



The history of revision change for the specification

NAME OF FILE		SPECIFICATION OF POWER CHOKE			
PART NUMBER		DCYA1770A-C Series			
REV.	REVISED DATE	Description	APPR.	CHK.	ISSU.
A0	2021/05/10	First edition	Haifei Lou	Bingo Guo	Yaling Li

Power Choke DCYA1770A-C Series Type

Features

- High performance (Isat) realized by metal dust core.
- Low profile: Thickness max. 7.0mm
- Low loss realized with low DCR
- 100% lead (Pb) free meet RoHS standard
- AEC-Q200 qualified

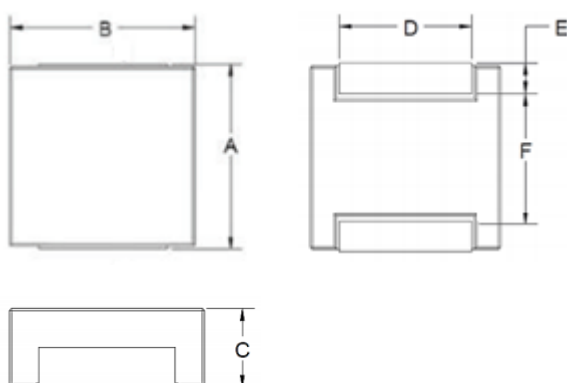
Application

- DC/DC converter in portable device.
- Tablet pc , CPU V core, desktop etc.
- POL & VRMs for server.
- Automotive electronics

Environmental Data

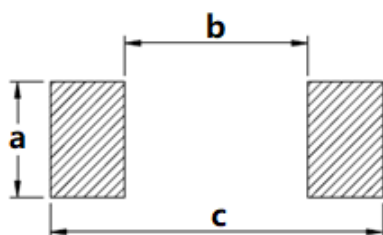
- Storage temperature range (Component): -55 °C to +155 °C
- Operating temperature range: -55 °C to +155 °C (ambient plus self-temperature rise)

Dimensions



Code	Dimensions (mm)
A	17.15±0.3
B	17.15 max
C	7.0 max
D	11.8±0.3
E	2.11±0.3
F	12.9typ

