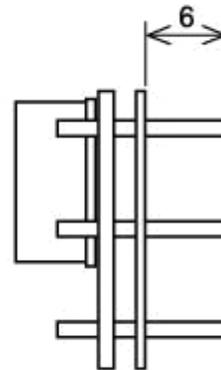
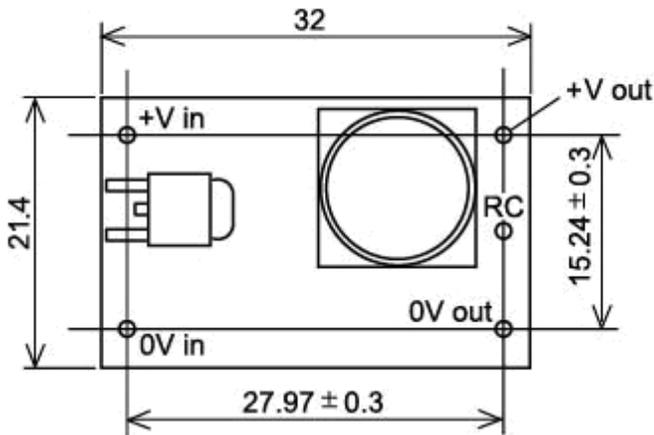


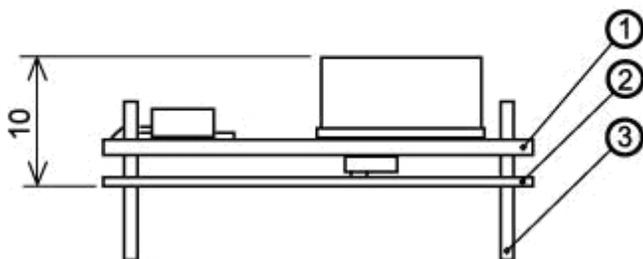


### OC1XX-SCXXXX-A

4.6~28.8 WATT  
NON-ISOLATED  
DC-DC CONVERTER



Turn on by inputting voltage (4.5 to 56V) between "RC" pin and "0V" pin. Put a 5k ohm resistor between "+" in pin and "RC" pin when remote on/off is not used



- ① Double-sided PCB FR4t=1.0
- ② t=0.5 Insulator UL94V0
- ③ 1.0DIA PIN Material :BsB 2700 1/2H

Solder Plating

\*Tolerance  $\pm 0.5$





At rated input and output, 25[°C] ambient unless noted.

