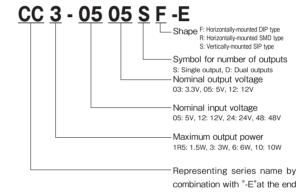
Insulation type DC-DC converter



Features

- Mounting area halved compared to existing products
- Nonuse of tantalum capacitor or aluminum electrolytic capacitor
- Remote On/Off function incorporated in all series of products
- High accuracy of ± 3% in output voltage (10W of lower single output)
- ●5-side metal-shielded low noise design
- Lightweight design with no resin filled up
- Supports DIP insertion, SMD mounting and SIP vertical insertion (3W products)

■ Model-naming method



■ Conformity to RoHS Directive

Applications



■ Product Line up

Output	Input			el name oltage: 3.	3V)			el name voltage: 5'	V)	(O	Model name (output voltage: 12V/15V)				Model name (output voltage: ±12V/±15V)			
power	voltage	Output current	DIP type	SMD type	SIP type	Output current	DIP type	SMD type	<u>.</u>	Output current	DIP type	SMD type	SIP type	Output current	DIP type	SMD type	SIP type	
	5V	0.4A	CC1R5-0503SF-E	CC1R5-0503SR-E		0.3A	CC1R5-0505SF-E	CC1R5-0505SR-E		0.125A (0.1A)	CC1R5-0512SF-E	CC1R5-0512SR-E	-	0.06A (0.05A)	CC1R5-0512DF-E	CC1R5-0512DR-E		
4.514	12V	0.4A	CC1R5-1203SF-E	CC1R5-1203SR-E		0.3A	CC1R5-1205SF-E	CC1R5-1205SR-E		0.125A (0.1A)	CC1R5-1212SF-E	CC1R5-1212SR-E	-	0.06A (0.05A)	CC1R5-1212DF-E	CC1R5-1212DR-E		
1.5W	24V	0.4A	CC1R5-2403SF-E	CC1R5-2403SR-E	-	0.3A	CC1R5-2405SF-E	CC1R5-2405SR-E		0.125A (0.1A)	CC1R5-2412SF-E	CC1R5-2412SR-E	-	0.06A (0.05A)	CC1R5-2412DF-E	CC1R5-2412DR-E		
	48V	0.4A	CC1R5-4803SF-E	CC1R5-4803SR-E	-	0.3A	CC1R5-4805SF-E	CC1R5-4805SR-E		0.125A (0.1A)	CC1R5-4812SF-E	CC1R5-4812SR-E	-	0.06A (0.05A)	CC1R5-4812DF-E	CC1R5-4812DR-E		
	5V	0.8A	CC3-0503SF-E	CC3-0503SR-E	CC3-0503SS-E	0.6A	CC3-0505SF-E	CC3-0505SR-E	CC3-0505SS-E	0.25A (0.2A)	CC3-0512SF-E	CC3-0512SR-E	CC3-0512SS-E	0.125A (0.1A)	CC3-0512DF-E	CC3-0512DR-E	CC3-0512DS-E	
3W	12V	0.8A	CC3-1203SF-E	CC3-1203SR-E	CC3-1203SS-E	0.6A	CC3-1205SF-E	CC3-1205SR-E	CC3-1205SS-E	0.25A (0.2A)	CC3-1212SF-E	CC3-1212SR-E	CC3-1212SS-E	0.125A (0.1A)	CC3-1212DF-E	CC3-1212DR-E	CC3-1212DS-E	
SW	24V	0.8A	CC3-2403SF-E	CC3-2403SR-E		0.6A	CC3-2405SF-E	CC3-2405SR-E	CC3-2405SS-E	0.25A (0.2A)	CC3-2412SF-E	CC3-2412SR-E	CC3-2412SS-E	0.125A (0.1A)	CC3-2412DF-E	CC3-2412DR-E	CC3-2412DS-E	
	48V	0.8A	CC3-4803SF-E	CC3-4803SR-E	CC3-4803SS-E	0.6A	CC3-4805SF-E	CC3-4805SR-E	CC3-4805SS-E	0.25A (0.2A)	CC3-4812SF-E	CC3-4812SR-E	-	0.125A (0.1A)	CC3-4812DF-E	CC3-4812DR-E	CC3-4812DS-E	
	5V	1.2A	CC6-0503SF-E	CC6-0503SR-E		1A	CC6-0505SF-E	CC6-0505SR-E		0.5A (0.4A)	CC6-0512SF-E	CC6-0512SR-E	-	0.25A (0.2A)	CC6-0512DF-E	CC6-0512DR-E		
6W	12V	1.2A	CC6-1203SF-E	CC6-1203SR-E		1.2A	CC6-1205SF-E	CC6-1205SR-E		0.5A (0.4A)	CC6-1212SF-E	CC6-1212SR-E	-	0.25A (0.2A)	CC6-1212DF-E	CC6-1212DR-E		
OW	24V	1.2A	CC6-2403SF-E	CC6-2403SR-E		1.2A	CC6-2405SF-E	CC6-2405SR-E		0.5A (0.4A)	CC6-2412SF-E	CC6-2412SR-E	-	0.25A (0.2A)	CC6-2412DF-E	CC6-2412DR-E		
	48V	1.2A	CC6-4803SF-E	CC6-4803SR-E		1.2A	CC6-4805SF-E	CC6-4805SR-E		0.5A (0.4A)	CC6-4812SF-E	CC6-4812SR-E	-	0.25A (0.2A)	CC6-4812DF-E	CC6-4812DR-E		
	5V	2.5A	CC10-0503SF-E	CC10-0503SR-E		2A	CC10-0505SF-E	CC10-0505SR-E		0.8A (0.64A)	CC10-0512SF-E	CC10-0512SR-E	-	0.4A (0.32A)	CC10-0512DF-E	CC10-0512DR-E		
10W	12V	2.5A	CC10-1203SF-E	CC10-1203SR-E		2A	CC10-1205SF-E	CC10-1205SR-E		1A (0.8A)	CC10-1212SF-E	CC10-1212SR-E	-	0.45A (0.36A)	CC10-1212DF-E	CC10-1212DR-E		
TOW	24V	2.5A	CC10-2403SF-E	CC10-2403SR-E		2A	CC10-2405SF-E	CC10-2405SR-E		1A (0.8A)	CC10-2412SF-E	CC10-2412SR-E	-	0.45A (0.36A)	CC10-2412DF-E	CC10-2412DR-E		
	48V	2.5A	CC10-4803SF-E	CC10-4803SR-E		2A	CC10-4805SF-E	CC10-4805SR-E		1A (0.8A)	CC10-4812SF-E	CC10-4812SR-E	-	0.45A (0.36A)	CC10-4812DF-E	CC10-4812DR-E		

CC1R5-E Specifications

ITEMS/UN	NITS	IODEL	CC1R5-0503Sx-E	CC1R5-0505Sx-E	CC1R5-0	512Sx-E	CC1R5-0512Dx-E			
	Nominal Voltage	V			DC	5.0				
lan	Voltage Range	V		DC4.5-9.0						
Input	Efficiency (typ) (*1)	%	71	77	80		79			
	Current (typ) (*1)	Α	0.372	0.390	0.3	375	0.3	80		
	Nominal Voltage	VDC	3.3	5	12	15	± 12	± 15		
	Maximum Current	Α	0.400	0.300	0.125	0.100	0.060	0.050		
	Maximum Power (*2)	W	1.32			1.5				
	Maximum Line Regulation (Within input voltage range)	mV	2	0	4	0	8	0		
Output	Maximum Load Regulation (0-100% load) (*3)	mV	4	0	10	00	60	00		
Output	Temperature Coefficient		801	m\/	200	lm\/	300	m\/		
	(Ambient temperature-40°C to +50°C)		001	IIV	200	IIIV	300	IIIV		
	Max Power Total Regulation (max)(*4)	%	± 3			± 5				
	Maximum Ripple & Noise (typ/max) (*5)	mVp-p	40/	120		30/	120			
	Voltage Adjustable Range	VDC	3.15-3.6	4.75-6.0	11.4-	15.0	± 11.4-	± 15.0		
	Over Current Protection (*6)				Avail	lable				
Function	Over Voltage Protection		Not available							
	Remote ON/OFF Control		Available							
	Operating Ambient Temperature	℃	-40 to +85							
	Storage Ambient Temperature	°C	-40 to +85							
Environment	Operating Ambient Humidity	% RH		tions of maximum 3						
LIMIOIIIIGIIL	Storage Ambient Humidity	% RH		tions of maximum 3						
	Vibration		10-	55Hz, 15 minutes s				ach		
	Shock			980m/s² (100G)	, 6ms, 6 directions,	3 times for each, i	n non-operation			
Isolation	Withstand Voltage		Between input terminal and case, between input terminal and output terminal, and between output terminal and case: 500VAC (for 1 minute)							
Isolation	Isolation Resistance		Between input terminal and output terminal: 500VDC, 50MΩ min							
Standards	Safety Standards		Approved by UL62368-1, CSA62368-1, EN62368-1, UL60950-1, CSA60950-1, EN60950-1. (Expire date of 60950-1: 20/12/2020							
Mechanical	Weight (typ)	g	3.2							
wicoldillodi	Size (W x H x D)	mm		DIP: 1	6.51 x 8.5 x 16.6 /	SMD: 16.51 x 8.8 x	c 16.6			

Note: "x" in model names is to be replaced by a symbol which represents the terminal configuration (F: DIP/R: SMD) for actual model names.

Note: With nominal input/output voltage, maximum output current, and Ta=25°C, if not specified separately.

Note: For 12V/±12V models, output voltage can be set to 15V/±15V by connecting the output adjustment terminal TRM to -Vout.

Note: For \pm 12V model, output voltage can be set to 24V or 30V single output by making the COM terminal open.

- (*1) With nominal input voltage, maximum output current, and Ta=25 $^{\circ}$ C.
- (*2) The maximum output power value is between -40°C and +50°C. For use in outside this temperature range, derating is needed.
- (*3) In balanced load for dual outputs ("balanced load" means a condition where the +output and -output of load current are equal).
- (*4) Output voltage includes input change, load change (balanced load), and temperature change.
- (*5) In 50MHz, Ta=25°C
- (*6) Output current restriction method. Automatically resumes when the causes are removed. Never operate the unit under output-shorted or overload conditions for over 30 seconds.

