



- Compact Footprint/Low Profile
- Through Hole or SMT Versions
- 5V, 12V, 24V & 48V Inputs
- 3.3 to 30V<sup>1</sup> Single,  $\pm 12$  to 15V Dual Outputs
- Output Voltage Adjustment
- Input - Output Isolation
- RoHS Compliant
- 5 Year Warranty

## CC-E Series

Ultra Compact, 1.5W to 25W Single & Dual DC-DC Converters

### Key Market Segments & Applications

- Telecommunications
- Instrumentation
- Datacom

### CC-E Features and Benefits

Features	Benefits
<ul style="list-style-type: none"> <li>• Compact</li> <li>• Self Contained</li> <li>• Multiple Input Voltage configurations</li> <li>• Open Frame (no potting)</li> </ul>	<ul style="list-style-type: none"> <li>• Less PCB Area Used</li> <li>• Requires No External Components</li> <li>• Easier System Configuration</li> <li>• Lighter in Weight, Suitable for Surface Mount (R Version)</li> </ul>

Specifications		3.3V	5V	12/15V	$\pm 12/15$ (24/30) <sup>1</sup>
Nominal Output Voltage	V	3.3V	5V	12/15V	$\pm 12/15$ (24/30) <sup>1</sup>
DC Input	V	5V: 4.5-9.0V, 12V: 9-18V, 24V: 18-36V, 48V: 36-76V			
Efficiency	%	71 to 90% model dependant			
Output Voltage Tolerance	%	1.5-10W: $\pm 3\%$ , 15-25W: $\pm 5\%$			
Output Adjustment (via trim pin)	V	3.15-3.6V <sup>(5)</sup>	4.75-6.0V	11.4-15V	22.8 - 30V
Line Regulation	mV	20 (40 CC15; 30 CC25)		40	80
Load Regulation	mV	40 (120 CC15; 200 CC25)		100	600 <sup>2</sup>
Temperature Coefficient	%	$\pm 0.02\%/^{\circ}\text{C}$			
Preload	-	No preload required			
Output Ripple (typ./max.BW 50MHz)	mV	40/120		30/120	
Overcurrent Protection	-	Output current limiting with automatic recovery, shutdown CC15, 25 type			
Overvoltage Protection	-	No			
Remote On/ Off	-	CC1R5, 3, 6, & 10: RC terminal open, output is OFF; RC terminal to -Vin (0-0.4V), output is ON CC15 & CC25: RC terminal open, output is ON; RC terminal to +Vin, output is OFF			
Operating Temp.- Convection	$^{\circ}\text{C}$	-40 $^{\circ}\text{C}$ to +85 $^{\circ}\text{C}$ , derates linearly to 40% load from +50 $^{\circ}\text{C}$ to +85 $^{\circ}\text{C}$			
Operating Temp.- Forced Air	$^{\circ}\text{C}$	-40 $^{\circ}\text{C}$ to +85 $^{\circ}\text{C}$ with 1m/s air full load			
Storage Temperature	$^{\circ}\text{C}$	-40 $^{\circ}\text{C}$ to +85 $^{\circ}\text{C}$			
Humidity (non Condensing)	-	95% RH max.(maximum wet-bulb temperature: +38 $^{\circ}\text{C}$ )			
Isolation Voltage	-	500VAC 1 min. Input to output, input to case, output to case			
Isolation Resistance	$\Omega$	Input to output, input to case, output to case: 50m $\Omega$ min. (500VDC)			
Shock	m/s <sup>2</sup>	980m/s <sup>2</sup> (100G) 6ms (6 directions, each 3 times)			
Vibration (non Operating)	-	10 to 55Hz (sweep for 15min) 1.52mm constant, 3 directions X, Y, Z each 2 hours			
Safety Agency Approvals	-	UL60950-1, CSA60950-1, EN60950-1			
Weight	g	CC1R5: 3.2, CC3: 4.5, CC6: 5.8, CC10:10.0, CC15: 12.5, CC25: 20.0			
Size (L x W x H) (Through Hole & SMD package)	mm	CC1R5: 16.51 x 16.61 x 8.51; CC3: 22.86 x 16.61 x 8.51; CC6: 22.86 x 21.11 x 8.51 CC10: 35.56 x 22.61 x 8.51 CC15: 38.10 x 32.11 x 7.49; CC25: 43.21 x 44.91 x 7.49 CC3: SIP type 27.69 x 9.19 x 17.91			
Warranty	yrs	5			

