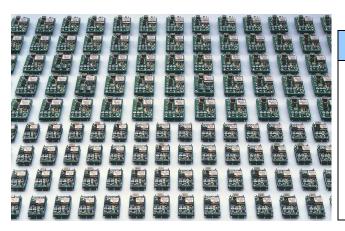


# 3 WATT DC-DC CONVERTER





## **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.

#### Features

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

### SC/WC05 Input Specifications

Specifications			Mod	lel						
OBQ**SC/WC05 3WATTS/SINGLE/2 OUTPUT	OBQ05SC05	OBQ12SC05	OBQ15SC05	OBQ24SC05	OBQ22	OBQ22WC05		BQ22WC05 OBQ2		3WC05
Input Characteristic										
Input Voltage DC[V]	5	5	5	5	5	12	5	12		
Input Range DC[V]		4.5-6								
Inrush Current [A]			Not spe	cified						
Input Range										
at no load [mA](typical)	41	51	51	57	66	64	64	64		
at full load[mA](typical)	676	789	779	800	843	356	800	342		
Line Back Noise [mVp-p](typical)	al) 200 100 200 200 200 100 200							100		
Efficiency [%] (typical) *1	74	76	77	78	74	73	75	73		



#### SC/WC05 Output Specifications

Specifications			N	lodel							
OBQ**SC/WC0512	OBQ05SC0512	OBQ12SC0512	OBQ15SC0512	OBQ24SC0512	OBQ22	NC0512	OBQ23	WC0512			
3WATTS/SINGLE/2 OUTPUT											
Output Voltage [V]	5	12	15	24	+12	-12	+15	-15			
Output Current [A]	0.5	0.25	0.20	0.13		6-0.13		0-0.10			
Voltage Tolerance +/-[mV](max) *2	100	240	300	480	240	240	300	300			
Ripple and Noise [mVp-p](max) *3				100							
Regulation											
a.Static Line Regulation [mV](max)	25	60	75	120	60	60	75	75			
b.Dynamic Line Regulation +/-[mV](max) *4	250	200	200	200	200	200	200	200			
c.Static Load Regulation [mV](max) *5	25	60	75	120	±1000	±1000	±1000	±1000			
[mV](max) *6					±480	±480	±600	±600			
[mV](max) *7					±60	±60 ±60 ±75 ±					
d.Temperature Coefficient *8		-		C(maximum)							
e.Drift[mV](maximum) *9	40	75	90	135	75	75	90	90			
f.Dynamic Load Regulation +/- [mV](typ) *10	150	360	450	720	360	360	450	450			
g.Recovery Time *4, *10			20m	S(typical)							
Rise up time				at rated input/out	put						
Hold up time			Not :	specified							
Functions											
Overcurrent Protection *10	Foldback/Cu	urrent Limiting v		ecovery at discor	ntinuous	short circ	uit condi	tions			
Overvoltage Protection			Not	available							
Remote Sence			Not	available							
Trimming of output voltage[mV] *11	+250	+250	+350	+650							
[mV] *12	-250	-900	-1600	-4000							
Input Fuse			In	stalled							
Environmental											
Operating Temperature				to +71°C							
(derating)		3.5%/°	C (50oC to 71°C	) (out of warran	ty >=71°0	C)					
Operating Humidity			20-90%/RH(	non-condensing)	)						
Storage Temperature				to +85°C							
Storage Humidity				l(non-condensing							
Withstanding Voltage		Prin	nary-Secondary	AC500V for 1	Iminute						
Isolation Resistance	Pr	imary-Frame G	round 50MΩ(m	ninimum) by DC5	500V insu	ulation te	ster				
Capacitance(input-output) [pF](typical)				2200							
Vibration	5-10Hz:10mm dou	ble amplitude.10-55	Hz:19.6m/s <sup>2</sup> .20minu	ites' period for 60min	utes each a	alona X.Y.Z	axes(non-o	operating)			
Shock			29	94m/s <sup>-</sup>							
Cooling				nvection							
Weight (typical)			open bo	pard type:6g							

Conditions:

\*1 at 25°C and rated input/output

\*2 OBQ\*\*WC0512 satisfies the above-mentioned specifications at the same load conditions on both outputs

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

\*4 when input voltage changed from 4.5V to 16V rapidly at rated output

\*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 when 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 rapidly between 25% and 75% of rated current at rated input

