

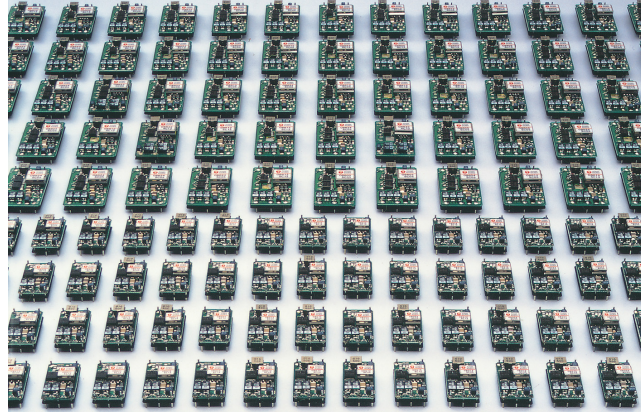


ETA-USA

HIGH QUALITY SWITCHING POWER SUPPLIES

10 WATT DC-DC CONVERTER

OBS-SC/WC series



Features

1. PCB Mountable
2. Small , Light Weight
3. High Efficiency
4. Cost effective
5. Output Voltage adjustable
6. Over Voltage Protection

General Description

In response to market demand for “DISTRIBUTED POWER,” ETA has developed a new DC/DC converter suitable for PCB mounting. OB-Series AC/DC Switching Power Supplies are designed and built to be installed right onto the user’s printed circuit board like a piece of “patch-work”. They are small, light in weight and cost effective.

ETA-USA
Sub.ETA ELECTRIC IND., CO. LTD.
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HIGH QUALITY SWITCHING POWER SUPPLIES

Specifications	Model					
	OBS05SC12	OBS12SC12	OBS15SC12	OBS24SC12	OBS22WC12	OBS23WC12
OBS**SC/WC12 10WATTS/SINGLE/2 OUTPUT						
Input Voltage DC[V]	12	12	12	12	12	12
Input Range DC[V]	8-18					
Inrush Current [A]	Not specified					
Input Range						
at no load [mA](typical)	32	37	39	42	44	47
at full load[mA](typical)	1042	1097	1040	1046	1097	1041
Line Back Noise [mVp-p] (typical)	500	500	500	500	500	500
Efficiency [%] (typical) *1	80	82	84	86	82	84
Output Voltage [V]	5	12	15	24	+12 -12	+15 -15
Output Current [A]	2	0.9	0.70	0.45	0.045-0.45	0.035-0.35
Voltage Tolerance +/-[mV](maximum) *2	100	240	300	480	240 240	300 300
Ripple and Noise [mVp-p](maximum) *3	100					
Regulation						
a.Static Line Regulation [mV](maximum)	25	60	75	120	60	75
b.Dynamic Line Regulation +/-[mV](maximum) *4	100	100	100	100	200	300
c.Static Load Regulation [mV](maximum) *5	25	60	75	120	±1500	±1500
[mV](maximum) *6					±750	±750
[mV](maximum) *7					±60	±75
d.Temperature Coefficient *8	0.03%/°C maximum)					
e.Drift[mV](maximum) *9	40	75	90	135	75	90
f.Dynamic Load Regulation [mV](maximum) *10	200	400	300	400	300	400
g.Recovery Time *4,*10	10mS(typical)					
Rise up time	10mS(typical) at rated input/output					
Hold up time	Not specified					
Overcurrent Protection	Foldback/Current Limiting with automatic recovery at discontinuous short circuit conditions					
Overvoltage Protection	Not available					
Remote Sense	Not available					
Trimming of output voltage[mV] *11	+250	+250	+350	+650		
[mV] *12	-250	-900	-1600	-4000		
Input Fuse	Installed					
Operating Temperature	-20 to 71°C					
(derating)	3.5%/°C(50°C to 71°C) (out of warranty >= 71 °C)					
Operating Humidity	20-90%/RH(non-condensing)					
Storage Temperature	-20 to +85°C					
Storage Humidity	20 to 90%/RH(non-condensing)					
Withstanding Voltage	Primary-Secondary AC500V for 1minute					
Isolation Resistance	Primary-Secondary 50MΩ(minimum) by DC500V insulation tester					
Capacitance(input-output) [pF](typical)	4400					
Vibration	5-10Hz:10m m double amplitude,10-55Hz:19.6m/§,20minutes' period for 60minutes each along X,Y,Z axes(non-operating)					
Shock	294m/s ²					
Cooling	Convection					
Weight (typical)	open board type:14g					