SPECIFICATION		MODEL	OC1-24SC48U1A	
<b>INPUT SPECIFICATION</b>				
Rated Input Voltage	[V] DC		DC 48	
Rated Input Current	[mA] Max.		700	
Allowable Input Voltage Range	[V]		DC40.8 ~ 56	
Inrush Current	※1		Not Specified (Reference : 33[A], 7[μs], DC48[V] in)	
Stand-by Input Current	[mA] Typ.		14	
Input Current when Remote Control is off.	[μA] Typ.		5	
Input Leakage Ripple Voltade	[mVp-p] Typ.		1000	
Efficiency	[%] Typ.		95.0	
<b>OUTPUT SPECIFICATION</b>				
Maximum Output Power	[W]		4.6 ~ 28.8	
Rated Output Voltage	[V]		24	
Rated Output Current	[mA]		1200	
Output Voltage Accuracy	[V]		23.28~24.72	
Ripple and Noise	[mVp-p] Max.	※2	200	
Voltage Regulation	a. Line Regulation	[mV] Max.	※3	120
	b. Load Regulation	[mV] Max.	※4	120
	c. Temperature Effect	[mV] Max.	-20~71[°C]	655
	d. Drift	[mV] Max.	※5	135
	e. Dynamic Line Regulation	[mV] Max.	※6	±1500
	f. Dynamic Load Regulation	[mV] Max.	※7	±200
	g. Recovery Time	[ms] Max.	※6	5
Start-up Time	[ms] Max.	※7	5	
Hold-up Time			Not Specified (= 0[S])	
<b>OPTIONAL FUNCTIONS</b>				
Over Current Protection			Auto recover, Hiccup	
Over Voltage Protection	[A] Min.		1.30	
	[V] Min.		Zener diode limiting 26.4	
Operation Indicator			None	
Remote Control (RC)	※8		Available	
Remote Sensing (RS)			None	
Power Fail (PF)			None	
Output Voltage Trimming			None	
Input Fuse			Built-in (2[A])	
Serial Operation			Not available	
Parallel Operation			Not available (1+1 redundant with using OR-ing diode is acceptable.)	
<b>GENERAL SPECIFICATIONS</b>				
Operating Temperature	[°C]		Refer to the De-Rating Condition. -20 ~ +71	
Storage Temperature	[°C]		-20 ~ +85 Except thermal shock	
Operating Humidity	[%] RH		20 ~ 90 Without condensation	
Storage Humidity	[%] RH		20 ~ 90 Without condensation	
Withstanding Voltage			Non Isolated	
Insulation Resistance			Non Isolated	
Vibration	※9		5 - 10[Hz] / XYZ axis 10[mm], 10 - 550[Hz] / 24.5[m/s <sup>2</sup> ] XYZ axis (non-operating)	
Shock	※9		294[m/s <sup>2</sup> ] / XYZ axis.	
Cooling Method			Convection Cooling	
<b>APPLIED STANDARDS</b>				
Safety Standards			North America : UL60950-1 2nd ed. 2011-12-19 Approved : CAN/CSA-C22.2 No. 60950-1-07 2nd ed. 2011-12 Approved	
<b>DIMENSION AND WEIGHT</b>				
Appearance			On-Board Type	
Dimension	[mm] (HxWxD)		10 x 32 x 21.4	
Weight	[g] Max.		8	
<b>REFERENCE</b>				
M T B F	[h]	※10	587, 986, 27	

※1 Reference : At cold start.

※2 Measured by Measured by a Bayonet type probe. Bandwidth DC-100[MHz].

※3 40.8 to 56[V] DC input voltage.

※4 At 48[V] DC , 0 to 100[%] load.

※5 Up to 8[h] after 1[h].

※6 At rated load , input voltage is changed between 40.8[V] DC and 56[V] DC.

※7 At 48[V] DC , load is changed between 25[%] and 75[%]

※8 ON : Apply DC2.8V-Input Voltage between PIN "RC" and "OV" (Inflowing current will be 5-500[μA]Typ. when 5-56V applied )

OFF: When PIN "RC" and "OV" is open

Short the PIN "RC" and "+Input Voltage" when not using the RC function

※9 The hole size of the mother board have to be 1.3[φ], Solder resist window 3.4[φ]

(In Thickness 1.6[mm] CEM-3 mother board).

Mother board have to be Non-resonated.

※10 Standard for recommended reliability estimation of components' count method of JEITA's switching power supply. According to JEITA RCR-9102B(MIL-HDBK-217F-NOTICE 2).





At rated input and output, 25[°C] ambient unless noted.

