TDK

DC to DC Converters
Non-insulation, DIP Type

Conformity to RoHS Directive

CRZ Series

SPECIFICATIONS AND STANDARDS

BUILT-IN OUTPUT CAPACITOR

Part No.			CRZ0505NC	CRZ0512PC	CRZ0512NC	CRZ0515PC	CRZ0515NC	CRZ0524NC	CRZ0512WC	CRZ0515WC
Maximum output power		W	0.5	0.6	0.6	0.6	0.6	0.6	0.24	0.24
Input conditions										
Input voltage Edc		V	+4.5 to +5.5(+5typ.)							
Efficiency*1		%	65typ.	75typ.	65typ.	75typ.	65typ.	70typ.	65typ.	65typ.
Output characteristics and others										
Output voltage Edc		V	–5	+12	–12	+15	–15	–24	±12	±15
Maximum output current		mA	100	50	50	40	40	25	10	8
Output voltage setting deviation		V	±0.4max.	±0.5max.	±0.5max.	±0.6max.	±0.6max.	±0.8max.	±0.6max.	±0.7max.
Voltage stability	Input variation	%	2	2	3	2	3	2	2	2
	Load variation*2	%	2	2	2	2	2	2	2	2
	Temperature variation*3	%	5	4	7	4	7	4	4	4
Ripple Ep-p		mV	300typ.	300typ.	300typ.	300typ.	300typ.	500typ.	300typ.	300typ.

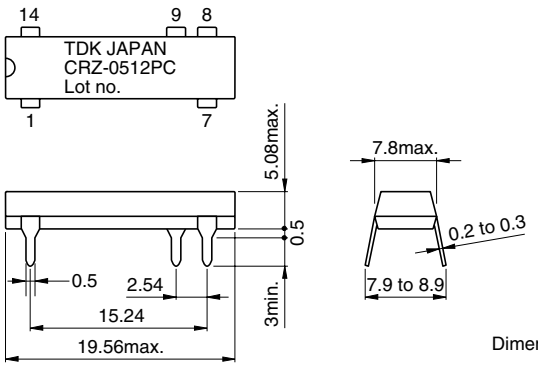
NOT BUILT-IN OUTPUT CAPACITOR

Part No.			CRZ0505N	CRZ0512P	CRZ0512N	CRZ0515P	CRZ0515N	CRZ0524N	CRZ0512W	CRZ0515W
Maximum output power		W	0.5	0.6	0.6	0.6	0.6	0.6	0.24	0.24
Input conditions										
Input voltage Edc		V	+4.5 to +5.5(+5typ.)							
Efficiency*1		%	65typ.	75typ.	65typ.	75typ.	65typ.	70typ.	65typ.	65typ.
Output characteristics and others										
Output voltage Edc		V	–5	+12	–12	+15	–15	–24	±12	±15
Maximum output current		mA	100	50	50	40	40	25	10	8
Output voltage setting deviation		V	±0.4max.	±0.5max.	±0.5max.	±0.6max.	±0.6max.	±0.8max.	±0.6max.	±0.7max.
Voltage stability	Input variation	%	2	2	3	2	3	2	2	2
	Load variation*2	%	2	2	2	2	2	2	2	2
	Temperature variation*3	%	5	4	7	4	7	4	4	4
Ripple Ep-p*4		mV	200typ.	200typ.	200typ.	200typ.	200typ.	300typ.	200typ.	200typ.

*1 Typical input voltage, maximum output current.
*2 The value for the variation of 10 to 100% rated output current(Load variation condition of 2-output product: Balance load).
*3 The value when the temperature is changed from 0 to +50°C for the rated input and output.
*4 The value when the external capacitor(5V output: 33µF, 12V and 15V; 10µF) is connected to the output side.

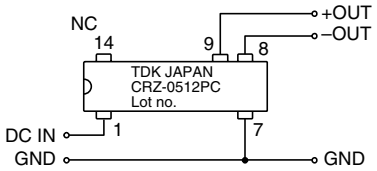
- Conformity to RoHS Directive: This means that, in conformity with EU Directive 2002/95/EC, lead, cadmium, mercury, hexavalent chromium, and specific bromine-based flame retardants, PBB and PBDE, have not been used, except for exempted applications.