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

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



## SC/WC0512 Input Specifications

Specifications		Model										
OBQ**SC/WC0512 3WATTS/SINGLE/2 OUTPUT	OBQ05S	OBQ05SC0512 OBQ12SC0512			OBQ15SC0512		OBQ24SC0512		OBQ22WC0512		OBQ23	WC0512
Input Characteristic												
Input Voltage DC[V]	5	12	5	12	5	12	5	12	5	12	5	12
Input Range DC[V]		4.5-16V										
Inrush Current [A]					Ν	lot spe	ecified					
Inrush Current [A]												
at no load [mA](typical)	41	44	51	54	51	53	57	59	66	64	64	64
at full load[mA](typical)	676	297	789	342	779	337	800	346	843	356	800	342
Line Back Noise [mVp-p](typical)	200	100	100	80	200	100	200	100	200	100	200	100
Efficiency [%] (typical) *1	74	70	76	73	77	74	78	75	74	73	75	73



#### SC/WC0512 Output Specifications

Specifications			N	lodel							
OBQ**SC/WC0512 3WATTS/SINGLE/2 OUTPUT	OBQ05SC0512	OBQ12SC0512	OBQ15SC0512	OBQ24SC0512	OBQ22	VC0512	OBQ23	WC0512			
Output Voltage [V]	5	12	15	24	+12	-12	+15	-15			
Output Current [A]	0.5	0.25	0.20	0.13	0.013	-0.13	0.010	0-0.10			
Voltage Tolerance +/-[mV](max) *2	100	240	300	480	240	240	300	300			
Ripple and Noise [mVp-p](max) *3				100							
Regulation											
a.Static Line Regulation [mV](max)	25	60	75	120	60	60	75	75			
b.Dynamic Line Regulation +/-[mV](max) *4	250	200	200	200	200	200	200	200			
c.Static Load Regulation [mV](max) *5	25	60	75	120	±1000	±1000	±1000	±1000			
[mV](max) *6					±480	±480	±600	±600			
[mV](max) *7					±60 ±60 ±75 ±75						
d.Temperature Coefficient *8	0.03%/°C(maximum) 40 75 90 135 75 75 90 90										
e.Drift[mV](maximum) *9	40	75	90	135	75 75 90						
f.Dynamic Load Regulation +/- [mV](typ) *10	150	360	450	720	360	360	450	450			
g.Recovery Time *4, *10				S(typical)							
Rise up time				t rated input/out	put						
Hold up time			Not	specified							
Functions											
Overcurrent Protection *10	Foldback/Cu	urrent Limiting v		ecovery at discor	ntinuous s	short circ	uit condi	tions			
Overvoltage Protection				available							
Remote Sence		-		available	-						
Trimming of output voltage[mV] *11	+250	+250	+350	+650							
[mV] *12	-250	-900	-1600	-4000							
Input Fuse			In	stalled							
Environmental											
Operating Temperature				o +71°C							
(derating)		3.5%/°									
Operating Humidity				non-condensing	)						
Storage Temperature				o +85°C							
Storage Humidity				(non-condensin							
Withstanding Voltage				AC500V for 1							
Isolation Resistance	Pr	imary-Frame G		inimum) by DC	500V insu	lation te	ster				
Capacitance(input-output) [pF](typical)				2200							
Vibration	5-10Hz:10mm dou	ble amplitude.10-55	Hz:19.6m/s <sup>2</sup> .20minu	<u>tes' period for 60min</u> 94m/s <sup>2</sup>	utes each a	lona X.Y.Z	axes(non-o	operating)			
Shock											
Cooling				ivection							
Weight (typical)			open bo	pard type:6g							

Conditions:

\*1 at 25°C

\*2 OBQ\*\*WC0512 satisfies the above-mentioned specifications at the same load conditions on both outputs

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

\*4 when input voltage changed from 4.5V to 16V rapidly at rated output

\*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 when 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

- \*10 when output current changed rapidly between 25% and 75% of rated current at rated input
- \*11 to increase output voltage,put a resistor between pin"0" and trimming pin

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



## SC12 Input Specifications

Specifications		М	odel	
OBQ**SC12 3WATTS/SINGLE OUTPUT	OBQ05SC12	OBQ12SC12	OBQ15SC12	OBQ24SC12
Input Characteristic				
Input Voltage DC[V]	12	12	12	12
Input Range DC[V]	9-18V			
Inrush Current [A]		Not s	pecified	
at no load [mA](typical)	41	51	51	57
at full load[mA](typical)	676	789	779	800
Line Back Noise [mVp-p](typical)	200	100	200	200
Efficiency [%] (typical) *1	74	77	77	78