ITEMS/UN	NITS	IODEL	CC1R5-1203\$x-E	CC1R5-1205Sx-E	CC1R5-1	1212\$x-E	CC1R5-1	212Dx-E			
	Nominal Voltage	V	DC12								
lanet	Voltage Range	V									
Input	Efficiency (typ) (*1)		73 78		82		81				
	Current (typ) (*1)	Α	0.151	0.160	0.	152	0.1	54			
	Nominal Voltage	VDC	3.3	5	12	15	± 12	± 15			
	Maximum Current	Α	0.400	0.300	0.125	0.100	0.060	0.050			
Output	Maximum Power (*2)	W	1.32			1.5					
	Maximum Line Regulation (Within input voltage range)	mV	2	0	۷	10	8	0			
	Maximum Load Regulation (0-100% load) (*3)	mV	4	0	1	00	60	00			
	Temperature Coefficient		00.	m\/	200)m\/	200	lm\/			
	(Ambient temperature – 40°C to +50°C)		80mV		200mV		300mV				
	Max Power Total Regulation (max)(*4)	%		± 3				± 5			
	Maximum Ripple & Noise (typ/max) (*5)	mVp-p	40/	120		30/	120				
	Voltage Adjustable Range		3.15-3.6	4.75-6.0	11.4	-15.0	± 11.4	± 15.0			
	Over Current Protection (*6)				Ava	ilable					
Function	Over Voltage Protection				Not av	vailable					
	Remote ON/OFF Control			Available							
	Operating Ambient Temperature	$^{\circ}$	-40 to +85								
	Storage Ambient Temperature	Ç			-40 t	o +85					
Environment	Operating Ambient Humidity	% RH	5-95 (the condi	tions of maximum 3	8°C in wet bulb te	mperature and non-	-condensation shou	ld be ensured.)			
Elivilolillielit	Storage Ambient Humidity	% RH	5-95 (the condi	tions of maximum 3	8°C in wet bulb te	mperature and non-	-condensation shou	ld be ensured.)			
	Vibration		10-	55Hz, 15 minutes s	weep and 1.52mn	n total amplitude, 3	directions, 2h for ea	ach			
	Shock		980m/s² (100G), 6ms, 6 directions, 3 times for each, in non-operation								
Isolation	Withstand Voltage		Between input termina	utput terminal and case:	500VAC (for 1 minut						
isolation	Isolation Resistance			Between input terminal and output terminal: 500VDC, 50MΩ min							
Standards	Safety Standards		Approved by UL623	Approved by UL62368-1, CSA62368-1, EN62368-1, UL60950-1, CSA60950-1, EN60950-1. (Expire date of 60950-1: 20/12/2							
Mechanical	Weight (typ)	g	3.2								
wicolidiliodi	Size (W x H x D)	mm		DIP: 1	6.51 x 8.5 x 16.6	SMD: 16.51 x 8.8	x 16.6				

Note: "x" in model names is to be replaced by a symbol which represents the terminal configuration (F: DIP/R: SMD) for actual model names.

Note: With nominal input/output voltage, maximum output current, and Ta=25°C, if not specified separately.

Note: For 12V/±12V models, output voltage can be set to 15V/±15V by connecting the output adjustment terminal TRM to -Vout.

- (*1) With nominal input voltage, maximum output current, and Ta=25°C.
- (*2) The maximum output power value is between -40°C and +50°C. For use in outside this temperature range, derating is needed.
- (*3) In balanced load for dual outputs ("balanced load" means a condition where the +output and -output of load current are equal).
- (*4) Output voltage includes input change, load change (balanced load), and temperature change.
- (*5) In 50MHz, Ta=25°C.
- (*6) Output current restriction method. Automatically resumes when the causes are removed. Never operate the unit under output-shorted or overload conditions for over 30 seconds.

ITEMS/UN	NITS	IODEL	CC1R5-2403Sx-E	CC1R5-2405\$x-E	CC1R5-2	412Sx-E	CC1R5-2412Dx-E				
	Nominal Voltage	V		,	DC	24					
Input	Voltage Range	V			DC1	8-36					
input	Efficiency (typ) (*1)	%	72	77	8	81)			
	Current (typ) (*1)	Α	0.076	0.081	0.0	77	0.0	79			
	Nominal Voltage	VDC	3.3	5	12	15	± 12	± 15			
	Maximum Current	Α	0.400	0.300	0.125	0.100	0.060	0.050			
	Maximum Power (*2)	W	1.32			1.5					
	Maximum Line Regulation (Within input voltage range)	mV	2	0	41	0	80)			
Output	Maximum Load Regulation (0-100% load) (*3)	mV	4	0	10	00	60	0			
Output	Temperature Coefficient		80.	m\/	200	m\/	300	m\/			
	(Ambient temperature-40°C to +50°C)		001	80mV		200mV		110			
	Max Power Total Regulation (max)(*4)	%		± 3				± 5			
	Maximum Ripple & Noise (typ/max) (*5)	mVp-p	40/	120		30/	120				
	Voltage Adjustable Range	VDC	3.15-3.6	4.75-6.0	11.4-	15.0	± 11.4-	± 15.0			
	Over Current Protection (*6)				Avail	able					
Function	Over Voltage Protection			Not available							
	Remote ON/OFF Control				Avail						
	Operating Ambient Temperature	℃	-40 to +85								
	Storage Ambient Temperature	℃			-40 to						
Environment	Operating Ambient Humidity	% RH		tions of maximum 3							
LITTIONNICH	Storage Ambient Humidity	% RH		tions of maximum 3							
	Vibration		10-	55Hz, 15 minutes s				ch			
	Shock			980m/s² (100G), 6ms, 6 directions, 3 times for each, in non-operation							
Isolation	Withstand Voltage		Between input termina	l and case, between inpu		500VAC (for 1 minute)					
	Isolation Resistance		Between input terminal and output terminal: 500VDC, 50MΩ min								
Standards	Safety Standards		Approved by UL62368-1, CSA62368-1, EN62368-1, UL60950-1, CSA60950-1, EN60950-1. (Expire date of 60950-								
Mechanical	Weight (typ)	g		3.2							
	Size (W x H x D)	mm		DIP: 1	6.51 x 8.5 x 16.6 /	SMD: 16.51 x 8.8 x	c 16.6				

Note: "x" in model names is to be replaced by a symbol which represents the terminal configuration (F: DIP/R: SMD) for actual model names.

Note: With nominal input/output voltage, maximum output current, and Ta=25°C, if not specified separately.

Note: For 12V/±12V models, output voltage can be set to 15V/±15V by connecting the output adjustment terminal TRM to -Vout.

Note: For \pm 12V model, output voltage can be set to 24V or 30V single output by making the COM terminal open.

- (*1) With nominal input voltage, maximum output current, and Ta=25°C.
- (*2) The maximum output power value is between -40°C and +50°C. For use in outside this temperature range, derating is needed.
- (*3) In balanced load for dual outputs ("balanced load" means a condition where the +output and -output of load current are equal).
- (*4) Output voltage includes input change, load change (balanced load), and temperature change.
- (*5) In 50MHz, Ta=25°C.
- (*6) Output current restriction method. Automatically resumes when the causes are removed. Never operate the unit under output-shorted or overload conditions for over 30 seconds.

ITEMS/UN	NITS	IODEL	CC1R5-4803Sx-E	CC1R5-4805Sx-E	CC1R5-4	4812Sx-E	CC1R5-4	812Dx-E		
	Nominal Voltage	V	DC48							
I married	Voltage Range	V		DC36-76						
Input	Efficiency (typ) (*1)		70 76		80		79			
	Current (typ) (*1)	Α	0.039	0.041	0.0	039	0.0)40		
	Nominal Voltage	VDC	3.3	5	12	15	± 12	± 15		
	Maximum Current	Α	0.400	0.300	0.125	0.100	0.060	0.050		
	Maximum Power (*2)	W	1.32			1.5				
	Maximum Line Regulation (Within input voltage range)	mV	2	0	4	40	8	0		
Output	Maximum Load Regulation (0-100% load) (*3)	mV	4	0	1	00	60	00		
Output	Temperature Coefficient		900	m\/	200	Om\/	200	\m\/		
	(Ambient temperature–40°C to +50°C)		80mV		200mV		300mV			
	Max Power Total Regulation (max)(*4)	%	±3			± 5				
	Maximum Ripple & Noise (typ/max) (*5)	mVp-p	40/120			30/	120			
	Voltage Adjustable Range		3.15-3.6	4.75-6.0	11.4	-15.0	± 11.4-	± 15.0		
	Over Current Protection (*6)				Ava	ilable				
Function	Over Voltage Protection					vailable				
	Remote ON/OFF Control				Ava	ilable				
	Operating Ambient Temperature	℃	-40 to +85							
	Storage Ambient Temperature	℃				o +85				
Environment	Operating Ambient Humidity	% RH	5-95 (the condi	tions of maximum 3	8°C in wet bulb te	mperature and non-	condensation shou	ıld be ensured.)		
LIMIOIIIICIIL	Storage Ambient Humidity	% RH	5-95 (the condi	tions of maximum 3	8°C in wet bulb te	mperature and non-	condensation shou	ıld be ensured.)		
	Vibration		10-	55Hz, 15 minutes s				ach		
	Shock		980m/s² (100G), 6ms, 6 directions, 3 times for each, in non-operation							
Isolation	Withstand Voltage		Between input termina	and case, between inpu				500VAC (for 1 minut		
Isolation	Isolation Resistance		Between input terminal and output terminal: 500VDC, 50MΩ min							
Standards	Safety Standards		Approved by UL62368-1, CSA62368-1, EN62368-1, UL60950-1, CSA60950-1, EN60950-1. (Expire date of 60950-1: 20/12/2							
Mechanical	Weight (typ)	g	3.2							
wiconanioal	Size (W x H x D)	mm		DIP: 1	6.51 x 8.5 x 16.6	/ SMD: 16.51 x 8.8 x	k 16.6			

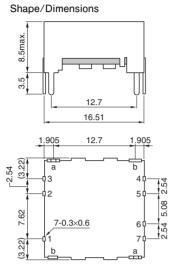
Note: "x" in model names is to be replaced by a symbol which represents the terminal configuration (F: DIP/R: SMD) for actual model names.

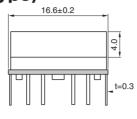
Note: With nominal input/output voltage, maximum output current, and Ta=25°C, if not specified separately.

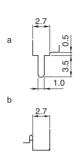
Note: For 12V/±12V models, output voltage can be set to 15V/±15V by connecting the output adjustment terminal TRM to -Vout.

- (*1) With nominal input voltage, maximum output current, and Ta=25°C.
- (*2) The maximum output power value is between -40°C and +50°C. For use in outside this temperature range, derating is needed.
- (*3) In balanced load for dual outputs ("balanced load" means a condition where the +output and -output of load current are equal).
- (*4) Output voltage includes input change, load change (balanced load), and temperature change.
- (*5) In 50MHz, Ta=25°C.
- (*6) Output current restriction method. Automatically resumes when the causes are removed. Never operate the unit under output-shorted or overload conditions for over 30 seconds.

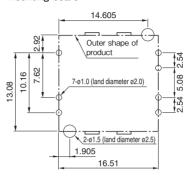
CC1R5-xxxxF-E (DIP type)





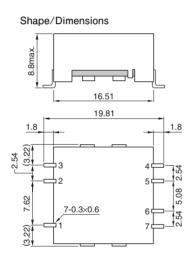


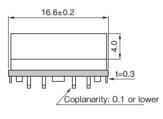
Recommended measurements for mounting board



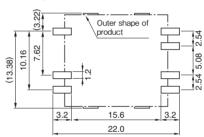
 $\label{eq:Unit:mm} \mbox{Unit: mm}$ Allowable tolerance is ± 0.5 if not specified separately.

