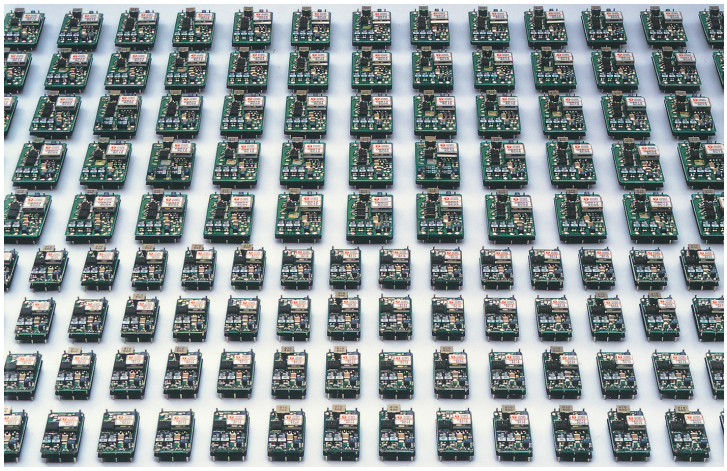
ETA-USA
HIGH QUALITY SWITCHING POWER SUPPLIES

6 WATT DC-DC CONVERTER

OBR- SC / WC 05
SINGLE/ DUAL CHANNEL

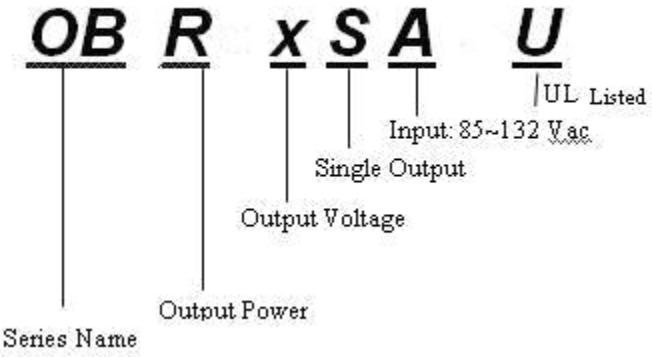


Features

1.PCB Mountable
2. Small , Light Weight
3. High Efficiency
4. Cost effective
5. Output Voltage adjustable
6. Over Voltage Protection
7. EMI: complies to FCC/B
8. Safety: UL 1950, CSA 950(C-UL) approved

General Description

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.



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SC/WC05 Input Specifications

Specifications	Model											
OBRSC/WC05 6WATTS/SINGLE/2 OUTPUT**	OBR05SC05		OBR12SC05		OBR15SC05		OBR24SC05		OBR22WC05		OBR23WC05	
Input Characteristic												
Input Voltage DC[V]	5		5		5		5		5		5	
Input Range DC[V]	4.5-6											
Inrush Current [A]	Not specified											
Input Range												
at no load [mA](typical)	50	51	68	60	75	62	88	67	106	93	116	98
at full load[mA](typical)	1351	578	1600	676	1548	654	1590	668	1642	697	1568	662
Line Back Noise [mVp-p](typical)	300	150	300	150	300	150	300	150	300	150	300	150
Efficiency [%] (typical) *1	74		74		75		76		74		75	

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SC/WC05 Output Specifications

Specifications	Model							
OBR**SC/WC05 6WATTS/SINGLE/2 OUTPUT	OBR05SC05	OBR12SC05	OBR15SC05	OBR24SC05	OBR22WC05		OBR23WC05	
Output Voltage [V]	5	12	15	24	+12	-12	+15	-15
Output Current [A]	1	0.50	0.40	0.26	0.025-0.25		0.020-0.20	
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	360	450	720	480	480	600	600
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	90
f.Dynamic Load Regulation [mV](maximum) *10	150	360	450	720	360	360	450	450
g.Recovery Time *4,*10	20mS(typical)							
Rise up time	20mS(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 Sence	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)	3.5%/°C (50°Cto 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)	2200							
Vibration	5-10Hz:10mm double amplitude,10-55Hz:2G,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:12g							

Conditions:

*1 at 25°C and rated input/output

*2 OBR**WC0512 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 4.5V to 16V 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°C and rated input/output

*10 when output current changed rapidly between 25% and 75% of rated current 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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SC/WC0512 Input Specifications