SPECIFICATION		MODEL	OC1-3.3SC1224U1A	OC1-05SC1224U1A	OC1-06SC1224U1A
<b>INPUT SPECIFICATION</b>					
Rated Input Voltage	[V] DC		12	24	12
Rated Input Current	[mA] Max.		500	300	800
Allowable Input Voltage Range	[V]		DC10.2 ~ 32		
Inrush Current		※1	Not Specified (Reference : 8[A], 10[μs], DC12[V] in / 13[A], 8[μs], DC24[V] in)		
Stand-by Input Current	[mA] Typ.		10	11	10
Input Current when Remote Control is off.	[μA] Typ.		1	2	1
Input Leakage Ripple Voltade	[mVp-p] Typ.		500	500	700
Efficiency	[%] Typ.		84.0	81.0	89.0
<b>OUTPUT SPECIFICATION</b>					
Maximum Output Power	[W]		4.6 ~ 28.8		
Rated Output Voltage	[V]		3.3	5	6
Rated Output Current	[mA]		1400	1400	1400
Output Voltage Accuracy	[V]		3.20~3.40	4.85~5.15	5.82~6.18
Ripple and Noise	[mVp-p] Max.	※2	200	200	200
Voltage Regulation	a. Line Regulation	[mV] Max. ※3	18	25	30
	b. Load Regulation	[mV] Max. ※4	18	25	30
	c. Temperature Effect	[mV] Max. -20~71[°C]	91	137	164
	d. Drift	[mV] Max. ※5	30	40	45
	e. Dynamic Line Regulation	[mV] Max. ※6	±500	±1000	±1000
	f. Dynamic Load Regulation	[mV] Max. ※7	±200	±200	±200
	g. Recovery Time	[ms] Max. ※7		5	
Start-up Time	[ms] Max.		5		
Hold-up Time			Not Specified (= 0[S])		
<b>OPTIONAL FUNCTIONS</b>					
Over Current Protection	[A] Min.		1.50	1.50	1.50
Over Voltage Protection	[V] Min.		3.63	5.75	6.90
Operation Indicator			None		
Remote Control (RC)		※8	Available		
Remote Sensing (RS)			None		
Power Fail (PF)			None		
Output Voltage Trimming			None		
Input Fuse			Built-in (2[A])		
Serial Operation			Not available		
Parallel Operation			Not available (1+1 redundant with using OR-ing diode is acceptable.)		
<b>GENERAL SPECIFICATIONS</b>					
Operating Temperature	[°C]		Refer to the De-Rating Condition. -20 ~ +71		
Storage Temperature	[°C]		-20 ~ +85 Except thermal shock		
Operating Humidity	[%] RH		20 ~ 90 Without condensation		
Storage Humidity	[%] RH		20 ~ 90 Without condensation		
Withstanding Voltage			Non Isolated		
Insulation Resistance			Non Isolated		
Vibration		※9	5 - 10[Hz] / XYZ axis 10[mm], 10 - 55 0[Hz] / 24.5[m/s <sup>2</sup> ]		
Shock		※9	294[m/s <sup>2</sup> ] / XYZ axis.		
Cooling Method			Convection Cooling		
<b>APPLIED STANDARDS</b>					
Safety Standards			North America : UL60950-1 2nd ed. 2011-12-19	Approved	
<b>DIMENSION AND WEIGHT</b>					
Appearance			On-Board Type		
Dimension	[mm] (HxWxD)		10 x 32 x 21.4		
Weight	[g] Max.		8		
<b>REFERENCE</b>					
M T B F	[h]	※10	564,882.39	564,882.39	564,882.39

- ※1 Reference : At cold start.
- ※2 Measured by Measured by a Bayonet type probe. Bandwidth DC-100[MHz].
- ※3 40.8 to 56[V] DC input voltage.
- ※4 At 48[V] DC , 0 to 100[%] load.
- ※5 Up to 8[h] after 1[h].
- ※6 At rated load , input voltage is changed between 40.8[V] DC and 56[V] DC.
- ※7 At 48[V] DC , load is changed between 25[%] and 75[%]
- ※8 ON : Apply DC2.8V-Input Voltage between PIN "RC" and "OV" (Inflowing current  
OFF: When PIN "RC" and "OV" is open  
Short the PIN "RC" and "+Input Voltage" when not using the RC function
- ※9 The hole size of the mother board have to be 1.3[φ], Solder resist window  
(In Thickness 1.6[mm] CEM-3 mother board).  
Mother board have to be Non-resonated.
- ※10 Standard for recommended reliability estimation of components' count method  
of JEITA's switching power supply. According to JEITA RCR-9102B (MIL-HDBK-





At rated input and output, 25[°C] ambient unless noted.