CC1R5-xxxxR-E (SMD type)



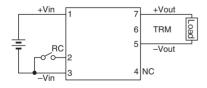


Recommended measurements for mounting board



 $\label{eq:Unit:mm} \mbox{Unit: mm}$ Allowable tolerance is ± 0.5 if not specified separately.

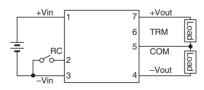
Connection diagram CC1R5-xxxxSx-E



$\frac{\text{Terminal connections}}{\text{No.1 +Vin}}$

INO. I	+vin	
No.2	RC	
No.3	–Vin	
No.4	NC	
No.5	-Vout	
No.6	TRM	
No.7	+Vout	Τ

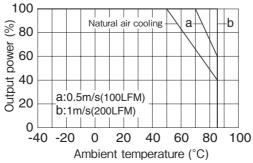
CC1R5-xxxxDx-E



Terminal connections

No.1	+Vin
No.2	RC
No.3	–Vin
No.4	-Vout
No.5	Common out
No.6	TRM
No.7	+Vout

Derating Curve



CC3-E (DIP/SMD)

CC3-E Specifications

ITEMS/UN	NITS	IODEL	CC3-0503Sx-E	CC3-0505Sx-E	CC3-05	512Sx-E	CC3-05	12Dx-E		
	Nominal Voltage	V			DC	C5.0				
Innut	Voltage Range	V		DC4.5-9.0						
Input	Efficiency (typ) (*1)	%	73	77	3	32	8	1		
	Current (typ) (*1)	Α	0.723	0.779	0.7	732	0.7	41		
	Nominal Voltage	VDC	3.3	5	12	15	± 12	± 15		
	Maximum Current	Α	0.800	0.600	0.250	0.200	0.125	0.100		
	Maximum Power (*2)		2.64			3				
	Maximum Line Regulation(Within input voltage range)	mV	2	.0	4	40	80)		
Output	Maximum Load Regulation (0-100% load) (*3) mV		4	.0	1	00	60	0		
Output	Temperature Coefficient		801	m\/	200	0mV	300	m\/		
	(Ambient temperature -40°C to +50°C)		001	IIIV	200	JIIIV	300	III V		
	Max Power Total Regulation (max)(*4)	%	± 3				± 5			
	Maximum Ripple & Noise (typ/max) (*5)	mVp-p	40/	120		30/	120			
	Voltage Adjustable Range	VDC	3.15-3.6	4.75-6.0	11.4	-15.0	± 11.4-	± 15.0		
	Over Current Protection (*6)				ilable					
Function	Over Voltage Protection					vailable				
	Remote ON/OFF Control				Avai	ilable				
	Operating Ambient Temperature	°C	-40 to +85							
	Storage Ambient Temperature	°C	-40 to +85							
Environment	Operating Ambient Humidity	% RH				mperature and non-				
Livilorinicht	Storage Ambient Humidity	% RH	5-95 (the conditions of maximum 38°C in wet bulb temperature and non-condensation should be ensured.)							
	Vibration		10-5			otal amplitude, X/Y/Z		each		
	Shock					s, 3 times for each, i				
Isolation	Withstand Voltage		Between input terminal and case, between input terminal and output terminal, and between output terminal and case: 500VAC (for 1 minute)							
1301411011	Isolation Resistance		Between input terminal and output terminal: 500VDC, 50MΩ min							
Standards	Safety Standards		Approved by UL62368-1, CSA62368-1, EN62368-1, UL60950-1, CSA60950-1, EN60950-1. (Expire date of 60950-1: 20/12/2020)							
Mechanical	Weight (typ)	g	4.5							
wicolalita	Size (W x H x D)	mm		DIP: 2	2.86 x 8.5 x 16.6	/ SMD: 22.86 x 8.8 x	x 16.6			

Note: "x" in model names is to be replaced by a symbol which represents the terminal configuration (F: DIP/R: SMD) for actual model names.

Note: With nominal input/output voltage, maximum output current, and Ta=25°C, if not specified separately.

Note: For 12V/±12V models, output voltage can be set to 15V/±15V by connecting the output adjustment terminal TRM to -Vout.

Note: For ± 12V model, output voltage can be set to 24V or 30V single output by making the COM terminal open.

- (*1) With nominal input voltage, maximum output current, and Ta=25°C.
- (*2) The maximum output power value is between -40°C and +50°C. For use in outside this temperature range, derating is needed.
- (*3) In balanced load for dual outputs ("balanced load" means a condition where the +output and -output of load current are equal).
- (*4) Output voltage includes input change, load change (balanced load), and temperature change.
- (*5) In 50MHz, Ta=25°C
- (*6) Output current restriction method. Automatically resumes when the causes are removed. Never operate the unit under output-shorted or overload conditions for over 30 seconds

ITEMS/UN	NITS	IODEL	CC3-1203Sx-E	CC3-1205Sx-E	CC3-12	212Sx-E	CC3-12	12Dx-E			
	Nominal Voltage	V			DO	C12					
Innut	Voltage Range	V			DC9	DC9.0-18					
Input	Efficiency (typ) (*1)	%	74 79		82		81				
	Current (typ) (*1)	Α	0.297	0.316	0.0	305	0.3	09			
	Nominal Voltage	VDC	3.3	5	12	15	± 12	± 15			
	Maximum Current	Α	0.800	0.600	0.250	0.200	0.125	0.100			
	Maximum Power (*2)	W	2.64			3					
	Maximum Line Regulation(Within input voltage range)	mV	2	.0		10	8	0			
Output	Maximum Load Regulation (0-100% load) (*3)	mV	4	.0	1	00	60	00			
Output	Temperature Coefficient		90	m\/	200)m\/	300	m\/			
	(Ambient temperature -40°C to +50°C)		80mV		200mV		300mV				
	Max Power Total Regulation (max)(*4) %			±	3		±	5			
	Maximum Ripple & Noise (typ/max) (*5)	mVp-p	40/120			30/	120				
	Voltage Adjustable Range	VDC	3.15-3.6	4.75-6.0	11.4	-15.0	± 11.4-	± 15.0			
	Over Current Protection (*6)					ilable					
Function	Over Voltage Protection			Not available Available							
	Remote ON/OFF Control										
	Operating Ambient Temperature	℃			-40 t	o +85					
	Storage Ambient Temperature	°C				o +85					
Environment	Operating Ambient Humidity	% RH		tions of maximum 3							
LIMITOTILICIT	Storage Ambient Humidity	% RH	5-95 (the condi	tions of maximum 3	8°C in wet bulb ter	mperature and non-	condensation shou	ld be ensured.)			
	Vibration		10-55Hz, 15 minutes sweep and 1.52mm total amplitude, X/Y/Z 3 directions, 2h for each								
	Shock		980m/s² (100G), 6ms, 6 directions, 3 times for each, in non-operation								
Isolation	Withstand Voltage		Between input termina	Between input terminal and case, between input terminal and output terminal, and between output terminal and case: 500VAC (for 1 minute)							
	Isolation Resistance		Between input terminal and output terminal: 500VDC, 50MΩ min								
Standards	Safety Standards		Approved by UL62368-1, CSA62368-1, EN62368-1, UL60950-1, CSA60950-1, EN60950-1. (Expire date of 60950-1: 20/12/2								
Mechanical	Weight (typ)	g	4.5								
moonanioai	Size (W x H x D)	mm		DIP: 2	2.86 x 8.5 x 16.6 /	SMD: 22.86 x 8.8 x	c 16.6				

Note: "x" in model names is to be replaced by a symbol which represents the terminal configuration (F: DIP/R: SMD) for actual model names.

Note: With nominal input/output voltage, maximum output current, and Ta=25°C, if not specified separately.

Note: For 12V/±12V models, output voltage can be set to 15V/±15V by connecting the output adjustment terminal TRM to -Vout.

- (*1) With nominal input voltage, maximum output current, and Ta=25°C.
- (*2) The maximum output power value is between -40°C and +50°C. For use in outside this temperature range, derating is needed.
- (*3) In balanced load for dual outputs ("balanced load" means a condition where the +output and -output of load current are equal).
- $(^*4)$ Output voltage includes input change, load change (balanced load), and temperature change.
- (*5) In 50MHz, Ta=25°C.
- (*6) Output current restriction method. Automatically resumes when the causes are removed. Never operate the unit under output-shorted or overload conditions for over 30 seconds.

CC3-E(DIP/SMD)

ITEMS/UNITS MODEL			CC3-2403Sx-E	CC3-2405Sx-E	CC3-24	12\$x-E	CC3-24	12Dx-E			
	Nominal Voltage	V			DC	24					
lan	Voltage Range	V			DC18	8-36					
Input	Efficiency (typ) (*1)	%	73	78	82		81				
	Current (typ) (*1)	Α	0.151 0.160 0.152		52	0.154					
	Nominal Voltage	VDC	3.3	5	12	15	± 12	± 15			
	Maximum Current	Α	0.800	0.600	0.250	0.200	0.125	0.100			
	Maximum Power (*2)	W	2.64			3					
	Maximum Line Regulation(Within input voltage range)	mV	2	0	40	0	80)			
Output	Maximum Load Regulation (0-100% load) (*3)	mV	4	0	10	00	60	0			
Output	Temperature Coefficient		801	m\/	200	m\/	300	m\/			
	(Ambient temperature -40°C to +50°C)		001	IIIV	200	IIIV	300mV				
	Max Power Total Regulation (max)(*4)	%	± 3				±	5			
	Maximum Ripple & Noise (typ/max) (*5)	mVp-p	40/120			30/	120				
	Voltage Adjustable Range		3.15-3.6	4.75-6.0	11.4-	15.0	± 11.4-	± 15.0			
	Over Current Protection (*6)				Avail	able					
Function	Over Voltage Protection				Not ava	ailable					
	Remote ON/OFF Control				Avail	able					
	Operating Ambient Temperature	°C	-40 to +85								
	Storage Ambient Temperature	°C			-40 to						
Environment	Operating Ambient Humidity	% RH	5-95 (the condi	tions of maximum 3	8°C in wet bulb tem	nperature and non-	condensation shoul	d be ensured.)			
LIMITOTINICIN	Storage Ambient Humidity	% RH	5-95 (the condi	tions of maximum 3	8°C in wet bulb tem	nperature and non-	condensation shoul	d be ensured.)			
	Vibration		10-5	5Hz, 15 minutes sw	eep and 1.52mm tot	al amplitude, X/Y/Z	3 directions, 2h for	each			
	Shock			980m/s² (100G), 6ms, 6 directions, 3 times for each, in non-operation							
Isolation	Withstand Voltage		Between input termina	l and case, between inp	tput terminal and case:	500VAC (for 1 minute)					
Isolation	Isolation Resistance		Between input terminal and output terminal: 500VDC, 50MΩ min								
Standards	Safety Standards		Approved by UL62368-1, CSA62368-1, EN62368-1, UL60950-1, CSA60950-1, EN60950-1. (Expire date of 60950-1: 20/12/20:								
Mechanical	Weight (typ)	g	4.5								
wiconallical	Size (W x H x D)	mm		DIP: 2	22.86 x 8.5 x 16.6 /	SMD: 22.86 x 8.8 >	16.6				

Note: "x" in model names is to be replaced by a symbol which represents the terminal configuration (F: DIP/R: SMD) for actual model names.