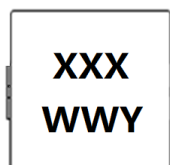
Recommended Pad Layout



a	12.3
b	12.1
c	18.5

Unit: mm

Marking



XXX= Inductance value in μH

WW= weekly letter code

Y= Year with letter code

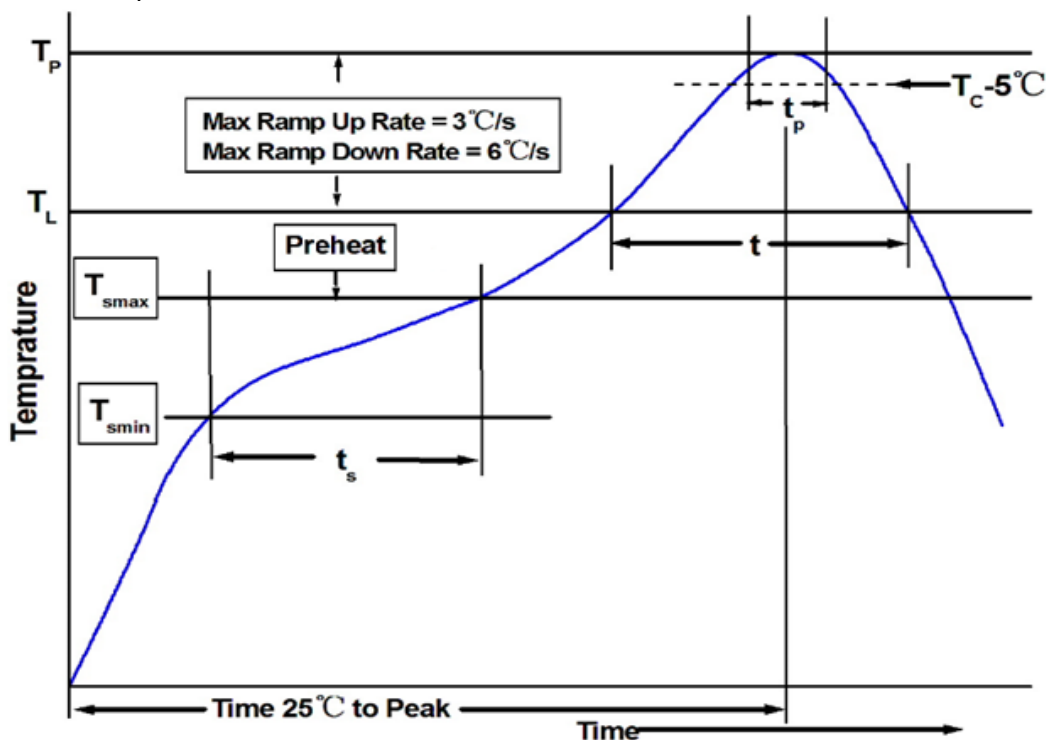
Specifications

Part Number ⁴	L_0^1 (μH) $\pm 20\%$	I_{rms}^2 (A) max	I_{sat}^3 (A) max	DCR (m Ω) @ 25°C	
				typ	max
DCYA1770A-1R0M-C	1.00	36.0	50.0	1.24	1.46
DCYA1770A-1R5M-C	1.50	25.0	34.0	1.94	2.24
DCYA1770A-2R2M-C	2.20	24.0	26.0	2.25	2.41
DCYA1770A-3R3M-C	3.30	22.0	25.0	3.00	3.27
DCYA1770A-4R7M-C	4.70	18.0	27.0	4.10	4.72
DCYA1770A-6R8M-C	6.80	14.0	17.0	6.22	7.16
DCYA1770A-8R2M-C	8.20	12.5	18.0	7.96	8.70
DCYA1770A-100M-C	10.0	12.0	15.0	8.94	10.00
DCYA1770A-150M-C	15.0	10.0	12.5	12.60	15.50
DCYA1770A-220M-C	22.0	8.50	9.20	21.04	22.20
DCYA1770A-330M-C	33.0	7.20	8.50	34.75	37.00
DCYA1770A-470M-C	47.0	5.50	6.80	39.86	46.00
DCYA1770A-680M-C	68.0	5.00	6.00	55.45	60.00

Note:

- Inductance (L_0) Test Parameters: 100kHz, 0.25Vrms, 0.0Adc, +25°C
- I_{rms} : DC current for an approximate temperature rise of 40°C without core loss. Derating is necessary for AC currents. PCB layout, trace thickness and width, air-flow, and proximity of other heat generating components will affect the temperature rise. It is recommended that the temperature of the part not exceed 155°C under worst case operating conditions verified in the end application
- I_{sat} : DC current for approximately 30% rolloff at +25°C
- Part Number Definition: DCYA1770A-XXXM-C
 - DCYA1770 = Product code and size
 - A= Special optional
 - XXX = Inductance value in μH
 - M = tolerance of inductance
 - C suffix = Internal code
- The rated current as listed is either I_{sat} or I_{rms} depending on which value is lower.
- If you require another part number please contact with us.

Solder reflow profile



Table—Lead (Pb) Free Solder(T_c)

Package Thickness	Volume <350 mm ³	Volume: 350~2000 mm ³	Volume >2000 mm ³
<1.6mm	260°C	260°C	260°C
1.6-2.5mm	260°C	250°C	245°C
>2.5mm	250°C	245°C	245°C

Reference J-STD-020D

Profile Feature	Lead (Pb) Free Solder
Preheat and Soak	• Temperature min. (T_{min}) 150°C
	• Temperature max. (T_{max}) 200°C
	• Time (T_{min} to T_{max}) (t_s) 60 ~ 180 Seconds
Average ramp up rate T_{max} to T_p	3°C / Second Max.
Liquidous temperature (T_L)	217°C
Time at liquidous (t_L)	60 ~ 150 Seconds
Peak package body temperature (T_p)*	Table
Time(t_p)** within 5°C of the specified classification temperature (T_c)	30 Seconds**
Average ramp-down rate (T_p to T_{max})	6°C / Second Max.
Time 25°C to Peak Temperature	8 Minutes Max.

* Tolerance for peak profile temperature (T_p) is defined as a supplier minimum and a user maximum.

** Tolerance for time at peak profile temperature (t_p) is defined as a supplier minimum and a user maximum.