the output connector at a 0 to 100MHz bandwidth
*3 at 0 to +50℃
*4 for 7hour period after 1hour warm-up at 25℃ and rated input/output
*5 when output current changed between 25% and 75% of rated output current rapidly at rated input

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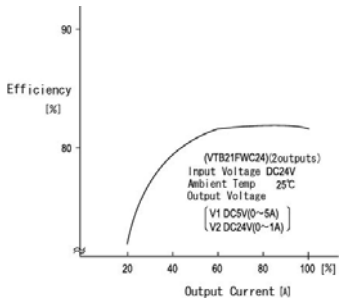
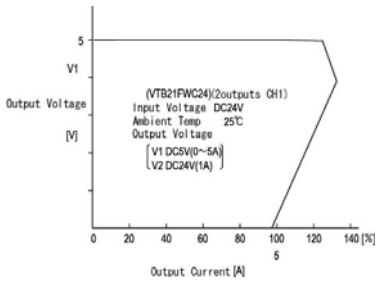
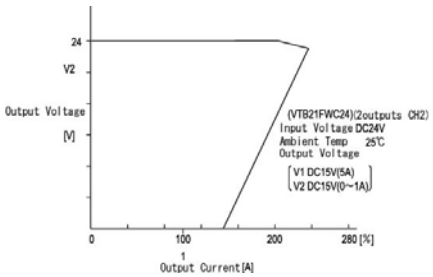
Environmental Specification	
Operating Temperature	0 to +50℃
Operating Humidity	85%RH(non-condensing)
Storage Temperature	-20 to +85℃
Storage Humidity	-
Withstanding Voltage	Primary-Secondary AC1,500Vfor 1minute (Vin=110 2000) Primary-Frame Ground AC1,500V for 1minute (Vin=110 2000) Secondary-Frame Ground AC500V for 1minute
Isolation Resistance	Primary-Secondary-Frame Ground 50MΩ(minimum) by DC500V insulation tester
Vibration	5-10Hz:10mm double amplitude,10-55Hz:19.6m/s2,20minutes' period for 60minutes each along X,Y,Z axes(non-operating)
Shock	294m/s2
Cooling	Convection
Functions	
Over current Protection	Current Limiting with automatic recovery
Over voltage Protection	zener diode clamping
Remote Sense	not available
Remote On/Off	not available
Reverse Voltage Protection	by internal fuse (Vin=110 by internal bridge diode)
Line Conduction Noise	Not specified
Weight [g](typical)	480 G
Dimension [mm]	96W × 160L × 25H

EFFICIENCY CURVE



OCP CURVE





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