Note: With nominal input/output voltage, maximum output current, and Ta=25°C, if not specified separately.

Note: For 12V/±12V models, output voltage can be set to 15V/±15V by connecting the output adjustment terminal TRM to -Vout.

Note: For ± 12V model, output voltage can be set to 24V or 30V single output by making the COM terminal open.

- (*1) With nominal input voltage, maximum output current, and Ta=25°C.
- (*2) The maximum output power value is between -40°C and +50°C. For use in outside this temperature range, derating is needed.
- (*3) In balanced load for dual outputs ("balanced load" means a condition where the +output and -output of load current are equal).
- (*4) Output voltage includes input change, load change (balanced load), and temperature change.
- (*5) In 50MHz, Ta=25°C
- (*6) Output current restriction method. Automatically resumes when the causes are removed. Never operate the unit under output-shorted or overload conditions for over 30 seconds.

ITEMS/UN	NITS	IODEL	CC3-4803Sx-E	CC3-4805Sx-E	CC3-48	312Sx-E	CC3-48	12Dx-E			
	Nominal Voltage	V			DC	C48					
Innut	Voltage Range	V			DC3	36-76					
Input	Efficiency (typ) (*1)	%	73 79		81		80				
	Current (typ) (*1)	Α	0.075	0.079	0.0	077	0.0	78			
	Nominal Voltage	VDC	3.3	5	12	15	± 12	± 15			
	Maximum Current	Α	0.800	0.600	0.250	0.200	0.125	0.100			
	Maximum Power (*2)	W	2.64			3					
	Maximum Line Regulation(Within input voltage range)	mV	2	0	4	ŀO	8	-			
Output	Maximum Load Regulation (0-100% load) (*3)	mV	4	0	1	00	60	00			
Output	Temperature Coefficient		90	m\/	300)m\/	300	m\/			
	(Ambient temperature -40°C to +50°C)		80mV		200mV		300mV				
	Max Power Total Regulation (max)(*4) %		± 3			± 5					
	Maximum Ripple & Noise (typ/max) (*5)	mVp-p	40/120			30/	120				
	Voltage Adjustable Range		3.15-3.6	4.75-6.0	11.4	-15.0	± 11.4-	± 15.0			
	Over Current Protection (*6)					ilable					
Function	Over Voltage Protection				Not av	/ailable					
	Remote ON/OFF Control			Available							
	Operating Ambient Temperature	℃			-40 t	o +85					
	Storage Ambient Temperature	°C		-40 to +85							
Environment	Operating Ambient Humidity	% RH		tions of maximum 3							
LIMITOTILICIT	Storage Ambient Humidity	% RH	5-95 (the condi	tions of maximum 3	8°C in wet bulb ter	mperature and non-	condensation shou	ld be ensured.)			
	Vibration		10-5	5Hz, 15 minutes swe				each			
	Shock		980m/s² (100G), 6ms, 6 directions, 3 times for each, in non-operation								
Isolation	Withstand Voltage		Between input terminal and case, between input terminal and output terminal, and between output terminal and case: 500VAC (for 1 minute)								
	Isolation Resistance		Between input terminal and output terminal: 500VDC, 50MΩ min								
Standards	Safety Standards		Approved by UL62368-1, CSA62368-1, EN62368-1, UL60950-1, CSA60950-1, EN60950-1. (Expire date of 60950-1: 20/12/2								
Mechanical	Weight (typ)	g	4.5								
moonanioai	Size (W x H x D)	mm		DIP: 2	2.86 x 8.5 x 16.6 /	SMD: 22.86 x 8.8 x	< 16.6				

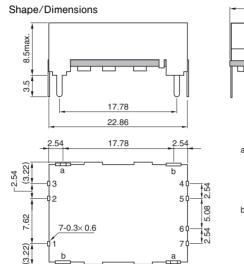
Note: "x" in model names is to be replaced by a symbol which represents the terminal configuration (F: DIP/R: SMD) for actual model names.

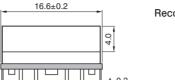
Note: With nominal input/output voltage, maximum output current, and Ta=25°C, if not specified separately.

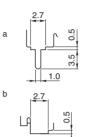
Note: For 12V/±12V models, output voltage can be set to 15V/±15V by connecting the output adjustment terminal TRM to -Vout.

- (*1) With nominal input voltage, maximum output current, and Ta=25°C.
- (*2) The maximum output power value is between -40°C and +50°C. For use in outside this temperature range, derating is needed.
- (*3) In balanced load for dual outputs ("balanced load" means a condition where the +output and -output of load current are equal).
- $(^*4)$ Output voltage includes input change, load change (balanced load), and temperature change.
- (*5) In 50MHz, Ta=25°C.
- (*6) Output current restriction method. Automatically resumes when the causes are removed. Never operate the unit under output-shorted or overload conditions for over 30 seconds.

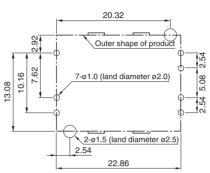
CC3-xxxxF-E (DIP type)





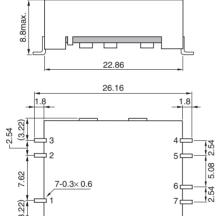


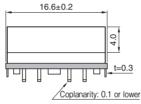
Recommended measurements for mounting board



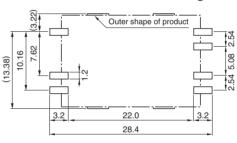
 $\label{eq:Unit:mm} \mbox{Unit: mm}$ Allowable tolerance is ± 0.5 if not specified separately.

CC3-xxxxR-E (SMD type)





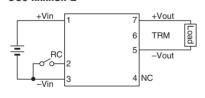
Recommended measurements for mounting board



 $\label{eq:Unit:mm} \mbox{Unit: mm}$ Allowable tolerance is ± 0.5 if not specified separately.

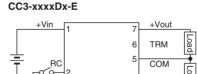
Connection diagram CC3-xxxxSx-E

Shape/Dimensions



Termi	nal connections
No.1	+Vin
No.2	RC
No.3	–Vin
No.4	NC
No.5	-Vout
No.6	TRM

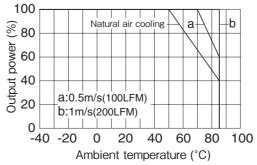
No.7 +Vout



-Vou

Terminal connections						
No.1	+Vin					
No.2	RC					
No.3	–Vin					
No.4	-Vout					
No.5	Common out					
No.6	TRM					
No.7	+Vout					

Derating Curve



CC3-E(SIP)

CC3-E Specifications

ITEMS/UI	NITS	ODEL	CC3-0503SS-E	CC3-0505SS-E	CC3-05	12SS-E	CC3-05	12DS-E	
	Nominal Voltage			DC	5.0				
lanet	Voltage Range	V		DC4.5-9.0					
Input	Efficiency (typ) (*1)	%	73	77	8	32	81		
	Current (typ) (*1)	Α	0.723	0.779	0.7	732	0.7	41	
	Nominal Voltage	VDC	3.3	5	12	15	± 12	± 15	
	Maximum Current	Α	0.800	0.600	0.250	0.200	0.125	0.100	
	Maximum Power (*2)	W	2.64			3			
	Maximum Line Regulation (Within input voltage range)	mV	2	20	4	0	81)	
Outnut	Maximum Load Regulation (0-100% load) (*3)	mV	4	10	10	00	60	0	
Output	Temperature Coefficient (Ambient temperature -40°C to +50°C)		80mV 200mV				300	mV	
	Max Power Total Regulation (max)(*4)	%	± 3				±	5	
	Maximum Ripple & Noise (typ/max) (*5)	mVp-p	40/120 30/1		120				
	Voltage Adjustable Range	VDC	3.15-3.67	4.75-6.0	11.4-15.0		± 11.4-	± 15.0	
	Over Current Protection (*6)				Avai	lable			
Function	Over Voltage Protection				Not av	railable	ailable		
	Remote ON/OFF Control		Available						
	Operating Ambient Temperature	℃			-40 t	o +85			
	Storage Ambient Temperature	°C				o +85			
Environment	Operating Ambient Humidity	% RH		itions of maximum 3					
LIMITOTITICITE	Storage Ambient Humidity	% RH	5-95 (the condi	itions of maximum 3	88℃ in wet bulb ter	mperature and non-	condensation shou	d be ensured.)	
	Vibration		10-	-55Hz, 15 minutes s	sweep and 1.52mm	total amplitude, 3	directions, 2h for ea	ıch	
	Shock	980m/s² (100G), 6ms, 6 directions, 3 times				, 3 times for each, i	n non-operation		
Isolation	Withstand Voltage		Between input terminal and case, between input terminal and output terminal, and between output terminal and case: 500VAC				500VAC (for 1 minute)		
isolation	Isolation Resistance		Between input terminal and output terminal: 500VDC, 50MΩ min						
Standards	Safety Standards		Approved by UL623	68-1, CSA62368-1, EN	162368-1, UL60950-1,	CSA60950-1, EN609	50-1. (Expire date of 6	0950-1: 20/12/2020)	
Machanical	Weight (typ)	g				7			
	Size (W x H x D)	mm			27.8 x 1	7.9 x 9.2			

Note: With nominal input/output voltage, maximum output current, and Ta=25°C, if not specified separately.

Note: For 12V/±12V models, output voltage can be set to 15V/±15V by connecting the output adjustment terminal TRM to -Vout.

Note: For ± 12V model, output voltage can be set to 24V or 30V single output by making the COM terminal open.

- (*1) With nominal input voltage, maximum output current, and Ta=25°C.
- (*2) The maximum output power value is between -40°C and +50°C. For use in outside this temperature range, derating is needed.
- (*3) In balanced load for dual outputs ("balanced load" means a condition where the +output and -output of load current are equal).
- (*4) Output voltage includes input change, load change (balanced load), and temperature change.
- (*5) In 50MHz, Ta=25°C
- (*6) Output current restriction method. Automatically resumes when the causes are removed. Never operate the unit under output-shorted or overload conditions for over 30 seconds.