*1 at 25°C and rated input/output

*2 OBS**WC12 satisfies the above-mentioned specifications at the same load conditions on both outputs

*3 measured by a probe at the output connector at a 0 to 100MHz bandwidth

*4 when input voltage changed from 8V to 18V rapidly at rated input

*5 when output current changed from 0mA to rated current keeping the current of other output below minimum rated current at rated input

*6 when output current changed from minimum rated current to rated current keeping the current of other output above minimum rated current

*7 output current of both outputs changed from 0mA to rated current identically at rated input

*8 at -20 to +71°C

*9 for 7hour period after 1hour warm-up at 25 °C and rated input/output

*10 when output current changed from 25% of rated current to 75% rapidly at rated input

*11 to reduce output voltage,put a resistor between pin"0" and trimming pin

*12 to increase output voltage,put a resistor between pin"+" and trimming pin

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Input specifications SC/WC2448

Specifications	Model											
OBS**SC/WC2448 10WATTS/SINGLE/2 OUTPUT	OBS05SC2448	OBS12SC2448	OBS15SC2448	OBS24SC2448	OBS22WC2448	OBS23WC2448						
Input Characteristic												
Input Voltage DC[V]	24	48	24	48	24	48	24	48	24	48	24	48
Input Range DC[V]	18-72											
Inrush Current [A]	Not specified											
Input Range												
at no load [mA](typical)	16	18	14	17	14	17	17	20	18	22	19	23
at full load[mA](typical)	520	262	542	274	520	263	523	268	542	277	520	263
Line Back Noise [mVp-p] (typical)	500	300	500	300	500	300	500	300	500	200	500	200
Efficiency [%] (typical) *1	80	79	83	82	84	83	86	84	83	81	84	83

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Output Specifications SC/WC2448

Specifications	Model							
	OBS05SC2448	OBS12SC2448	OBS15SC2448	OBS24SC2448	OBS22WC2448		OBS23WC2448	
OBS**SC/WC2448 10WATTS/SINGLE/2 OUTPUT								
Output Voltage [V]	5	12	15	24	+12	-12	+15	-15
Output Current [A]	2	0.90	0.70	0.45	0.045-0.45		0.035-0.35	
Voltage Tolerance +/-[mV](maximum) *2	100	240	300	480	240	240	300	300
Ripple and Noise [mVp-p](maximum) *3	100							
Regulation								
a.Static Line Regulation [mV](maximum)	25	60	75	120	60	60	75	75
b.Dynamic Line Regulation +/-[mV](maximum) *4	100	100	100	200	300	300	300	300
c.Static Load Regulation [mV](maximum) *5	25	60	75	120	±1500	±1500	±1500	±1500
[mV](maximum) *6					±750	±750	±750	±750
[mV](maximum) *7					±60	±60	±75	±75
d.Temperature Coefficient *8	0.03%/°C(maximum)							
e.Drift[mV](maximum) *9	40	75	90	135	75	75	90	90
f.Dynamic Load Regulation +/- [mV](maximum) *10	200	400	300	500	300	300	300	300
g.Recovery Time *4, *10	10mS(typical)							
Rise up time	10mS(typical) at rated input/output							
Hold up time	Not specified							
Functions								
Overcurrent Protection	Foldback/Current Limiting with automatic recovery at discontinuous short circuit conditions							
Overvoltage Protection	Not available							
Remote Sense	Not available							
Trimming of output voltage[mV] *11	+250	+250	+350	+650				
[mV] *12	-250	-900	-1600	-4000				
Input Fuse	Installed							
Environmental								
Operating Temperature	-20 to 71°C							
(derating) *13	3.5%/°C(50°Cto 71°C) (out of warranty ≥1°C)							
Operating Humidity	20-90%/RH(non-condensing)							
Storage Temperature	-20 to +85°C							
Storage Humidity	20 to 90%/RH(non-condensing)							
Withstanding Voltage	Primary-Secondary AC500V for 1minute							
Isolation Resistance	Primary-Secondary 50MΩ(minimum) by DC500V insulation tester							
Capacitance(input-output) [pF](typical)	4400							
Vibration	5-10Hz:10mm double amplitude,10-55Hz:19.6m/s ² ,20minutes' period for 60minutes each along X,Y,Z axes(non-operating)							
Shock	294m/s ²							
Cooling	Convection							
Weight (typical)	open board type:14g							