Specifications	Model											
OBR**SC/WC0512 6WATTS/SINGLE/2 OUTPUT	OBR05SC0512		OBR12SC0512		OBR15SC0512		OBR24SC0512		OBR22WC0512		OBR23WC0512	
Input Characteristic												
Input Voltage DC[V]	5	12	5	12	5	12	5	12	5	12	5	12
Input Range DC[V]	4.5-16											
Inrush Current [A]	Not specified											
Inrush Current [A]												
at no load [mA](typical)	50	51	68	60	75	62	88	67	106	93	116	98
at full load[mA](typical)	1351	578	1600	676	1548	654	1590	668	1642	697	1568	662
Line Back Noise [mVp-p](typical)	300	150	300	150	300	150	300	150	300	150	300	150
Efficiency [%] (typical) *1	74	72	75	74	77	76	78	78	75	74	76	75

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OC/WC0512 Output Specifications

Specifications	Model							
OBRSC/WC0512 6WATTS/SINGLE/2 OUTPUT**	OBR05SC0512	OBR12SC0512	OBR15SC0512	OBR24SC0512	OBR22WC0512		OBR23WC0512	
Output Voltage [V]	5	12	15	24	+12	-12	+15	-15
Output Current [A]	1	0.50	0.40	0.26	0.025-0.25		0.020-0.20	
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	360	450	720	480	480	600	600
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%/℃(maximum)							
e.Drift[mV](maximum) *9	40	75	90	135	75	75	90	90
f.Dynamic Load Regulation [mV](maximum) *10	150	360	450	720	360	360	450	450
g.Recovery Time *4,*10	20mS(typical)							
Rise up time	20mS(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 Sence	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℃							
(derating)	3.5%/℃(50℃ to 71℃)(out of warranty ≧71℃)							
Operating Humidity	20-90%/RH(non-condensing)							
Storage Temperature	-20 to +85℃							
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)	2200							
Vibration	5-10Hz:10mm double amplitude,10-55Hz:2G,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:12g							

Conditions:

*1 at 25℃and rated input/output

*2 OBR**WC0512 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 4.5V to 16V 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℃

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

*10 when output current changed rapidly between 25% and 75% of rated current 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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SC/WC12 Input Specifications

Specifications	Model											
OBRSC/WC12 6WATTS/SINGLE/2 OUTPUT**	OBR05SC12		OBR12SC12		OBR15SC12		OBR24SC12		OBR22WC12		OBR23WC12	
Input Characteristic												
Input Voltage DC[V]	5		12		15		24		5	12	5	12
Input Range DC[V]	9-18V											
Inrush Current [A]	Not specified											
Input Range												
at no load [mA](typical)	50	51	68	60	75	62	88	67	106	93	116	98
at full load[mA](typical)	1351	578	1600	676	1548	654	1590	668	1642	697	1568	662
Line Back Noise [mVp-p](typical)	300	150	300	150	300	150	300	150	300	150	300	150
Efficiency [%] (typical) *1	75		78		79		81		78		79	

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SC/WC12 Output Specifications

Specifications	Model							
OBRSC/WC12 6WATTS/SINGLE/2 OUTPUT**	OBR05SC12	OBR12SC12	OBR15SC12	OBR24SC12	OBR22WC12		OBR23WC12	
Output Voltage [V]	5	12	15	24	+12	-12	+15	-15
Output Current [A]	1	0.50	0.40	0.26	0.025-0.25		0.020-0.20	
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	360	450	720	480	480	600	600
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	90
f.Dynamic Load Regulation [mV](maximum) *10	150	360	450	720	360	360	450	450
g.Recovery Time *4,*10	20mS(typical)							
Rise up time	20mS(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 Sence	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)	3.5%/°C (50°Cto 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)	2200							
Vibration	5-10Hz:10mm double amplitude,10-55Hz:2G,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:12g							

Conditions:

*1 at 25°C and rated input/output

*2 OBR**WC0512 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 4.5V to 16V 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°C and rated input/output

*10 when output current changed rapidly between 25% and 75% of rated current 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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SC/WC1224 Input Specifications

Specifications	Model											
OBRSC/WC1224 6WATTS/SINGLE/2 OUTPUT**	OBR05SC1224		OBR12SC1224		OBR15SC1224		OBR24SC1224		OBR22WC1224		OBR23WC1224	
Input Characteristic												
Input Voltage DC[V]	12	24	12	24	12	24	12	24	12	24	12	24
Input Range DC[V]	8-32											
Inrush Current [A]	Not specified											
Input Range												
at no load [mA](typical)	26	30	28	33	28	35	33	34	38	38	38	38
at full load[mA](typical)	520	270	602	312	595	308	611	313	617	312	609	308
Line Back Noise [mVp-p](typical)	300	150	300	150	300	150	300	150	300	150	300	150
Efficiency [%] (typical) *1	80	77	83	80	84	81	85	83	81	80	82	81