ITEMS/UN	NITS	ODEL	CC3-1205SS-E	CC3-12	12SS-E	CC3-12	12DS-E	
	Nominal Voltage	V		DC	;12			
lanet	Voltage Range	V		DC9.	.0-18			
Input	Efficiency (typ) (*1)	%	79	2				
	Current (typ) (*1)	Α	0.316	0.316 0.305				
	Nominal Voltage	VDC	5	12	15	± 12	± 15	
	Maximum Current	Α	0.600	0.250	0.200	0.125	0.100	
	Maximum Power (*2)	W			3			
	Maximum Line Regulation (Within input voltage range)	mV	20	4	0	80)	
Output	Maximum Load Regulation (0-100% load) (*3)	mV	40	10	00	60	0	
Output	Temperature Coefficient		80mV	200	lm\/	300	m\/	
	(Ambient temperature -40°C to +50°C)		80mV 200mV		300mV			
	Max Power Total Regulation (max)(*4)	%	± 3		± 5			
	Maximum Ripple & Noise (typ/max) (*5)	mVp-p	40/120 30/		120			
	Voltage Adjustable Range	VDC	4.75-6.0	11.4-15.0		± 11.4- ± 15.0		
	Over Current Protection (*6)			Avai				
Function	Over Voltage Protection			Not av				
	Remote ON/OFF Control			Avai	lable			
	Operating Ambient Temperature	°C		-40 to	o +85			
	Storage Ambient Temperature	°C		-40 to				
Environment	Operating Ambient Humidity	% RH	5-95 (the conditions of maximum 3					
Liviloiiiioii	Storage Ambient Humidity	% RH	5-95 (the conditions of maximum 3					
	Vibration		10-55Hz, 15 minutes s				ch	
	Shock				, 3 times for each, ir			
Isolation	Withstand Voltage		Between input terminal and case, between input				500VAC (for 1 minute)	
	Isolation Resistance		Between input terminal and output terminal: 500VDC, 50MΩ min					
Standards	Safety Standards		Approved by UL62368-1, CSA62368-1, EN	62368-1, UL60950-1,	CSA60950-1, EN6095	50-1. (Expire date of 6	0950-1: 20/12/2020)	
Mechanical	Weight (typ)	g		7	7			
- moontanioui	Size (W x H x D)	mm		27.8 x 1	7.9 x 9.2			

Note: With nominal input/output voltage, maximum output current, and Ta=25°C, if not specified separately.

Note: For $12V/\pm12V$ models, output voltage can be set to $15V/\pm15V$ by connecting the output adjustment terminal TRM to -Vout.

- (*1) With nominal input voltage, maximum output current, and Ta=25°C.
- (*2) The maximum output power value is between -40°C and +50°C. For use in outside this temperature range, derating is needed.
- (*3) In balanced load for dual outputs ("balanced load" means a condition where the +output and -output of load current are equal).
- (*4) Output voltage includes input change, load change (balanced load), and temperature change.
- (*5) In 50MHz, Ta=25°C.
- (*6) Output current restriction method. Automatically resumes when the causes are removed. Never operate the unit under output-shorted or overload conditions for over 30 seconds.

CC3-E(SIP)

ITEMS/UN	NITS	IODEL	CC3-2403SS-E	CC3-2405SS-E	CC3-24	412SS-E	CC3-24	12DS-E
	Nominal Voltage	V		DC24				
Innut	Voltage Range	V		DC18-36				
Input	Efficiency (typ) (*1)	%	73	78	82		81	
	Current (typ) (*1)	Α	0.151	0.160	0.	152	0.1	54
	Nominal Voltage	VDC	3.3	5	12	15	± 12	± 15
	Maximum Current	Α	0.800	0.600	0.250	0.200	0.125	0.100
	Maximum Power (*2)	W	2.64			3		
	Maximum Line Regulation (Within input voltage range)	mV	2	.0	4	40	8	0
Output	Maximum Load Regulation (0-100% load) (*3)	mV	4	.0	1	00	60	00
Output	Temperature Coefficient		80.	m\/	200	0m\/	300	lm\/
	(Ambient temperature -40°C to +50°C)		80mV 200mV			300mV		
	Max Power Total Regulation (max)(*4)	%	± 3		± 5			
	Maximum Ripple & Noise (typ/max) (*5)	mVp-p	10112		120			
	Voltage Adjustable Range	VDC	3.15-3.67	4.75-6.0	11.4-15.0		± 11.4- ± 15.0	
	Over Current Protection (*6)		Available					
Function	Over Voltage Protection					vailable		
-	Remote ON/OFF Control				Ava	ilable		
	Operating Ambient Temperature	℃			-40 t	to +85		
	Storage Ambient Temperature	℃				to +85		
Environment	Operating Ambient Humidity	% RH				mperature and non-		
Liviloimicit	Storage Ambient Humidity	% RH				mperature and non-		
	Vibration		10-			n total amplitude, 3		ach
	Shock					s, 3 times for each, i		
Isolation	Withstand Voltage		Between input termina			terminal, and between ou		500VAC (for 1 minute)
1301411011	Isolation Resistance		Between input terminal and output terminal: 500VDC, 50MΩ min					
Standards	Safety Standards		Approved by UL62368-1, CSA62368-1, EN62368-1, UL60950-1, CSA60950-1, EN60950-1. (Expire date of 60950-1: 20/12/2020)					
Mechanical	Weight (typ)	g				7		
wechanical	Size (W x H x D)	mm			27.8 x 1	17.9 x 9.2		

Note: With nominal input/output voltage, maximum output current, and Ta=25°C, if not specified separately.

Note: For 12V/±12V models, output voltage can be set to 15V/±15V by connecting the output adjustment terminal TRM to -Vout.

Note: For ± 12V model, output voltage can be set to 24V or 30V single output by making the COM terminal open.

- (*1) With nominal input voltage, maximum output current, and Ta=25°C.
- (*2) The maximum output power value is between -40°C and +50°C. For use in outside this temperature range, derating is needed.
- (*3) In balanced load for dual outputs ("balanced load" means a condition where the +output and -output of load current are equal).
- (*4) Output voltage includes input change, load change (balanced load), and temperature change.
- (*5) In 50MHz, Ta=25°C.
- (*6) Output current restriction method. Automatically resumes when the causes are removed. Never operate the unit under output-shorted or overload conditions for over 30 seconds.

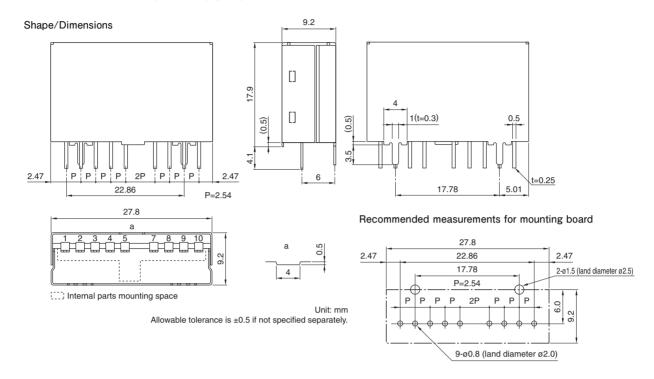
ITEMS/UN	NITS	ODEL	CC3-4803SS-E	CC3-4805SS-E	CC3-48	12DS-E		
	Nominal Voltage	V	-	DC48	-			
lanet	Voltage Range	V						
Input	Efficiency (typ) (*1)	%	73	79	82			
	Current (typ) (*1)	Α	0.075 0.079		0.0)76		
	Nominal Voltage	VDC	3.3	5	± 12	± 15		
	Maximum Current	Α	0.800	0.600	0.125	0.100		
	Maximum Power (*2)	W	2.64		3			
	Maximum Line Regulation (Within input voltage range)	mV	20)	8	0		
Output	Maximum Load Regulation (0-100% load) (*3)	mV	40)	60	00		
Output	Temperature Coefficient		80n	۵۱/	200)mV		
	(Ambient temperature -40°C to +50°C)		0011	300	JIIIV			
	Max Power Total Regulation (max)(*4)	%	±	3	± 5			
	Maximum Ripple & Noise (typ/max) (*5)	mVp-p	40/1	30/120				
	Voltage Adjustable Range	VDC	3.15-3.6	4.75-6.0	± 11.4-	± 15.0		
	Over Current Protection (*6)		Available					
Function	Over Voltage Protection			Not available				
	Remote ON/OFF Control		Available					
	Operating Ambient Temperature	℃		-40 to +85				
	Storage Ambient Temperature	°C		-40 to +85				
Environment	Operating Ambient Humidity	% RH	5-95 (the conditions of maximum 3	8°C in wet bulb temperature and nor	n-condensation shou	ıld be ensured.)		
LIIVIIOIIIIGIIL	Storage Ambient Humidity	% RH	5-95 (the conditions of maximum 3	8°C in wet bulb temperature and nor	n-condensation shou	ıld be ensured.)		
	Vibration		10-55Hz, 15 minutes s	weep and 1.52mm total amplitude, 3	directions, 2h for ea	ach		
	Shock		980m/s² (100G),	, 6ms, 6 directions, 3 times for each,	in non-operation			
Isolation	Withstand Voltage		Between input terminal and case, between inpu	it terminal and output terminal, and between o	output terminal and case:	500VAC (for 1 minute		
Isolation	Isolation Resistance		Between input terminal and output terminal: 500VDC, 50MΩ min					
Standards	Safety Standards		Approved by UL62368-1, CSA62368-1, EN	62368-1, UL60950-1, CSA60950-1, EN60	950-1. (Expire date of 6	60950-1: 20/12/2020		
Mechanical	Weight (typ)	g		7				
IVICUIDIIIUDI	Size (W x H x D)	mm		27.8 x 17.9 x 9.2				

Note: With nominal input/output voltage, maximum output current, and Ta=25°C, if not specified separately.

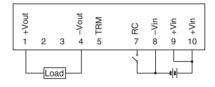
Note: For $12V/\pm12V$ models, output voltage can be set to $15V/\pm15V$ by connecting the output adjustment terminal TRM to -Vout.

- (*1) With nominal input voltage, maximum output current, and Ta=25°C.
- (*2) The maximum output power value is between -40°C and +50°C. For use in outside this temperature range, derating is needed.
- (*3) In balanced load for dual outputs ("balanced load" means a condition where the +output and -output of load current are equal).
- (*4) Output voltage includes input change, load change (balanced load), and temperature change.
- (*5) In 50MHz, Ta=25°C.
- (*6) Output current restriction method. Automatically resumes when the causes are removed. Never operate the unit under output-shorted or overload conditions for over 30 seconds.