Conditions:

*1 at 25°Cand rated input/output

*2 OBS**WC2448 satisfies the above-mentioned specifications at the same load conditions on both outputs

*3 measured by a probe at the output connector at a 0 to 100MHz bandwidth

*4 when input voltage changed from 18V to 72V rapidly at rated input

*5 when output current changed from 0mA to rated current keeping the current of other output below minimum rated current at rated input

*6 when output current changed from minimum rated current to rated current keeping the current of other output above minimum rated current at rated input

*7 output current of both outputs changed from 0mA to rated current identically at rated input

*8 at -20 to +71°C

*9 for 7hour period after 1hour warm-up at 25°Cand rated input/output

*10 when output current changed from 25% of rated current to 75% rapidly at rated input

*11 to reduce output voltage,put a resistor between pin"0" and trimming pin

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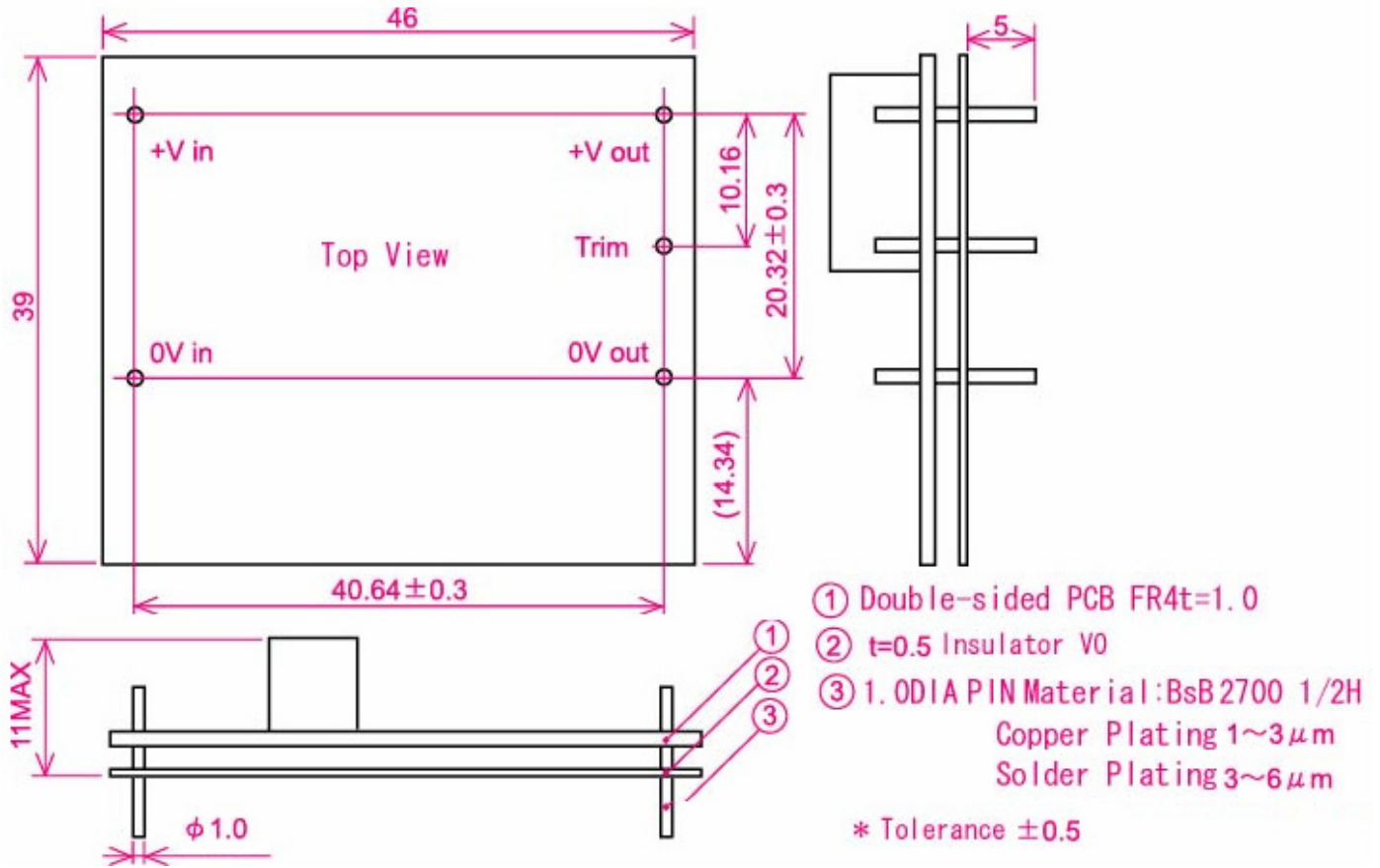
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DIMENSION DIAGRAM