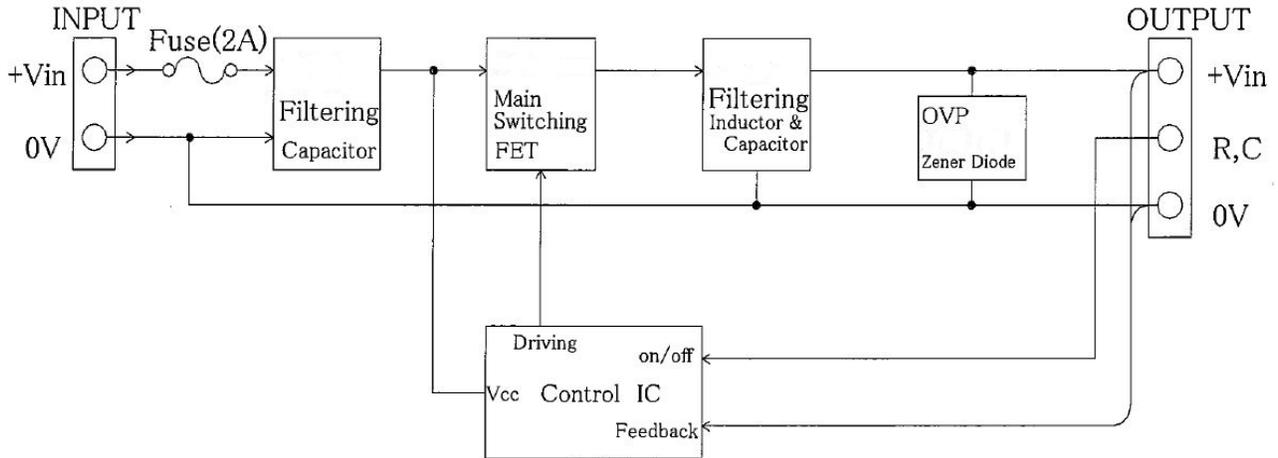
MODEL		OC1-		OC1-		OC1-		OC1-		OC1-		OC1-			
		3.3SC2448U1A		05SC2448U1A		06SC2448U1A		09SC2448U1A		12SC2448U1A		15SC2448U1A			
<b>SPECIFICATION</b>															
<b>INPUT SPECIFICATION</b>															
Rated Input Voltage	[V] DC	24	48	24	48	24	48	24	48	24	48	24	48		
Rated Input Current	[mA] Max.	300	150	400	200	450	250	650	350	800	400	850	450		
Allowable Input Voltage Range	[V]	DC20.4 ~ 56													
Inrush Current	※1	Not Specified (Reference : 16[A], 8[μs], DC24[V] in / 33[A], 7[μs], DC48[V] in)													
Stand-by Input Current	[mA] Typ.	11	13	11	13	11	13	11	13	12	13	12	13		
Input Current when Remote Control is off.	[μA] Typ.	2	5	2	5	2	5	2	5	2	5	2	5		
Input Leakage Ripple Voltage	[mVp-p] Typ.	500	500	700	700	700	700	700	700	800	800	900	900		
Efficiency	[%] Typ.	79.0	74.0	85.0	82.0	87.0	83.0	90.0	87.0	93.0	90.0	95.0	92.0		
<b>OUTPUT SPECIFICATION</b>															
Maximum Output Power	[W]	4.6 ~ 28.8													
Rated Output Voltage	[V]	3.3		5		6		9		12		15			
Rated Output Current	[mA]	1400		1400		1400		1400		1300		1200			
Output Voltage Accuracy	[V]	3.20~3.40		4.85~5.15		5.82~6.18		8.73~9.27		11.64~12.36		14.55~15.45			
Ripple and Noise	[mVp-p] Max.	※2 200		200		200		200		200		200			
Voltage Regulation	a. Line Regulation	[mV] Max.	※3 18		25		30		45		60		75		
	b. Load Regulation	[mV] Max.	※4 18		25		30		45		60		75		
	c. Temperature Effect	[mV] Max.	-20~71[°C] 90		137		164		246		328		410		
	d. Drift	[mV] Max.	※5 30		40		45		60		75		90		
	e. Dynamic Line Regulation	[mV] Max.	※6 ±500		±1000		±1000		±1500		±1500		±1500		
	f. Dynamic Load Regulation	[mV] Max.	※7 ±200		±200		±200		±200		±200		±200		
	g. Recovery Time	[ms] Max.	※6		※7		5		5		5		5		
Start-up Time	[ms] Max.	※6		※7		5		5		5		5			