CC3-xxxxS-E (SIP type)

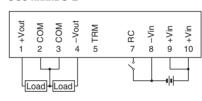


Connection diagram CC3-xxxxSS-E



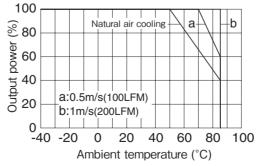
No.8 -Vin No.9 +Vin No.10 +Vin

CC3-xxxxDS-E



Termi	nal connections
No.1	+Vout
No.2	COM
No.3	COM
No.4	-Vout
No.5	TRM
No.6	NC
No.7	RC
No.8	–Vin
No.9	+Vin
No 10	+Vin

Derating Curve



CC6-E Specifications

ITEMS/UN	NITS	ODEL	CC6-0503Sx-E	CC6-0505Sx-E	CC6-05	512Sx-E	CC6-05	12Dx-E
	Nominal Voltage	V		DC5.0				
la a d	Voltage Range	V			DC4	.5-9.0		
Input	Efficiency (typ) (*1)	%	76	79	8		82	
	Current (typ) (*1)	Α	1.042	1.266		1.4	63	
	Nominal Voltage	VDC	3.3	5	12	15	± 12	± 15
	Maximum Current	Α	1.200	1.000	0.500	0.400	0.250	0.200
	Maximum Power (*2)	W	3.96	5		6	3	
	Maximum Line Regulation(Within input voltage range)	mV	2	0	4	40	8	0
Output	Maximum Load Regulation (0-100% load) (*3)	mV	4	0	1	00	60	00
Output	Temperature Coefficient		80	80mV		0m\/	300	m\/
	(Ambient temperature -40°C to +50°C)		801117			200mV 300m		1117
	Max Power Total Regulation (max)(*4)	%	± 3				± 5	
	Maximum Ripple & Noise (typ/max) (*5)	mVp-p	40/120			30/	120	
	Voltage Adjustable Range	VDC	3.15-3.6	4.75-6.0	11.4-15.0		± 11.4-	± 15.0
	Over Current Protection (*6)				Ava	ilable		
Function	Over Voltage Protection				Not av	vailable		
	Remote ON/OFF Control				Ava	ilable		
	Operating Ambient Temperature	°C				to +85		
	Storage Ambient Temperature	℃				to +85		
Environment	Operating Ambient Humidity	% RH	5-95 (the condi	tions of maximum 3	88°C in wet bulb te	mperature and non-	condensation shou	ld be ensured.)
LIMIOIIIICII	Storage Ambient Humidity	% RH				mperature and non-		
	Vibration		10-			n total amplitude, 3		ach
	Shock			980m/s² (100G)	, 6ms, 6 directions	s, 3 times for each, in	n non-operation	
Isolation	Withstand Voltage		Between input termina			terminal, and between ou		500VAC (for 1 minute)
Isolation	Isolation Resistance		Between input terminal and output terminal: 500VDC, 50MΩ min					
Standards	Safety Standards		Approved by UL623	68-1, CSA62368-1, EN		1, CSA60950-1, EN609	50-1. (Expire date of 6	60950-1: 20/12/2020)
Mechanical	Weight (typ)	g				5.8		
moonanioai	Size (W x H x D)	mm		DIP: 2	22.86 x 8.5 x 21.1	/ SMD: 22.86 x 8.8 x	¢ 21.1	

Note: "x" in model names is to be replaced by a symbol which represents the terminal configuration (F: DIP/R: SMD) for actual model names.

Note: With nominal input/output voltage, maximum output current, and Ta=25°C, if not specified separately.

Note: For 12V/±12V models, output voltage can be set to 15V/±15V by connecting the output adjustment terminal TRM to -Vout.

Note: For \pm 12V model, output voltage can be set to 24V or 30V single output by making the COM terminal open.

- (*1) With nominal input voltage, maximum output current, and Ta=25°C.
- (*2) The maximum output power value is between -40°C and +50°C. For use in outside this temperature range, derating is needed.
- (*3) In balanced load for dual outputs ("balanced load" means a condition where the +output and -output of load current are equal).
- (*4) Output voltage includes input change, load change (balanced load), and temperature change.
- (*5) In 50MHz, Ta=25°C
- (*6) Output current restriction method. Automatically resumes when the causes are removed. Never operate the unit under output-shorted or overload conditions for over 30 seconds.

TEMS/UN	NITS	IODEL	CC6-1203Sx-E	CC6-1205Sx-E	CC6-12	212Sx-E	CC6-12	12Dx-E	
	Nominal Voltage	V		'	DC	C12			
la a cat	Voltage Range			DC9.0-18					
Input	Efficiency (typ) (*1)	%	78	82	85				
	Current (typ) (*1)	Α	0.423	0.610		0.5	588		
	Nominal Voltage	VDC	3.3	5	12	15	± 12	± 15	
	Maximum Current	Α	1.2	200	0.500	0.400	0.250	0.200	
	Maximum Power (*2)	W	3.96			6			
	Maximum Line Regulation(Within input voltage range)	mV	2	.0	4	10	8	0	
Output	Maximum Load Regulation (0-100% load) (*3)	mV	4	.0	1	00	60	00	
Output	Temperature Coefficient		90	m\/	200)m\/	300	m\/	
	(Ambient temperature -40°C to +50°C)		80mV 200mV			300	IIIV		
1	Max Power Total Regulation (max)(*4)	%	± 3			±	5		
	Maximum Ripple & Noise (typ/max) (*5)	mVp-p	40/120 30		120				
	Voltage Adjustable Range	VDC	3.15-3.6	4.75-6.0	11.4-15.0		± 11.4- ± 15.0		
	Over Current Protection (*6)			Available					
Function	Over Voltage Protection				Not av	/ailable			
	Remote ON/OFF Control				Avai	ilable			
	Operating Ambient Temperature	℃			-40 t	o +85			
	Storage Ambient Temperature	°C				o +85			
Environment	Operating Ambient Humidity	% RH				mperature and non-			
LIMIOIIIICII	Storage Ambient Humidity	% RH	· · · · · · · · · · · · · · · · · · ·			mperature and non-			
	Vibration		10-			n total amplitude, 3	·	ach	
	Shock			980m/s² (100G)	, 6ms, 6 directions	, 3 times for each, i	n non-operation		
Isolation	Withstand Voltage		Between input termina			erminal, and between ou		500VAC (for 1 min	
Isolation	Isolation Resistance		Between input terminal and output terminal: 500VDC, 50MΩ min						
Standards	Safety Standards		Approved by UL623	68-1, CSA62368-1, EN		I, CSA60950-1, EN609	50-1. (Expire date of	60950-1: 20/12/2	
Mechanical	Weight (typ)	g				i.8			
wiconallical	Size (W x H x D)	mm		DIP: 2	DIP: 22.86 x 8.5 x 21.1 / SMD: 22.86 x 8.8 x 21.1				

Note: "x" in model names is to be replaced by a symbol which represents the terminal configuration (F: DIP/R: SMD) for actual model names.

Note: With nominal input/output voltage, maximum output current, and Ta=25°C, if not specified separately.

Note: For 12V/±12V models, output voltage can be set to 15V/±15V by connecting the output adjustment terminal TRM to -Vout.

- (*1) With nominal input voltage, maximum output current, and Ta=25°C.
- (*2) The maximum output power value is between -40°C and +50°C. For use in outside this temperature range, derating is needed.
- (*3) In balanced load for dual outputs ("balanced load" means a condition where the +output and -output of load current are equal).
- (*4) Output voltage includes input change, load change (balanced load), and temperature change.
- (*5) In 50MHz, Ta=25°C.
- (*6) Output current restriction method. Automatically resumes when the causes are removed. Never operate the unit under output-shorted or overload conditions for over 30 seconds.

ITEMS/UN	NITS	ODEL	CC6-2403Sx-E	CC6-2405Sx-E	CC6-24	12\$x-E	CC6-24	12Dx-E	
	Nominal Voltage	V			DC:	24			
la	Voltage Range	V		DC18-36					
Input	Efficiency (typ) (*1)	%	77	81	87		86		
	Current (typ) (*1)	Α	0.214	0.309	0.28	87	0.2	91	
	Nominal Voltage	VDC	3.3	5	12	15	± 12	± 15	
	Maximum Current	Α	1.2	200	0.500	0.400	0.250	0.200	
	Maximum Power (*2)	W	3.96			6			
	Maximum Line Regulation(Within input voltage range)	mV	2	0	40)	8	0	
Output	Maximum Load Regulation (0-100% load) (*3)	mV	4	0	10	0	60	0	
Catput	Temperature Coefficient		801	m\/	200	m\/	300	m\/	
	(Ambient temperature -40°C to +50°C)		001	11 V	200mV		300mV		
	Max Power Total Regulation (max)(*4)	%	±;				± 5		
	Maximum Ripple & Noise (typ/max) (*5)	mVp-p	40/120		30/	30/120			
	Voltage Adjustable Range	VDC	3.15-3.6	4.75-6.0	11.4-	15.0	± 11.4-	± 15.0	
	Over Current Protection (*6)				Availa	able			
Function	Over Voltage Protection			Not available					
	Remote ON/OFF Control				Availa	able			
	Operating Ambient Temperature	℃			-40 to	+85			
	Storage Ambient Temperature	℃			-40 to				
Environment	Operating Ambient Humidity	% RH			88°C in wet bulb tem				
LIMIOIIIICII	Storage Ambient Humidity	% RH			88°C in wet bulb tem				
	Vibration		10-		sweep and 1.52mm			ıch	
	Shock				, 6ms, 6 directions,				
Isolation	Withstand Voltage	Between input terminal and case, between input terminal and output terminal, and between output terminal					500VAC (for 1 minute)		
Isolation	Isolation Resistance		Between input terminal and output terminal: 500VDC, 50MΩ min						
Standards	Safety Standards		Approved by UL623	68-1, CSA62368-1, EN	N62368-1, UL60950-1,	CSA60950-1, EN609	950-1. (Expire date of 6	0950-1: 20/12/2020)	
Mechanical	Weight (typ)	g			5.8	8			
INICOINGIIIUGI	Size (W x H x D)	mm		DIP: 2	22.86 x 8.5 x 21.1 / 3	SMD: 22.86 x 8.8 x	x 21.1		

Note: "x" in model names is to be replaced by a symbol which represents the terminal configuration (F: DIP/R: SMD) for actual model names.

Note: With nominal input/output voltage, maximum output current, and Ta=25°C, if not specified separately.

Note: For 12V/±12V models, output voltage can be set to 15V/±15V by connecting the output adjustment terminal TRM to -Vout.

Note: For \pm 12V model, output voltage can be set to 24V or 30V single output by making the COM terminal open.

- (*1) With nominal input voltage, maximum output current, and Ta=25°C.
- (*2) The maximum output power value is between -40°C and +50°C. For use in outside this temperature range, derating is needed.
- (*3) In balanced load for dual outputs ("balanced load" means a condition where the +output and -output of load current are equal).
- (*4) Output voltage includes input change, load change (balanced load), and temperature change.
- (*5) In 50MHz, Ta=25°C.
- (*6) Output current restriction method. Automatically resumes when the causes are removed. Never operate the unit under output-shorted or overload conditions for over 30 seconds.