#### SC12 Output Specifications

Specifications	<u>3012 Out</u>		Model					
OBQ**SC12								
3WATTS/SINGLE/2 OUTPUT	OBQ05SC12	OBQ12SC12	OBQ15SC12	OBQ24SC12				
Output Voltage [V]	5	12	15	24				
Output Current [A]	0.5	0.25	0.20	0.13				
Voltage Tolerance +/-[mV](max) *2	100	240	300	480				
Ripple and Noise [mVp-p](max) *3			100					
Regulation								
a.Static Line Regulation [mV](max)	25	60	75	120				
b.Dynamic Line Regulation +/-[mV](max) *4	250	200	200	200				
c.Static Load Regulation [mV](max) *5	25	60	75	120				
[mV](max) *6								
[mV](max) *7								
d.Temperature Coefficient *8			°C(maximum)					
e.Drift[mV](maximum) *9	40	75	90	135				
f.Dynamic Load Regulation +/- [mV](typ) *10	150	360	450	720				
g.Recovery Time *4, *10			S(typical)					
Rise up time			at rated input/output					
Hold up time		Not	specified					
Functions	-							
Overcurrent Protection *10	Foldback/Current Lin	niting with automatic r	ecoverv at discontinuou	is short circuit cond				
	Foldback/Current Limiting with automatic recovery at discontinuous short circuit							
Overvoltage Protection		•	available					
Overvoltage Protection Remote Sence		Not						
	+250	Not	available	+650				
Remote Sence		Not Not	available available					
Remote Sence Trimming of output voltage[mV] *11	+250	Not +250 -900	available available +350	+650				
Remote Sence Trimming of output voltage[mV] *11 [mV] *12	+250	Not +250 -900	available available +350 -1600	+650				
Remote Sence Trimming of output voltage[mV] *11 [mV] *12 Input Fuse	+250 -250	Not +250 -900 Ir -20	available available +350 -1600 Istalled to +71°C	+650 -4000				
Remote Sence Trimming of output voltage[mV] *11 [mV] *12 Input Fuse Environmental	+250 -250	Not +250 -900 Ir -20 3.5%/°C (50oC to 71°C	available available +350 -1600 Istalled to +71°C C) (out of warranty >=7	+650 -4000				
Remote Sence Trimming of output voltage[mV] *11 [mV] *12 Input Fuse Environmental Operating Temperature	+250 -250	Not +250 -900 Ir -20 3.5%/°C (50oC to 71°C	available available +350 -1600 Istalled to +71°C C) (out of warranty >=7	+650 -4000				
Remote Sence Trimming of output voltage[mV] *11 [mV] *12 Input Fuse Environmental Operating Temperature (derating)	+250 -250	Not +250 -900 Ir -20 3.5%/℃ (50oC to 71℃ 20-90%/RH	available available +350 -1600 Istalled to +71°C	+650 -4000				
Remote Sence Trimming of output voltage[mV] *11 [mV] *12 Input Fuse Environmental Operating Temperature (derating) Operating Humidity	+250 -250	Not +250 -900 Ir -20 3.5%/°C (50oC to 71°C 20-90%/RH -20	available available +350 -1600 istalled to +71°C C) (out of warranty >=7 (non-condensing)	+650 -4000				
Remote Sence Trimming of output voltage[mV] *11 [mV] *12 Input Fuse Environmental Operating Temperature (derating) Operating Humidity Storage Temperature Storage Humidity Withstanding Voltage	+250 -250	Not Not +250 -900 Ir -20 3.5%/℃ (50oC to 71℃ 20-90%/RH -20 20 to 90%/RH Primary-Secondary	available available +350 -1600 istalled to +71°C C) (out of warranty >=7 (non-condensing) to +85°C H(non-condensing) ( AC500V for 1minut	+650 -4000				
Remote Sence Trimming of output voltage[mV] *11 [mV] *12 Input Fuse Environmental Operating Temperature (derating) Operating Humidity Storage Temperature Storage Humidity	+250 -250	Not Not +250 -900 Ir -20 3.5%/℃ (50oC to 71℃ 20-90%/RH -20 20 to 90%/RH Primary-Secondary	available available +350 -1600 istalled to +71°C C) (out of warranty >=7 (non-condensing) to +85°C -(non-condensing)	+650 -4000				
Remote Sence Trimming of output voltage[mV] *11 [mV] *12 Input Fuse Environmental Operating Temperature (derating) Operating Humidity Storage Temperature Storage Humidity Withstanding Voltage	+250 -250	Not       +250       -900       Ir       -20       3.5%/°C (50oC to 71°C       20-90%/RH       -20       20 to 90%/RH       -20       20 to 90%/RH       -20       20 to 90%/RH       -20       20 to 90%/RH       -20       -20 to 90%/RH       -20       20 to 90%/RH       -20       -20       -20       -20       -20       -20       -20       -20       -20  -20	available available +350 -1600 istalled to +71°C C) (out of warranty >=7 (non-condensing) to +85°C H(non-condensing) ( AC500V for 1minut	+650 -4000				
Remote Sence Trimming of output voltage[mV] *11 [mV] *12 Input Fuse Environmental Operating Temperature (derating) Operating Humidity Storage Temperature Storage Temperature Storage Humidity Withstanding Voltage Isolation Resistance Capacitance(input-output) [pF](typical)	+250 -250	Not       +250       -900       Ir       -20       3.5%/°C (50oC to 71°C       20-90%/RH       -20       20 to 90%/RH       Primary-Secondary       ame Ground 50MΩ(r	available available +350 -1600 stalled to +71°C c) (out of warranty >=7 (non-condensing) to +85°C H(non-condensing) / AC500V for 1minut ninimum) by DC500V in 2200	+650 -4000 '1°C) e nsulation tester				
Remote Sence Trimming of output voltage[mV] *11 [mV] *12 Input Fuse Environmental Operating Temperature (derating) Operating Humidity Storage Temperature Storage Temperature Storage Humidity Withstanding Voltage Isolation Resistance Capacitance(input-output) [pF](typical) Vibration Shock	+250 -250	Not       +250       -900       Ir       -20       3.5%/°C (50oC to 71°C       20-90%/RH       -20       20 to 90%/RH       20 to 90%/RH	available available +350 -1600 istalled to +71°C C) (out of warranty >=7 (non-condensing) to +85°C H(non-condensing) / AC500V for 1minut ninimum) by DC500V ii 2200 utes' oeriod for 60minutes each 94m/s <sup>2</sup>	+650 -4000 '1°C) e nsulation tester				
Remote Sence Trimming of output voltage[mV] *11 [mV] *12 Input Fuse Environmental Operating Temperature (derating) Operating Humidity Storage Temperature Storage Temperature Storage Humidity Withstanding Voltage Isolation Resistance Capacitance(input-output) [pF](typical)	+250 -250	Not       +250       -900       Ir       -20       3.5%/°C (50oC to 71°C       20-90%/RH       -20       20 to 90%/RH       Primary-Secondary       ame Ground 50MΩ(r       itude.10-55Hz:19.6m/s².20min       20       Co	available available +350 -1600 stalled to +71°C c) (out of warranty >=7 (non-condensing) to +85°C H(non-condensing) / AC500V for 1minut ninimum) by DC500V in 2200	+650 -4000 '1°C) e nsulation tester				