SHAPES AND DIMENSIONS



Dimensions in mm

CIRCUIT DIAGRAM



TERMINAL CONNECTION

No.1	Vin(+5V input)
No.7	GND
No.8	–V output(Not connected when +V output, NC)
No.9	+V output(Not connected when –V output, NC)
No.14	NC

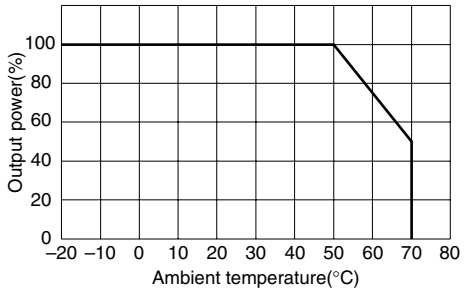
Oscillating method: Astable frequency method
Oscillating frequency:Approx. 200kHz[100% load] to approx. 1200kHz[no load]
MTTF: 226Fit[4420000h, 100% load]

COMMON SPECIFICATIONS

Overcurrent protection		No
Remote ON-OFF		No
Temperature range	Operating(°C)	–20 to +70[Derating is necessary when operating environment temperature exceed 50°C.]
	Storage(°C)	–40 to +85
Humidity range	Operating(%)RH	20 to 95[Maximum wet-bulb temperature: 38°C, without dewing]
	Storage(%)RH	20 to 95[Maximum wet-bulb temperature: 38°C, without dewing]
External dimensions		19.56×5.08×7.8mm[W×H×D]
Weight		1.6g

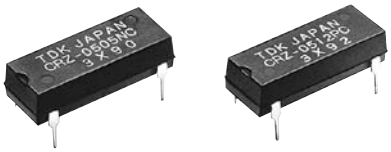
OUTPUT POWER - AMBIENT TEMPERATURE(DERATING)

Derating is necessary when ambient temperature exceeds 50°C.



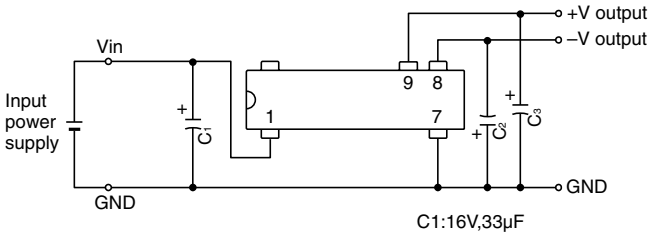
PACKAGING STYLE AND QUANTITY

Exclusive magazine for DC to DC converter's packaging
(25 pieces/magazine)



PRECAUTIONS

- Parallel operation to increase output current is not possible.
- Input fuse
  A fuse(3.15V input/0.4A, 5V input/0.25A) should be connected to the input.
- Wiring between the input power supply and the converter should be short so as to reduce impedance as much as possible. However, if the input line impedance is high, installation of an input capacitor is recommended.
- On the built-in output capacitor type, if an external capacitor is used, the capacitance should be less than 10µF.
- As for an output capacitor non-incorporated product, install the components according to the diagram shown below.



C1:16V,33µF
C2,C3:35V,10µF(Vo>5V)
16V,33µF(Vo=5V)

SOLDERING CONDITIONS

Dipping: 260±5°C, 10s

CLEANING CONDITIONS

Solvent: IPA

OLD AND NEW PRODUCTS COMPATIBLE TABLE

Old product	Old product	Current product	Output(W)	Input voltage(V)	Output voltage(V)
RZC12P25		CRZ0512PC	0.3	5	+12
RZC15P20		CRZ0515PC	0.3	5	+15
RZC05N35		CRZ0505NC	0.175	5	–5
RZC05N50		CRZ0505NC	0.25	5	–5
RZC12N25		CRZ0512NC	0.3	5	–12
RZC15N20		CRZ0515NC	0.3	5	–15
RZC12W20		CRZ0512WC	0.24	5	±12
RZC15W16		CRZ0515WC	0.24	5	±15
RZ12P25		CRZ0512P	0.3	5	+12
RZ15P20		CRZ0515P	0.3	5	+15
RZ05N35		CRZ0505N	0.175	5	–5
RZ05N50		CRZ0505N	0.25	5	–5
RZ12N25		CRZ0512N	0.3	5	–12
RZ15N20		CRZ0515N	0.3	5	–15
RZ12W20		CRZ0512W	0.24	5	±12
RZ15W16		CRZ0515W	0.24	5	±15
BXC005S	CBK0505SF	CCK0505SF	1.2	5	5