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SC/WC1224 Output Specification

OBR**SC/WC1224 6WATTS/SINGLE/2 OUTPUT	OBR05SC1224	OBR12SC1224	OBR15SC1224	OBR24SC1224	OBR22WC1224		OBR23WC1224	
Output Voltage [V]	5	12	15	24	+12	-12	+15	-15
Output Current [A]	1	0.50	0.40	0.26	0.025-0.25		0.020-0.20	
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	200	200	200	200
c.Static Load Regulation [mV](maximum) *5	25	60	75	120	±1000	±1000	±1000	±1000
[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	90
f.Dynamic Load Regulation [mV](typical) *10	150	360	450	720	360	360	450	450
g.Recovery Time *4, *10	20mS(typical)							
Rise up time	20mS(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 Sence	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°C to 71°C) (out of warranty >=71°C)							
Operating Humidity	2-90%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 50MW(minimum) by DC500V insulation tester							
Capacitance(input-output) [pF](typical)	2200							
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:12g							

Conditions:

*1 at 25°C and rated input/output

*2 OBR**WC1224 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 32V 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°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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SC/WC2448 Input Specification

Specifications	Model											
OBRSC/WC2448 6WATTS/SINGLE/2 OUTPUT**	OBR05SC2448		OBR12SC2448		OBR15SC2448		OBR24SC2448		OBR22WC2448		OBR23WC2448	
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											
Inrush Current [A]												
at no load [mA](typical)	11	13	12	14	12	14	14	16	18	18	18	18
at full load[mA](typical)	267	137	305	154	297	153	306	155	308	156	304	154
Line Back Noise [mVp-p] (typical)	350	200	500	200	500	200	500	200	500	200	500	200
Efficiency [%] (typical) *1	78	76	82	81	84	82	85	84	81	80	82	81

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SC/WC2448 Output Specification

Specifications	Model							
OBR**SC/WC2448 6WATTS/SINGLE/2 OUTPUT	OBR05SC2448	OBR12SC2448	OBR15SC2448	OBR24SC2448	OBR22WC2448		OBR23WC2448	
Output Voltage [V]	5	12	15	24	+12	-12	+15	-15
Output Current [A]	1	0.50	0.40	0.26	0.025-0.25		0.020-0.20	
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	200	200	200	200
c.Static Load Regulation [mV](maximum) *5	25	60	75	120	±1500	±1500	±2000	±2000
[mV](maximum) *6					±480	±480	±600	±600
[mV](maximum) *7					±60	±60	±75	±75
d.Temperature Coefficient *8	0.03%/℃(maximum)							
e.Drift[mV](maximum) *9	40	75	90	135	75	75	90	90
f.Dynamic Load Regulation [mV](maximum) *10	250	200	200	500	300	300	300	300
g.Recovery Time *10	10mS(typical)							
Rise up time	15mS(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 Sence	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℃							
(derating) *13	3.5%/℃(50℃ to 71℃) (out of warranty ≧71℃)							
Operating Humidity	20-90%/RH(non-condensing)							
Storage Temperature	-20 to +85℃							
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)	2200							
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:12g							

Conditions:

*1 at 25℃and rated input/output

*2 OBR**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℃

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

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

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

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

*13 out of warranty ≧50℃at input voltage from 63V to 72V

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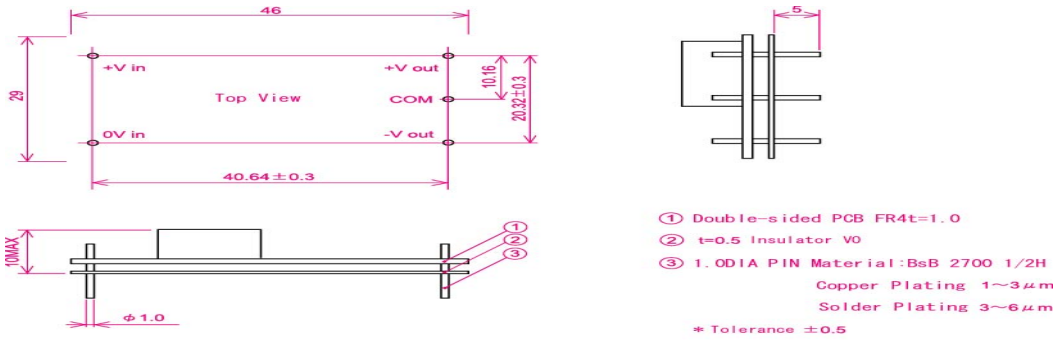
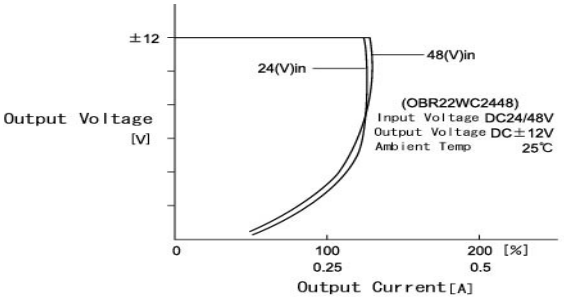
DIMENSION DIAGRAM



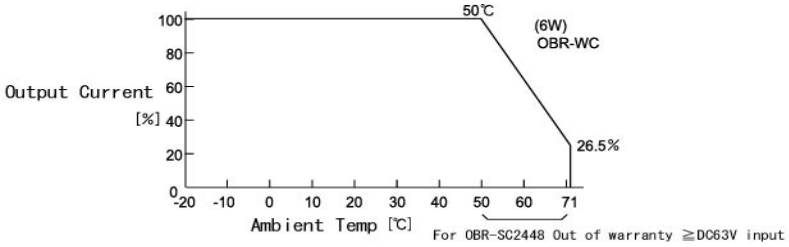
Dimension Diagram OBR-WC2448

OCP CURVE



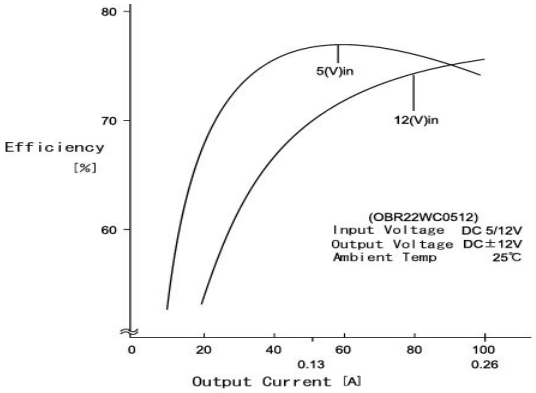
OCP Curve OBR22WC2448

DERATING CURVE



Derating Curve OBR-SC-6W

EFFICIENCY CURVE



Efficiency Curve OBR22WC0512

OCEAN CHIPS
Океан Электроники
Поставка электронных компонентов

Компания «Океан Электроники» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Поставка оригинальных импортных электронных компонентов напрямую с производств Америки, Европы и Азии, а так же с крупнейших складов мира;
- Широкая линейка поставок активных и пассивных импортных электронных компонентов (более 30 млн. наименований);
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Помощь Конструкторского Отдела и консультации квалифицированных инженеров;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Поставка электронных компонентов под контролем ВП;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- При необходимости вся продукция военного и аэрокосмического назначения проходит испытания и сертификацию в лаборатории (по согласованию с заказчиком);
- Поставка специализированных компонентов военного и аэрокосмического уровня качества (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Actel, Aeroflex, Peregrine, VPT, Syfer, Eurofarad, Texas Instruments, MS Kennedy, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

Компания «Океан Электроники» является официальным дистрибьютором и эксклюзивным представителем в России одного из крупнейших производителей разъемов военного и аэрокосмического назначения «**JONHON**», а так же официальным дистрибьютором и эксклюзивным представителем в России производителя высокотехнологичных и надежных решений для передачи СВЧ сигналов «**FORSTAR**».

AVIC JONHON

«JONHON» (основан в 1970 г.)

Разъемы специального, военного и аэрокосмического назначения:

(Применяются в военной, авиационной, аэрокосмической, морской, железнодорожной, горно- и нефтедобывающей отраслях промышленности)

«FORSTAR» (основан в 1998 г.)

ВЧ соединители, коаксиальные кабели, кабельные сборки и микроволновые компоненты:

(Применяются в телекоммуникациях гражданского и специального назначения, в средствах связи, РЛС, а так же военной, авиационной и аэрокосмической отраслях промышленности).

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