Conditions:

\*1 at 25°C and rated input/output

\*2 OBQ\*\*WC0512 satisfies the above-mentioned specifications at the same load conditions on both outputs

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

\*4 when input voltage changed from 4.5V to 16V rapidly at rated output

\*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 when 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 rapidly between 25% and 75% of rated current at rated input

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

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



PIETA-		POWER S		C1224 I	nput	Specifi	cations					
Specifications		Model										
OBQ**SC/WC1224 3WATTS/SINGLE/2 OUTPUT	OBQ05	OBQ05SC1224 OBQ12SC1224 OBQ15SC1224 OBQ24SC1224 OBQ22WC1224 OBQ2						OBQ2	23WC1224			
Input Characteristic												
Input Voltage DC[V]	12	24	12	24	12	24	12	24	12	24	12	24
Input Range DC[V]						5	8-32					
Inrush Current [A]				Not s	pecified				9A/DC	C12V,18	A/DC24	V 10uS
Inrush Current [A]												
at no load [mA](typical)	22	24	28	29	28	29	30	30	35	31	32	29
at full load[mA](typical)	267	144	312	168	304	164	317	171	329	173	308	164
Line Back Noise [mVp-p](typical)	300	150	300	150	300	150	300	150	1000	500	1000	500
Efficiency [%] (typical) *1	78	72	80	74	82	76	82	76	79	75	81	76