#### Notes:

1. For 24V/30V output - connect across +Vout & -Vout and leave "common out" pin not connected.
2. Based upon equal load current from both outputs.
3. For 15V output connect trim to -Vout.
4. See Installation Manual for full specifications, test methods of parameters and application notes.
5. Not available on CC15 and CC25 models.

Model Selector						
Output Voltage (V)	Output Current (A)	Output Power (W)	5V Input	12V Input	24V Input	48V Input
<b>Single Outputs</b>						
3.3	0.4	1.5	CC1R5-0503SF-E	CC1R5-1203SF-E	CC1R5-2403SF-E	CC1R5-4803SF-E
3.3	0.8	3	CC3-0503SF-E	CC3-1203SF-E	CC3-2403SF-E	CC3-4803SF-E
3.3	1.2	6	CC6-0503SF-E	CC6-1203SF-E	CC6-2403SF-E	CC6-4803SF-E
3.3	2.5	10	CC10-0503SF-E	CC10-1203SF-E	CC10-2403SF-E	CC10-4803SF-E
3.3	4.5	15	-	-	CC15-2403SF-E	-
3.3	7.5	25	-	-	CC25-2403SF-E	-
5	0.3	1.5	CC1R5-0505SF-E	CC1R5-1205SF-E	CC1R5-2405SF-E	CC1R5-4805SF-E
5	0.6	3	CC3-0505SF-E	CC3-1205SF-E	CC3-2405SF-E	CC3-4805SF-E
5	1.0	5	CC6-0505SF-E	-	-	-
5	1.2	6	-	CC6-1205SF-E	CC6-2405SF-E	CC6-4805SF-E
5	2.0	10	CC10-0505SF-E	CC10-1205SF-E	CC10-2405SF-E	CC10-4805SF-E
5	3.0	15	-	-	CC15-2405SF-E	-
5	5.0	25	-	-	CC25-2405SF-E	-
12(15)	0.125(0.1)	1.5	CC1R5-0512SF-E	CC1R5-1212SF-E	CC1R5-2412SF-E	CC1R5-4812SF-E
12(15)	0.25(0.2)	3	CC3-0512SF-E	CC3-1212SF-E	CC3-2412SF-E	CC3-4812SF-E
12(15)	0.5(0.4)	6	CC6-0512SF-E	CC6-1212SF-E	CC6-2412SF-E	CC6-4812SF-E
12(15)	0.8(0.64)	10	CC10-0512SF-E	-	-	-
12(15)	1.0(0.8)	10	-	CC10-1212SF-E	CC10-2412SF-E	CC10-4812SF-E
<b>Dual Outputs</b>						
±12 (15) <sup>3</sup>	0.06(0.05)	1.5	CC1R5-0512DF-E	CC1R5-1212DF-E	CC1R5-2412DF-E	CC1R5-4812DF-E
±12 (15) <sup>3</sup>	0.125(0.1)	3	CC3-0512DF-E	CC3-1212DF-E	CC3-2412DF-E	CC3-4812DF-E
±12 (15) <sup>3</sup>	0.25(0.2)	6	CC6-0512DF-E	CC6-1212DF-E	CC6-2412DF-E	CC6-4812DF-E
±12 (15) <sup>3</sup>	0.4(0.32)	10	CC10-0512DF-E	-	-	-
±12 (15) <sup>3</sup>	0.45(0.36)	10	-	CC10-1212DF-E	CC10-2412DF-E	CC10-4812DF-E

