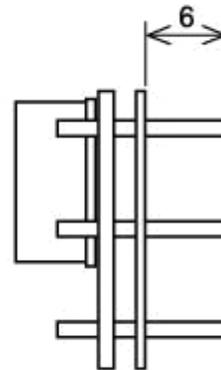
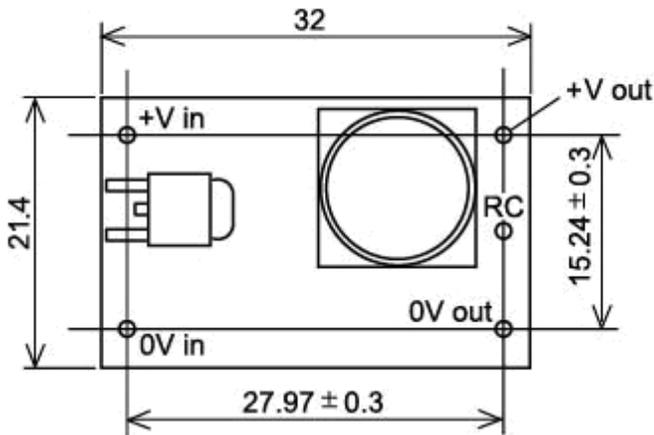


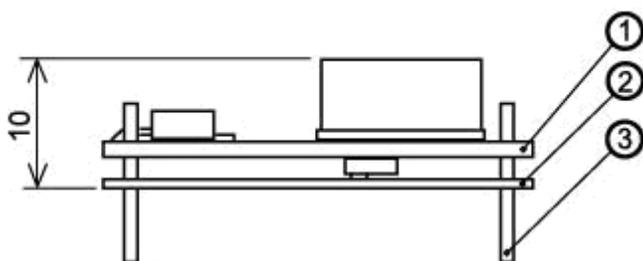


## OC1XX-SCXXXX-A

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.

MODEL		OC1-3.3SC1224U1A	OC1-05SC1224U1A	OC1-06SC1224U1A			
<b>SPECIFICATION</b>							
<b>INPUT SPECIFICATION</b>							
Rated Input Voltage	[V] DC	12	24	12	24	12	24
Rated Input Current	[mA]Max.	500	300	800	400	900	450
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	11	10	11
Input Current when Remote Control is off.	[μA]Typ.	1	2	1	2	1	2
Input Leakage Ripple Voltade	[mVp-p]Typ.	500	500	700	700	700	700
Efficiency	[%]Typ.	84.0	81.0	89.0	87.0	90.0	88.0
<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	
	b. Load Regulation	[mV]Max.	※4	18		25	
	c. Temperature Effect	[mV]Max.	-20~71[°C]	91		137	
	d. Drift	[mV]Max.	※5	30		40	
	e. Dynamic Line Regulation	[mV]Max.	※6	±500		±1000	
	f. Dynamic Load Regulation	[mV]Max.	※7	±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.

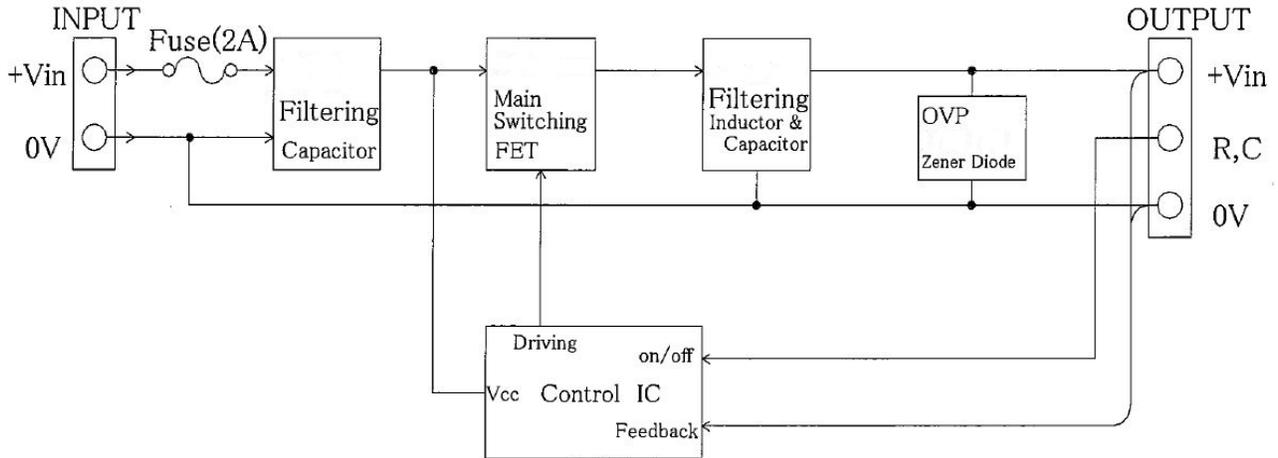
MODEL		OC1-		OC1-		OC1-		OC1-		OC1-		OC1-		
		3.3SC2448U1A		05SC2448U1A		06SC2448U1A		09SC2448U1A		12SC2448U1A		15SC2448U1A		
<b>SPECIFICATION</b>														
<b>INPUT SPECIFICATION</b>														
Rated Input Voltage	[V] DC	24	48	24	48	24	48	24	48	24	48	24	48	
Rated Input Current	[mA] Max.	300	150	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.	5		5		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

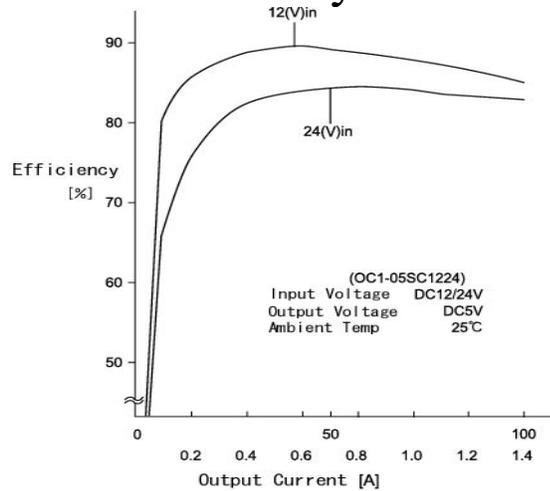




## Block Diagram



## 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