



- 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:

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

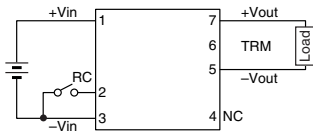
Options	
Version	Description
F-E	Through hole mounting (DIP)
R-E	Surface mount (SMD)
S-E	Through hole mounting (SIP) (SIP option available for CC3 only)

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

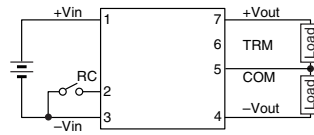
### CONNECTIONS CC1R5-□□□□S□-E



**TERMINAL PIN CONFIGURATION**

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

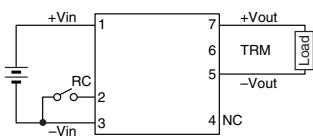
### CC1R5-□□□□D□-E



**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

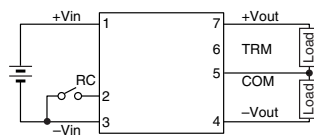
### CONNECTIONS CC3-□□□□S□-E



**TERMINAL PIN CONFIGURATION**

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

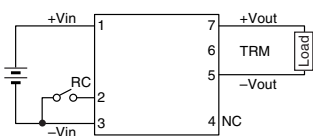
### CC3-□□□□D□-E



**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

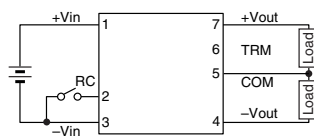
### CONNECTIONS CC6-□□□□S□-E



**TERMINAL PIN CONFIGURATION**

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

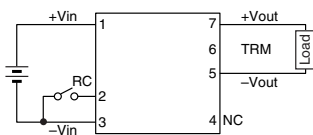
### CC6-□□□□D□-E



**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

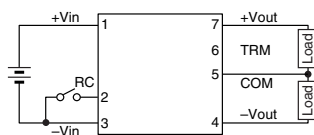
### CONNECTIONS CC10-□□□□S□-E



**TERMINAL PIN CONFIGURATION**

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

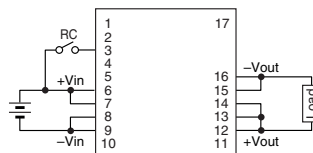
### CC10-□□□□D□-E



**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

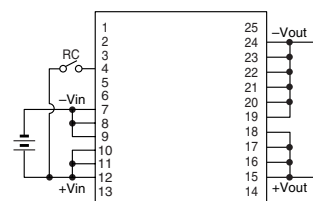
### CONNECTION CC15-xxxxSF-E (DIP TYPE)



**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		

**TDK-LAMBDA EMEA**

[www.emea.tdk-lambda.com](http://www.emea.tdk-lambda.com)



**TDK-Lambda France SAS**

Route de Grivery  
ZAC des Delaches  
CS 41077  
91978 Courtaboeuf Cedex  
France  
Tel: +33 1 60 12 71 65  
Fax: +33 1 60 12 71 66  
[france@fr.tdk-lambda.com](mailto:france@fr.tdk-lambda.com)  
[www.fr.tdk-lambda.com](http://www.fr.tdk-lambda.com)



**Italy Sales Office**  
Via dei Lavoratori 128/130  
20092 Cinisello Balsamo (MI)  
Italy  
Tel: +39 02 61 29 38 63  
Fax: +39 02 61 29 09 00  
[info.italia@it.tdk-lambda.com](mailto:info.italia@it.tdk-lambda.com)  
[www.it.tdk-lambda.com](http://www.it.tdk-lambda.com)



**TDK-Lambda Germany GmbH**

Karl-Bold-Strasse 40  
77855 Achern  
Germany  
Tel: +49 7841 666 0  
Fax: +49 7841 5000  
[info.germany@de.tdk-lambda.com](mailto:info.germany@de.tdk-lambda.com)  
[www.de.tdk-lambda.com](http://www.de.tdk-lambda.com)



**Austria Sales Office**  
Aredstrasse 22  
2544 Leobersdorf  
Austria  
Tel: +43 2256 655 84  
Fax: +43 2256 645 12  
[info.germany@de.tdk-lambda.com](mailto:info.germany@de.tdk-lambda.com)  
[www.de.tdk-lambda.com](http://www.de.tdk-lambda.com)



**TDK-Lambda UK Ltd.**

Kingsley Avenue  
Ilfracombe  
Devon EX34 8ES  
United Kingdom  
Tel: +44 (0) 12 71 85 66 66  
Fax: +44 (0) 12 71 86 48 94  
[powersolutions@uk.tdk-lambda.com](mailto:powersolutions@uk.tdk-lambda.com)  
[www.uk.tdk-lambda.com](http://www.uk.tdk-lambda.com)



**Nemic Lambda Ltd.**

Kibbutz  
Givat Hashlosha 48800  
Israel  
Tel: +9 723 902 4333  
Fax: +9 723 902 4777  
[info@nemic.co.il](mailto:info@nemic.co.il)  
[www.nemic.co.il](http://www.nemic.co.il)



**Russia**

Technical Support:  
St Petersburg  
Tel: +7 (812) 6580463  
Sales:  
Moscow  
Tel: +7 (499) 7557732  
[info@tdk-lambda.ru](mailto:info@tdk-lambda.ru)  
[www.tdk-lambda.ru](http://www.tdk-lambda.ru)

**LOCAL DISTRIBUTION**