Hold-up Time		Not Specified (= 0[S])													
<b>OPTIONAL FUNCTIONS</b>															
Over Current Protection	[A] Min.	1.50		1.50		1.50		1.50		1.40		1.30			
Over Voltage Protection	[V] Min.	3.63		5.75		6.90		10.35		13.80		17.25			
Operation Indicator		None													
Remote Control (RC)	※8	Available													
Remote Sensing (RS)		None													
Power Fail (PF)		None													
Output Voltage Trimming		None													
Input Fuse		Built-in (2[A])													
Serial Operation		Not available													
Parallel Operation		Not available (1+1 redundant with using OR-ing diode is acceptable.)													
<b>GENERAL SPECIFICATIONS</b>															
Operating Temperature	[°C]	Refer to the De-Rating Condition. -20 ~ +71													
Storage Temperature	[°C]	-20 ~ +85 Except thermal shock													
Operating Humidity	[%] RH	20 ~ 90 Without condensation													
Storage Humidity	[%] RH	20 ~ 90 Without condensation													
Withstanding Voltage		Non Isolated													
Insulation Resistance		Non Isolated													
Vibration	※9	5 - 10[Hz] / XYZ axis 10[mm], 10 - 550[Hz] / 24.5[m/s <sup>2</sup> ] XYZ axis (non-operating)													
Shock	※9	294[m/s <sup>2</sup> ] / XYZ axis.													
Cooling Method		Convection Cooling													
<b>APPLIED STANDARDS</b>															
Safety Standards		North America : UL60950-1 2nd ed. 2011-12-19										Approved			
												: CAN/CSA-C22.2 No. 60950-1-07 2nd ed. 2011-12 Approved			
<b>DIMENSION AND WEIGHT</b>															
Appearance		On-Board Type													
Dimension	[mm] (HxWxD)	10 x 32 x 21.4													
Weight	[g] Max.	8													
<b>REFERENCE</b>															
M T B F	[h]	※10		564, 882.39		564, 882.39		564, 882.39		564, 882.39		570, 125.43		570, 125.43	