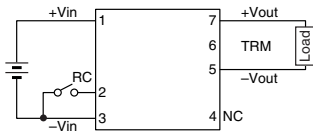
Options	
Version	Description
F-E	Through hole mounting (DIP)
R-E	Surface mount (SMD)
S-E	Through hole mounting (SIP) (SIP option available for CC3 only)

Pinout (CC1R5, 3, 6, and 10)		
Pin	Single	Dual
1	+Vin	+Vin
2	RC	RC
3	-Vin	-Vin
4	NC	-Vout
5	-Vout	Common out
6	TRM	TRM
7	+Vout	+Vout

For CC15 and 25 see Installation Manual online

## Pin Out Diagrams CC-E Series

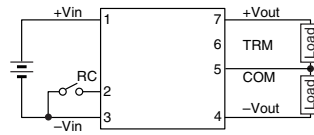
### CONNECTIONS CC1R5-□□□□S□-E



**TERMINAL PIN CONFIGURATION**

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

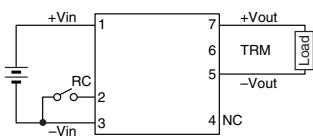
### CC1R5-□□□□D□-E



**TERMINAL PIN CONFIGURATION**

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

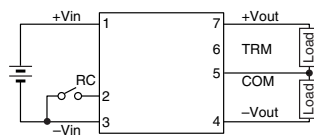
### CONNECTIONS CC3-□□□□S□-E



**TERMINAL PIN CONFIGURATION**

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

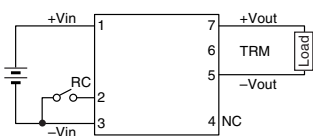
### CC3-□□□□D□-E



**TERMINAL PIN CONFIGURATION**

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

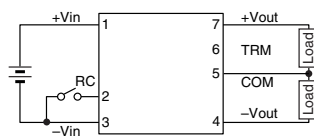
### CONNECTIONS CC6-□□□□S□-E



**TERMINAL PIN CONFIGURATION**

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

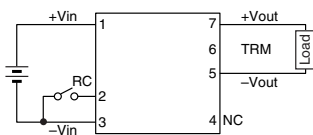
### CC6-□□□□D□-E



**TERMINAL PIN CONFIGURATION**

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

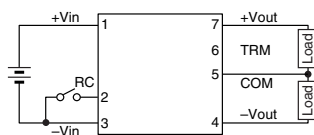
### CONNECTIONS CC10-□□□□S□-E



**TERMINAL PIN CONFIGURATION**

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

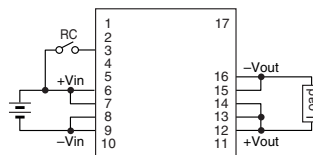
### CC10-□□□□D□-E



**TERMINAL PIN CONFIGURATION**

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

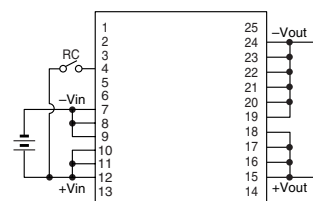
### CONNECTION CC15-xxxxSF-E (DIP TYPE)



**TERMINAL PIN CONFIGURATION**

No.1	NC	No.10	NC
No.2	NC	No.11	NC
No.3	RC	No.12	+Vout
No.4	NC	No.13	+Vout
No.5	NC	No.14	+Vout
No.6	+Vin	No.15	-Vout
No.7	+Vin	No.16	-Vout
No.8	-Vin	No.17	NC
No.9	-Vin		

### CONNECTION CC25-xxxxSF-E (DIP TYPE)



**TERMINAL PIN CONFIGURATION**

No.1	NC	No.10	+Vin	No.19	-Vout
No.2	NC	No.11	+Vin	No.20	-Vout
No.3	NC	No.12	+Vin	No.21	-Vout
No.4	RC	No.13	NC	No.22	-Vout
No.5	NC	No.14	NC	No.23	-Vout
No.6	NC	No.15	+Vout	No.24	-Vout
No.7	-Vin	No.16	+Vout	No.25	NC
No.8	-Vin	No.17	+Vout		
No.9	-Vin	No.18	+Vout		

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