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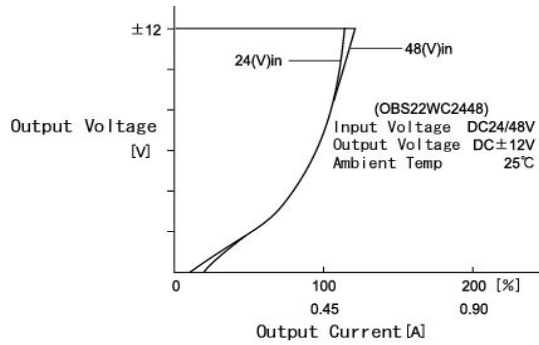
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OCP Curve



OCP Curve OBS22WC2448

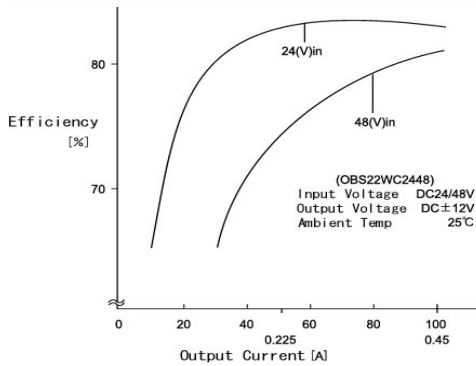
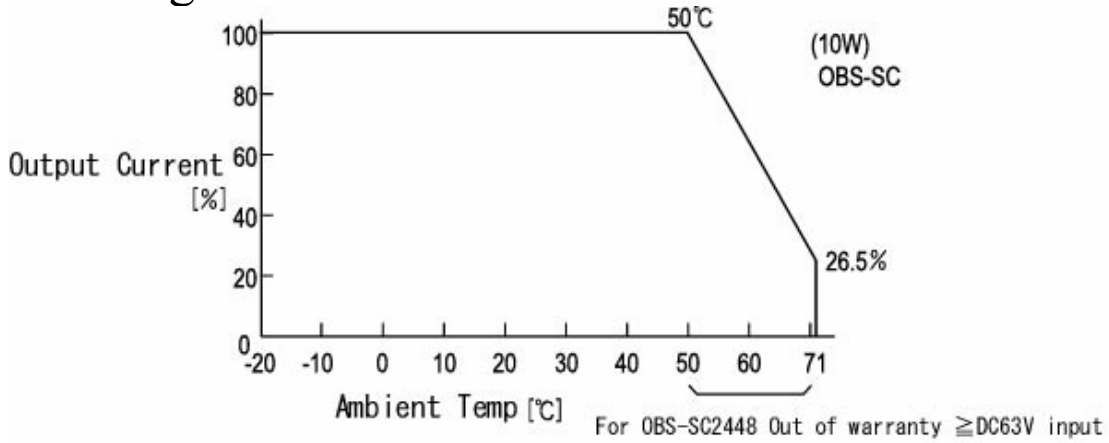
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Derating Curve