- ※1 Reference : At cold start.
- ※2 Measured by Measured by a Bayonet type probe. Bandwidth DC-
- ※3 40.8 to 56[V] DC input voltage.
- ※4 At 48[V] DC , 0 to 100[%] load.
- ※5 Up to 8[h] after 1[h].
- ※6 At rated load , input voltage is changed between 40.8[V] DC and
- ※7 At 48[V] DC , load is changed between 25[%] and 75[%]
- ※8 ON : Apply DC2, 8V-Input Voltage between PIN "RC" and "OV"  
OFF: When PIN "RC" and "OV" is open  
Short the PIN "RC" and "+Input Voltage" when not using the RC function
- ※9 The hole size of the mother board have to be 1.3[φ], Solder  
(In Thickness 1.6[mm] CEM-3 mother board).  
Mother board have to be Non-resonated.
- ※10 Standard for recommended reliability estimation of components' count method of JEITA's switching power supply. According to

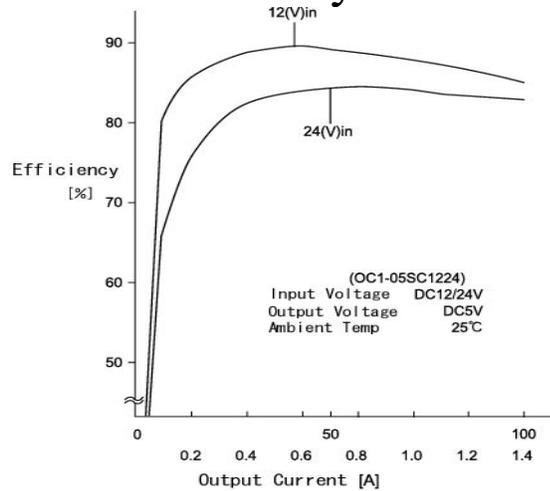




## Block Diagram



## Efficiency Curve





SPEC SHEET

Subject	Part number	Old IC	New IC
<b>Rated Input current</b>	OC1-3. 3SC1224u1	550/250 [mA]	500/300 [mA]Max.
	OC1-05SC1224u1	800/350 [mA]	800/400 [mA]Max.
	OC1-06SC1224u1	950/450 [mA]	900/450 [mA]Max.
	OC1-3. 3SC2448u1	300/150 [mA]	300/150 [mA]Max.
	OC1-05SC2448u1	450/200 [mA]	400/200 [mA]Max.
	OC1-06SC2448u1	500/250 [mA]	450/250 [mA]Max.
	OC1-09SC2448u1	700/350 [mA]	650/350 [mA]Max.
	OC1-12SC2448u1	850/400 [mA]	800/400 [mA]Max.
	OC1-15SC2448u1	950/450 [mA]	850/450 [mA]Max.
	OC1-24SC48u1	750 [mA]	700 [mA]Max.
<b>No load Rated Input current</b>	OC1-3. 3SC1224u1	4/5 [mA]Typ.	10/11 [mA]Typ.
	OC1-05SC1224u1	5/3 [mA]Typ.	10/11 [mA]Typ.
	OC1-06SC1224u1	5/3 [mA]Typ.	10/11 [mA]Typ.
	OC1-3. 3SC2448u1	4/5 [mA]Typ.	11/13 [mA]Typ.
	OC1-05SC2448u1	2/2 [mA]Typ.	11/13 [mA]Typ.
	OC1-06SC2448u1	2/2 [mA]Typ.	11/13 [mA]Typ.
	OC1-09SC2448u1	3/2 [mA]Typ.	11/13 [mA]Typ.
	OC1-12SC2448u1	4/4 [mA]Typ.	12/13 [mA]Typ.
	OC1-15SC2448u1	6/4 [mA]Typ.	12/13 [mA]Typ.
	OC1-24SC48u1	4 [mA]Typ.	14 [mA]Typ.
<b>Input current when RC is OFF</b>	OC1-3. 3SC1224u1	0. 2/0. 56 [mA]Typ.	1/2 [μ A]Typ.
	OC1-05SC1224u1	0. 24/0. 6 [mA]Typ.	1/2 [μ A]Typ.
	OC1-06SC1224u1	0. 24/1. 15 [mA]Typ.	1/2 [μ A]Typ.
	OC1-3. 3SC2448u1	0. 39/0. 9 [mA]Typ.	2/5 [μ A]Typ.
	OC1-05SC2448u1	0. 42/0. 93 [mA]Typ.	2/5 [μ A]Typ.
	OC1-06SC2448u1	0. 42/0. 92 [mA]Typ.	2/5 [μ A]Typ.
	OC1-09SC2448u1	0. 37/0. 9 [mA]Typ.	2/5 [μ A]Typ.
	OC1-12SC2448u1	0. 34/1. 47 [mA]Typ.	2/5 [μ A]Typ.
	OC1-15SC2448u1	0. 27/1. 50 [mA]Typ.	2/5 [μ A]Typ.
	OC1-24SC48u1	0. 56 [mA]Typ.	5 [μ A]Typ.
<b>Input current leakage ripple voltage</b>	OC1-3. 3SC1224u1	1000/1000[mVp-p]Typ.	500/500[mVp-p]Typ.
	OC1-05SC1224u1	1000/1000[mVp-p]Typ.	700/700[mVp-p]Typ.
	OC1-06SC1224u1	1000/1000[mVp-p]Typ.	700/700[mVp-p]Typ.
	OC1-3. 3SC2448u1	700/1000[mVp-p]Typ.	500/500[mVp-p]Typ.
	OC1-05SC2448u1	1000/1300[mVp-p]Typ.	700/700[mVp-p]Typ.
	OC1-06SC2448u1	1200/1800[mVp-p]Typ.	700/700[mVp-p]Typ.
	OC1-09SC2448u1	1500/2000[mVp-p]Typ.	700/700[mVp-p]Typ.
	OC1-12SC2448u1	1500/2000[mVp-p]Typ.	800/800[mVp-p]Typ.
	OC1-15SC2448u1	1500/2500[mVp-p]Typ.	900/900[mVp-p]Typ.
	OC1-24SC48u1	3000 [mVp-p]Typ.	1000 [mVp-p]Typ.