### SC/WC1224 Output Specifications

Specifications				Model							
OBQ**SC/WC1224	OB005SC1224	OBO12SC1224	OBO15SC1224	OBQ24SC1224	OBQ22	NC1224	OBO23	WC1224			
3WATTS/SINGLE/2 OUTPUT	0600301224	00012301224	00013301224	06024301224	OBQZZV	1224	OBQ20	0001224			
Output Voltage [V]	5	12	15	24	+12	-12	+15	-15			
Output Current [A]	0.5	0.25	0.20	0.13	0.013	-0.13	0.01	0-0.10			
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	200	200	200	200	300	300	300	300			
c.Static Load Regulation [mV](maximum) *5	25	60	75	120	±1000	±1000	±1200	±1200			
[mV](maximum) *6					±480 ±480 ±600 ±6						
[mV](maximum) *7											
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	150	360	250	500	300	300	300	300			
g.Recovery Time *4, *10			20m	nS(typical)							
Rise up time			10mS(typical)	at rated input/out	put						
Hold up time			Not	specified							
Functions											
Overcurrent Protection	Foldbac	k/Current Limitin	g with automatic	recovery at discor	ntinuos sh	nort circui	t conditio	ns			
Overvoltage Protection			Not	available							
Remote Sence			Not	available							
Trimming of output voltage[mV] (typical) *11	+250	+250	+350	+650							
[mV](typical) *12	-250	-900	-1600	-4000							
Input Fuse			Ir	nstalled							
Environmental											
Operating Temperature				) to 71℃							
(derating) *13		3.5	5%/(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				H(non-condensing							
Withstanding Voltage		Р	rimary-Secondar	y AC500V for 1	minute						
Isolation Resistance		Primary-Seco	ndary 50MΩ(m	inimum) by DC50	0V insulat	tion teste	r				
Capacitance(input-output) [pF](typical)				2200							
Vibration	5-10Hz:10mm dou	ible amplitude, 10-5	5Hz:19.6m/s <sup>2</sup> ,20min	utes' period for 60mi	inutes each	along X,Y	,Z axes(no	n-operatin			
Shock			2	94m/s <sup>2</sup>							
Cooling			Co	nvection							
Weight (typical)			open b	oard type:6g							

Conditions:

\*1 at 25°C and rated input/output

\*2 OBQ\*\*WC0512 satisties the above-mentioned specifications at the same load conditions on both outputs

\*3 measured by a bayonet probe at the output connector at a 0 to 100Mhz bandwidth

\*4 when input voltage changed from 8V to 32V rapidly at rated output

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

\*8 at -20 to +71°C

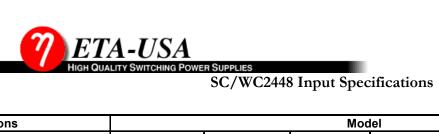
\*9 for 7hour period after 1hour warm-up at 25°C and rated input/output

\*10 when output current changed rapidly between 25% and 75% of rated current at rated input

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

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

\*13 operating temperature of OBQ\*\*WC1224 should be ≦71-2\*(Ein-24) at input voltage from 24V to 32V (Ein=Input Voltage)

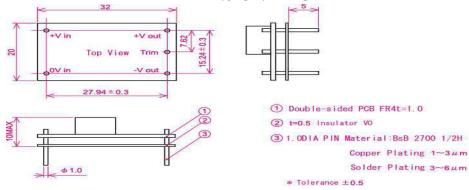


Specifications		Model										
OBQ**SC/WC2448 3WATTS/SINGLE/2 OUTPUT	OBQ05	OBQ05SC2448 OBQ12SC2448			OBQ15	OBQ15SC2448		OBQ24SC2448		OBQ22WC2448		NC2448
Input Characteristic												
Input Voltage DC[V]	24	48	24	48	24	48	24	48	24	48	24	48
Input Range DC[V]		18-72V										
Inrush Current [A]					1	Not spe	ecified					
Inrush Current [A]												
at no load [mA](typical)	10	11	15	15	15	15	15	15	14	14	14	14
at full load[mA](typical)	136	72	154	82	152	81	158	84.4	160	86	152	75
Line Back Noise [mVp-p](typical)	100	80	100	80	100	80	100	80	200	100	200	100
Efficiency [%] (typical) *1	76	72	81	76	82	77	82	77	81	76	82	76