Efficiency Curve OBS22WC2448

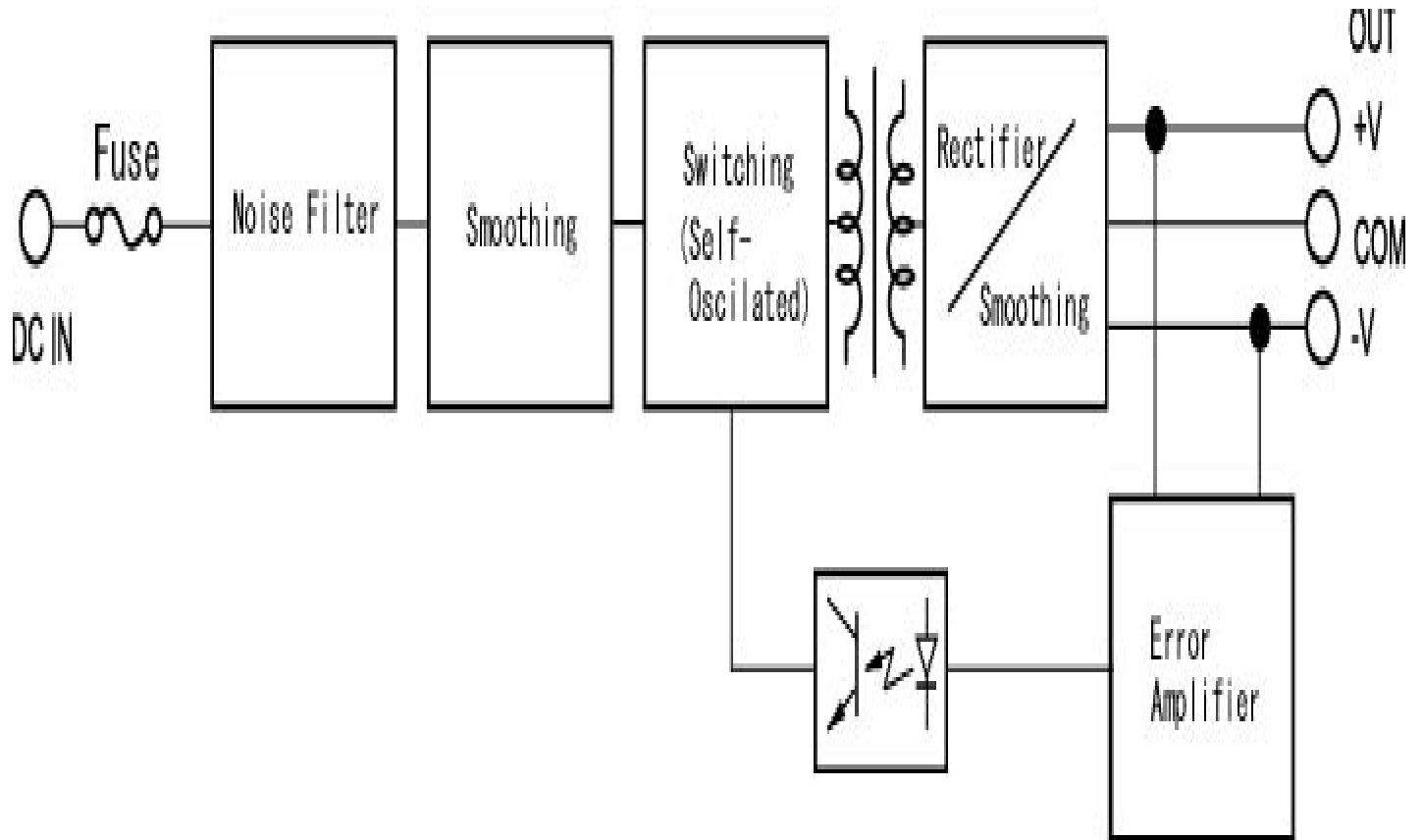
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HIGH QUALITY SWITCHING POWER SUPPLIES

BLOCK DIAGRAM



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