ITEMS/UN	NITS	ODEL	CC6-4803Sx-E	CC6-4805Sx-E	CC6-48	12Sx-E	CC6-48	12Dx-E
	Nominal Voltage	V			DC	:48		
lane	Voltage Range	V		DC36-76				
Input	Efficiency (typ) (*1)	%	77	81	86			
	Current (typ) (*1)	Α	0.107	0.154		0.1	145	
	Nominal Voltage	VDC	3.3	5	12	15	± 12	± 15
	Maximum Current	Α	1.2	200	0.500	0.400	0.250	0.200
	Maximum Power (*2)	W	3.96			6		
	Maximum Line Regulation(Within input voltage range)	mV	2	0	4	0	8	0
Output	Maximum Load Regulation (0-100% load) (*3)	mV	4	0	10	00	60	00
Output	Temperature Coefficient		90	m\/	200	lm\/	300	m\/
	(Ambient temperature -40°C to +50°C)		80mV 200mV			300	IIIV	
	Max Power Total Regulation (max)(*4)	%	± 3			±	5	
	Maximum Ripple & Noise (typ/max) (*5)	mVp-p	40/120 30		120			
	Voltage Adjustable Range	VDC	3.15-3.6	4.75-6.0	11.4-15.0		± 11.4- ± 5.0	
	Over Current Protection (*6)		Available					
Function	Over Voltage Protection		Not available					
	Remote ON/OFF Control				Avai	lable		
	Operating Ambient Temperature	℃			-40 to	+85		
	Storage Ambient Temperature	°C			-40 to			
Environment	Operating Ambient Humidity	% RH	5-95 (the condi	tions of maximum 3	88°C in wet bulb ten	nperature and non-	condensation shou	ld be ensured.)
LIMITOTITICIT	Storage Ambient Humidity	% RH	5-95 (the condi	tions of maximum 3	88°C in wet bulb ten	nperature and non-	condensation shou	ld be ensured.)
	Vibration		10-	55Hz, 15 minutes s	sweep and 1.52mm	total amplitude, 3	directions, 2h for ea	ach
	Shock			980m/s² (100G)	, 6ms, 6 directions,	, 3 times for each, i	n non-operation	
Isolation	Withstand Voltage		Between input termina	I and case, between inp	ut terminal and output to	erminal, and between or	utput terminal and case:	500VAC (for 1 minute
ISUIALIUII	Isolation Resistance		Between input terminal and output terminal: 500VDC, 50MΩ min					
Standards	Safety Standards		Approved by UL623	68-1, CSA62368-1, EN	N62368-1, UL60950-1,	CSA60950-1, EN609	950-1. (Expire date of 6	60950-1: 20/12/2020
Mechanical	Weight (typ)	g			5.	.8		
INICOIDIIIO	Size (W x H x D)	mm		DIP: 2	22.86 x 8.5 x 21.1 /	SMD: 22.86 x 8.8	x 21.1	

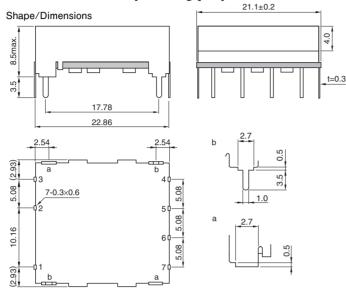
Note: "x" in model names is to be replaced by a symbol which represents the terminal configuration (F: DIP/R: SMD) for actual model names.

Note: With nominal input/output voltage, maximum output current, and Ta=25°C, if not specified separately.

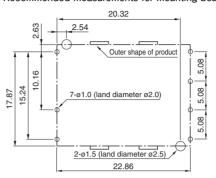
Note: For $12V/\pm12V$ models, output voltage can be set to $15V/\pm15V$ by connecting the output adjustment terminal TRM to -Vout.

- (*1) With nominal input voltage, maximum output current, and Ta=25°C.
- (*2) The maximum output power value is between -40°C and +50°C. For use in outside this temperature range, derating is needed.
- (*3) In balanced load for dual outputs ("balanced load" means a condition where the +output and -output of load current are equal).
- (*4) Output voltage includes input change, load change (balanced load), and temperature change.
- (*5) In 50MHz, Ta=25°C.
- (*6) Output current restriction method. Automatically resumes when the causes are removed. Never operate the unit under output-shorted or overload conditions for over 30 seconds.

CC6-xxxxF-E (DIP type)

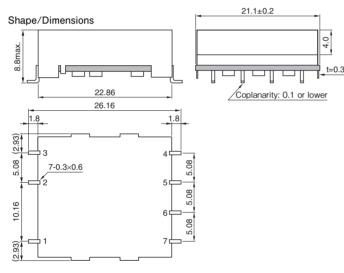


Recommended measurements for mounting board

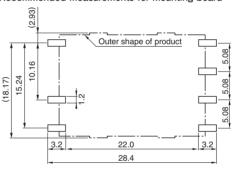


Unit: mm Allowable tolerance is ± 0.5 if not specified separately.

CC6-xxxxR-E (SMD type)

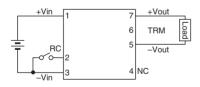


Recommended measurements for mounting board



 $\label{eq:Unit:mm} \mbox{Unit: mm}$ Allowable tolerance is ± 0.5 if not specified separately.

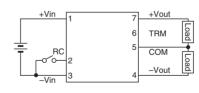
Connection diagram CC6-xxxxSx-E



Terminal connections

No.1	+Vin	
No.2	RC	
No.3	–Vin	
No.4	NC	
No.5	-Vout	
No.6	TRM	
No.7	+Vout	

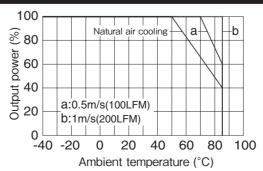
CC6-xxxxDx-E



Terminal connections

No.1	+Vin
No.2	RC
No.3	–Vin
No.4	-Vout
No.5	Common out
No.6	TRM
No.7	+Vout

Derating Curve



CC10-E Specifications

ITEMS/UNITS MC			CC10-0503\$x-E CC10-0505\$x-E CC10-0512\$x-E		512Sx-E	CC10-0512Dx-E			
Land	Nominal Voltage	V	DC5.0						
	Voltage Range	V	DC4.5-9.0						
Input	Efficiency (typ) (*1)	%		84	4		83		
	Current (typ) (*1)	Α	1.964	2.381	2.286		2.313		
	Nominal Voltage	VDC	3.3	5	12	15	± 12	± 15	
	Maximum Current	Α	2.500	2.000	0.800	0.640	0.400	0.320	
	Maximum Power (*2)	W	8.25	10	9		.6		
	Maximum Line Regulation(Within input voltage range)	mV	2	0	40		80		
Output	Maximum Load Regulation (0-100% load) (*3)	mV	4	0	1	00	60	00	
Output	Temperature Coefficient		80mV		200mV		200\/		
	(Ambient temperature -40°C to +50°C)		2001117		300mV				
	Max Power Total Regulation (max)(*4)	%	± 3		± 5				
	Maximum Ripple & Noise (typ/max) (*5)	mVp-p	40/	40/120 30		30/	/120		
	Voltage Adjustable Range	VDC	3.15-3.6	4.75-6.0	11.4-15.0		± 11.4-	± 15.0	
	Over Current Protection (*6)		Available						
Function	Over Voltage Protection			Not available					
	Remote ON/OFF Control			Available					
	Operating Ambient Temperature	℃	-40 to +85						
	Storage Ambient Temperature	°C	-40 to +85						
Environment	Operating Ambient Humidity	% RH	5-95 (the conditions of maximum 38°C in wet bulb temperature and non-condensation should be ensured.)						
LIMIOIIIIGIIL	Storage Ambient Humidity	% RH	5-95 (the conditions of maximum 38°C in wet bulb temperature and non-condensation should be ensured.)						
	Vibration		10-55Hz, 15 minutes sweep and 1.52mm total amplitude, 3 directions, 2h for each					ach	
	Shock		980m/s² (100G), 6ms, 6 directions, 3 times for each, in non-operation						
Isolation	Withstand Voltage		Between input terminal and case, between input terminal and output terminal, and between output terminal and case: 500VAC (for 1 min					500VAC (for 1 minute)	
- ISOIGHOIT	Isolation Resistance	Between input terminal and output terminal: 500VDC, 50MΩ min				,			
Standards	Safety Standards		Approved by UL62368-1, CSA62368-1, EN62368-1, UL60950-1, CSA60950-1, EN60950-1. (Expire date of 60950-1: 20/12/2020)						
Mechanical	Weight (typ)	g	10						
	Size (W x H x D)	mm	DIP: 35.56 x 8.5 x 22.6 / SMD: 35.56 x 8.8 x 22.6						

Note: "x" in model names is to be replaced by a symbol which represents the terminal configuration (F: DIP/R: SMD) for actual model names.

Note: With nominal input/output voltage, maximum output current, and Ta=25°C, if not specified separately.

Note: For 12V/±12V models, output voltage can be set to 15V/±15V by connecting the output adjustment terminal TRM to -Vout.

Note: For \pm 12V model, output voltage can be set to 24V or 30V single output by making the COM terminal open.

- (*1) With nominal input voltage, maximum output current, and Ta=25°C.
- (*2) The maximum output power value is between -40°C and +50°C. For use in outside this temperature range, derating is needed.
- (*3) In balanced load for dual outputs ("balanced load" means a condition where the +output and -output of load current are equal).
- (*4) Output voltage includes input change, load change (balanced load), and temperature change.
- (*5) In 50MHz, Ta=25°C
- (*6) Output current restriction method. Automatically resumes when the causes are removed. Never operate the unit under output-shorted or overload conditions for over 30 seconds.

ITEMS/UNITS MODEL			CC10-1203Sx-E	CC10-1205Sx-E	CC10-1212Sx-E		CC10-1212Dx-E		
Input	Nominal Voltage	V	DC12						
	Voltage Range	V	DC9.0-18						
	Efficiency (typ) (*1)	%	84	86	88		86		
	Current (typ) (*1)	Α	0.318	0.969	1.136		1.047		
	Nominal Voltage	VDC	3.3	5	12	15	± 12	± 15	
	Maximum Current	Α	2.500	2.000	1000	800	450	360	
	Maximum Power (*2)	W	8.25	10	1	2	10	.8	
	Maximum Line Regulation(Within input voltage range)	mV	2	0	40		8	80	
Output	Maximum Load Regulation (0-100% load) (*3)	mV	4	.0	100		600		
Output	Temperature Coefficient		80mV		200mV		300mV		
	(Ambient temperature -40°C to +50°C)		001117				300mV		
	Max Power Total Regulation (max)(*4)	%	± 3			± 5			
	Maximum Ripple & Noise (typ/max) (*5)	mVp-p	40/120 30)/120				
	Voltage Adjustable Range	VDC	3.15-3.6	4.75-6.0	11.4	-15.0	± 11.4-	± 15.0	
	Over Current Protection (*6)		Available						
Function	Over Voltage Protection		Not available						
	Remote ON/OFF Control		Available						
	Operating Ambient Temperature	°C	-40 to +85						
	Storage Ambient Temperature	°C	-40 to +85						
Environment	Operating Ambient Humidity	% RH	5-95 (the conditions of maximum 38°C in wet bulb temperature and non-condensation should be ensured.)						
LIIVII OIIIII GIIL	Storage Ambient Humidity	% RH	5-95 (the conditions of maximum 38°C in wet bulb temperature and non-condensation should be ensured.)						
	Vibration		10-55Hz, 15 minutes sweep and 1.52mm total amplitude, 3 directions, 2h for each						
	Shock		980m/s² (100G), 6ms, 6 directions, 3 times for each, in non-operation						
Isolation	Withstand Voltage		Between input terminal and case, between input terminal and output terminal, and between output terminal and case: 500VAC (for 1 minut						
Isolation Resistance				Between input terminal and output terminal: 500VDC, 50MΩ min					
Standards	Safety Standards		Approved by UL62368-1, CSA62368-1, EN62368-1, UL60950-1, CSA60950-1, EN60950-1. (Expire date of 60950-1: 20/12/2020						
Mechanical	Weight (typ)	g	10						
	Size (W x H x D)	mm	DIP: 35.56 x 8.5 x 22.6 / SMD: 35.56 x 8.8 x 22.6						

Note: "x" in model names is to be replaced by a symbol which represents the terminal configuration (F: DIP/R: SMD) for actual model names.