<b>Efficiency</b>	OC1-3.3SC1224u1	78/75 [%]Typ.	84/81 [%]Typ.
	OC1-05SC1224u1	84/82 [%]Typ.	89/87 [%]Typ.
	OC1-06SC1224u1	86/84 [%]Typ.	90/88 [%]Typ.
	OC1-3.3SC2448u1	74/69 [%]Typ.	79/74 [%]Typ.
	OC1-05SC2448u1	81/78 [%]Typ.	85/82 [%]Typ.
	OC1-06SC2448u1	84/80 [%]Typ.	87/83 [%]Typ.
	OC1-09SC2448u1	88/85 [%]Typ.	90/87 [%]Typ.
	OC1-12SC2448u1	91/88 [%]Typ.	93/90 [%]Typ.
	OC1-15SC2448u1	93/90 [%]Typ.	95/92 [%]Typ.
	OC1-24SC48u1	93 [%]Typ.	95 [%]Typ.
<b>Dynamic Load Voltage</b>	OC1-3.3SC1224u1	±500[mV]Max.	±500[mV]Max.
	OC1-05SC1224u1	±600[mV]Max.	±1000[mV]Max.
	OC1-06SC1224u1	±600[mV]Max.	±1000[mV]Max.
	OC1-3.3SC2448u1	±500[mV]Max.	±500[mV]Max.
	OC1-05SC2448u1	±600[mV]Max.	±1000[mV]Max.
	OC1-06SC2448u1	±600[mV]Max.	±1000[mV]Max.
	OC1-09SC2448u1	±600[mV]Max.	±1500[mV]Max.
	OC1-12SC2448u1	±1000[mV]Max.	±1500[mV]Max.
	OC1-15SC2448u1	±1000[mV]Max.	±1500[mV]Max.
	OC1-24SC48u1	±400[mV]Max.	±1500[mV]Max.
<b>Remote Control (Add voltage ON)</b>	All model	ON when 4.5-56V	ON when 2.8-56V
<b>Remote Control Current</b>	All model	150~1800 [ $\mu$ A]	5~500 [ $\mu$ A]
<b>Block Diagram</b>	All model		See attached



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**».



## 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).



Телефон: 8 (812) 309-75-97 (многоканальный)

Факс: 8 (812) 320-03-32

Электронная почта: [ocean@oceanchips.ru](mailto:ocean@oceanchips.ru)

Web: <http://oceanchips.ru/>

Адрес: 198099, г. Санкт-Петербург, ул. Калинина, д. 2, корп. 4, лит. А