Specifications			M	odel		-					
OBQ**SC/WC2448	OBQ05SC2448	OBQ12SC2448	OBQ15SC2448	OBQ24SC2448	OBQ22V	/C2448	OBQ23	NC2448			
3WATTS/SINGLE/2 OUTPUT								_			
Output Voltage [V]	5	12	15	24	+12	-12	+15	-15			
Output Current [A]	0.5	0.25	0.20	0.13	0.013		0.010	-			
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	250	200	200	200	300	300	300	300			
c.Static Load Regulation [mV](maximum) *5	25	60	75	120	±1000	±1000	±1200	±1200			
[mV](maximum) *6					±480	±480	±600	±600			
[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										
f.Dynamic Load Regulation [mV](maximum) *10	250	250 250 250 500 300 300									
g.Recovery Time *4, *10	20mS(typical)										
Rise up time			10mS(typical) at		out						
Hold up time		Not specified									
Functions											
Overcurrent Protection	Foldback/	Current Limiting	with automatic rec	overy at discon	tinuous s	hort cir	cuit condit	ions			
Overvoltage Protection				vailable							
Remote Sence			Not a	vailable							
Trimming of output voltage[mV] *11	+250	+250	+350	+650							
[mV] *12	-250	-900	-1600	-4000							
Input Fuse		•	Ins	talled							
Environmental											
Operating Temperature			-20 to	o +71℃							
(derating) *13		3.5%	/°C (50°C to 71°C)	(out of warrant	ty ≧71°C	)					
Operating Humidity				on-condensing)							
Storage Temperature			-20 to	o +85°C							
Storage Humidity			20 to 90%/RH(	non-condensing	1)						
Withstanding Voltage		Pr	imary-Secondary								
Isolation Resistance		Primary-Seco	ndary 50MΩ(mini	mum) by DC500	V insulat	ion teste	er				
Capacitance(input-output) [pF](typical)				200							
Vibration	5-10Hz:10	mm double amplitude.	10-55Hz:19.6m/s <sup>2</sup> ,20minute	es' period for 60minutes	s each along	X.Y.Z axes	(non-operating	1)			
Shock				4m/s²				,,			
Cooling			Conv	vection							
Weight (typical)			open boa	ard type:6q							
*1 at 25°C and rated input/output				<u>, , , , , , , , , , , , , , , , , , , </u>							
*2 OBQ**WC2448 satisfies the above-mentio	ned specificatio	ns at the same	load conditions on	both outputs							
*3 measured by a probe at the output connect											
*4 w hen input voltage changed from 18V to											
*5 w hen output current changed from 0mA to			ent of other output	t below minimum	rated cu	irrent					
at rated input		looping allo our	enter etter eutpa								
*6 w hen output current changed from minimu	im rated current	to rated curren	t keeping the curre	ent of other outp	outl						
above minimum rated current at rated inpu											
*7 output current of both outputs changed fro		current identic	ally at rated input								
*8 at -20 to +71°C											
	25°C and rated	nnut/outout									
*9 for 7hour period after 1 hour w arm-up at 2											
*10 w hen output current changed rapidly be				t							
*11 to increase output voltage,put a resistor	•	• •	1								
*12 to reduce output voltage,put a resistor be											
*13 out of w arranty $\geq$ 50°C at input voltage	trom 63V to 72	/									

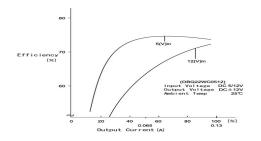




**DIMENSION DIAGRAM** 

Dimension Diagram OBQ-SC2448

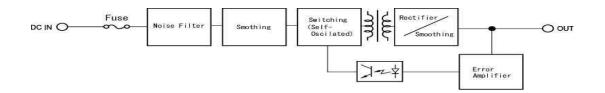
## EFFICIENCY CURVE



Efficiency Curve OBQ22WC0512



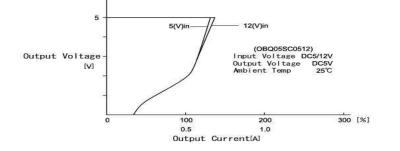
## BLOCK DIAGRAM



Block diagram OBQ-SC



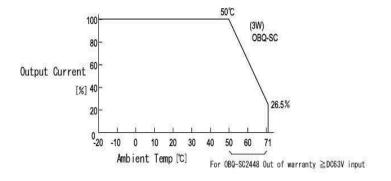
## OCP CURVE



OCP Curve OBQ05SC0512



## DERATING CURVE



Derating Curve OBQ-SC-3W