Note: With nominal input/output voltage, maximum output current, and Ta=25°C, if not specified separately.

Note: For 12V/±12V models, output voltage can be set to 15V/±15V by connecting the output adjustment terminal TRM to -Vout.

- (*1) With nominal input voltage, maximum output current, and Ta=25°C.
- (*2) The maximum output power value is between -40°C and +50°C. For use in outside this temperature range, derating is needed.
- (*3) In balanced load for dual outputs ("balanced load" means a condition where the +output and -output of load current are equal).
- (*4) Output voltage includes input change, load change (balanced load), and temperature change.
- (*5) In 50MHz, Ta=25°C.
- (*6) Output current restriction method. Automatically resumes when the causes are removed. Never operate the unit under output-shorted or overload conditions for over 30 seconds.

ITEMS/UNITS MC			CC10-2403\$x-E CC10-2405\$x-E CC10-2412\$x-E		CC10-2412Dx-E				
Input	Nominal Voltage	V	DC24						
	Voltage Range	V	DC18-36						
	Efficiency (typ) (*1)	%	84	86	87		8	3	
	Current (typ) (*1)	Α	0.409	0.484	0.575		0.523		
	Nominal Voltage	VDC	3.3	5	12	15	± 12	± 15	
	Maximum Current	Α	2.500	2.000	1.000	0.800	0.450	0.360	
	Maximum Power (*2)	W	8.25	10	12	?	10	.8	
	Maximum Line Regulation(Within input voltage range)	mV	2	0	40		80		
Output	Maximum Load Regulation (0-100% load) (*3)	mV	4	0	100	0	60	0	
Output	Temperature Coefficient		80mV		200mV		300mV		
	(Ambient temperature -40°C to +50°C)		80mV 200mV		3001117				
	Max Power Total Regulation (max)(*4)	%	± 3		± 5				
	Maximum Ripple & Noise (typ/max) (*5)	mVp-p	40/	40/120 30/		120			
	Voltage Adjustable Range	VDC	3.15-3.6	4.75-6.0	11.4-15.0		± 11.4-	± 15.0	
	Over Current Protection (*6)		Available						
Function	Over Voltage Protection		Not available						
	Remote ON/OFF Control			Available					
	Operating Ambient Temperature	℃	-40 to +85						
	Storage Ambient Temperature	°C	-40 to +85						
Environment	Operating Ambient Humidity	% RH	5-95 (the conditions of maximum 38°C in wet bulb temperature and non-condensation should be ensured.)						
LIIVIIOIIIIIGIIL	Storage Ambient Humidity	% RH	5-95 (the conditions of maximum 38°C in wet bulb temperature and non-condensation should be ensured.)						
	Vibration		10-55Hz, 15 minutes sweep and 1.52mm total amplitude, 3 directions, 2h for each					ıch	
	Shock		980m/s² (100G), 6ms, 6 directions, 3 times for each, in non-operation						
Isolation	Withstand Voltage		Between input terminal and case, between input terminal and output terminal, and between output terminal and case: 500VAC (for 1 minu					500VAC (for 1 minute)	
	Isolation Resistance		Between input terminal and output terminal: 500VDC, 50MΩ min						
Standards	Safety Standards		Approved by UL62368-1, CSA62368-1, EN62368-1, UL60950-1, CSA60950-1, EN60950-1. (Expire date of 60950-1: 20/12/2020)						
Mechanical	Weight (typ)	g	10						
	Size (W x H x D)	mm	DIP: 35.56 x 8.5 x 22.6 / SMD: 35.56 x 8.8 x 22.6						

Note: "x" in model names is to be replaced by a symbol which represents the terminal configuration (F: DIP/R: SMD) for actual model names.

Note: With nominal input/output voltage, maximum output current, and Ta=25°C, if not specified separately.

Note: For 12V/±12V models, output voltage can be set to 15V/±15V by connecting the output adjustment terminal TRM to -Vout.

Note: For \pm 12V model, output voltage can be set to 24V or 30V single output by making the COM terminal open.

- (*1) With nominal input voltage, maximum output current, and Ta=25°C.
- (*2) The maximum output power value is between -40°C and +50°C. For use in outside this temperature range, derating is needed.
- (*3) In balanced load for dual outputs ("balanced load" means a condition where the +output and -output of load current are equal).
- (*4) Output voltage includes input change, load change (balanced load), and temperature change.
- (*5) In 50MHz, Ta=25°C.
- (*6) Output current restriction method. Automatically resumes when the causes are removed. Never operate the unit under output-shorted or overload conditions for over 30 seconds.

ITEMS/UNITS MODEL			CC10-4803Sx-E	CC10-4805Sx-E	CC10-4812Sx-E		CC10-4812Dx-E	
Input	Nominal Voltage	V	DC48					
	Voltage Range	V		DC36-76				
	Efficiency (typ) (*1)	%	84	86	88		86	
	Current (typ) (*1)	Α	0.205	0.242	0.284		0.262	
	Nominal Voltage	VDC	3.3	5	12	15	± 12	± 15
	Maximum Current	Α	2.500	2.000	1.000	0.800	0.450	0.360
	Maximum Power (*2)	W	8.25	10	1:	2	10).8
	Maximum Line Regulation(Within input voltage range)	mV	2	0	40		8	0
Output	Maximum Load Regulation (0-100% load) (*3)	mV	4	0	10	0	600	
Output	Temperature Coefficient		80mV		2001/		300mV	
	(Ambient temperature -40°C to +50°C)		801110		200mV		Soumv	
	Max Power Total Regulation (max)(*4)	%	± 3			± 5		
	Maximum Ripple & Noise (typ/max) (*5)	mVp-p	40/120 30		/120			
	Voltage Adjustable Range	VDC	3.15-3.6	4.75-6.0	11.4-	15.0	± 11.4	± 15.0
	Over Current Protection (*6)		Available					
Function	Over Voltage Protection		Not available					
	Remote ON/OFF Control		Available					
	Operating Ambient Temperature	°C	-40 to +85					
	Storage Ambient Temperature	°C	-40 to +85					
Environment	Operating Ambient Humidity	% RH	5-95 (the conditions of maximum 38°C in wet bulb temperature and non-condensation should be ensured.)					
LIMIOIIIICIIL	Storage Ambient Humidity	% RH	5-95 (the conditions of maximum 38°C in wet bulb temperature and non-condensation should be ensured.)					
	Vibration		10-55Hz, 15 minutes sweep and 1.52mm total amplitude, 3 directions, 2h for each					
	Shock		980m/s² (100G), 6ms, 6 directions, 3 times for each, in non-operation					
Isolation	Withstand Voltage		Between input terminal and case, between input terminal and output terminal, and between output terminal and case: 500VAC (for 1 minute					
Isolation	Isolation Resistance		Between input terminal and output terminal: 500VDC, 50MΩ min					
Standards	Safety Standards		Approved by UL62368-1, CSA62368-1, EN62368-1, UL60950-1, CSA60950-1, EN60950-1. (Expire date of 60950-1: 20/12/2020)					
Mechanical	Weight (typ)	g	10					
	Size (W x H x D)	mm	DIP: 35.56 x 8.5 x 22.6 / SMD: 35.56 x 8.8 x 22.6					

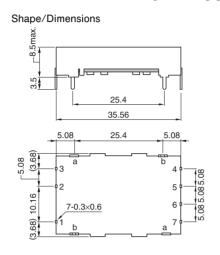
Note: "x" in model names is to be replaced by a symbol which represents the terminal configuration (F: DIP/R: SMD) for actual model names.

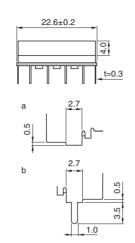
Note: With nominal input/output voltage, maximum output current, and Ta=25°C, if not specified separately.

Note: For 12V/±12V models, output voltage can be set to 15V/±15V by connecting the output adjustment terminal TRM to -Vout.

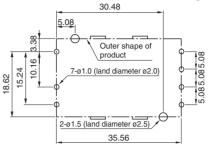
- (*1) With nominal input voltage, maximum output current, and Ta=25°C.
- (*2) The maximum output power value is between -40°C and +50°C. For use in outside this temperature range, derating is needed.
- (*3) In balanced load for dual outputs ("balanced load" means a condition where the +output and -output of load current are equal).
- (*4) Output voltage includes input change, load change (balanced load), and temperature change.
- (*5) In 50MHz, Ta=25°C.
- (*6) Output current restriction method. Automatically resumes when the causes are removed. Never operate the unit under output-shorted or overload conditions for over 30 seconds.

CC10-xxxxxF-E (DIP type)





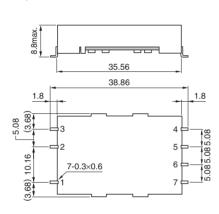
Recommended measurements for mounting board 30.48

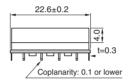


 $\label{eq:Unit:mm} \mbox{Unit: mm}$ Allowable tolerance is ± 0.5 if not specified separately.

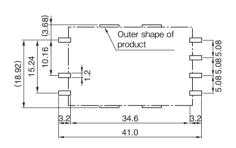
CC10-xxxxR-E (SMD type)

Shape/Dimensions



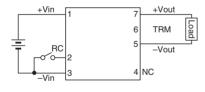


Recommended measurements for mounting board



 $\label{eq:Unit:mm} \mbox{Unit: mm}$ Allowable tolerance is ± 0.5 if not specified separately.

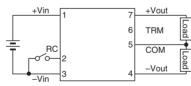
Connection diagram CC10-xxxxSx-E



Terminal connections

No.1	+Vin	
No.2	RC	
No.3	–Vin	
No.4	NC	
No.5	-Vout	
No.6	TRM	
No.7	+Vout	

CC10-xxxxDx-E



Term	inal connections
No.1	+Vin
No.2	RC
No.3	–Vin
No.4	–Vout
No.5	Common out
No.6	TRM
No.7	+Vout

Derating Curve

