



The history of revision change for the specification

NAME OF FILE		SPECIFICATION OF POWER CHOKE			
PART NUMBER		DCYC1050A-C Series			
REV.	REVISED DATE	Description	APPR.	CHK.	ISSU.
A0	2021/05/06	First edition	Haifei Lou	Bingo Guo	Yaling Li

Power Choke DCYC1050A-C Series Type

Features

- High performance (Isat) realized by metal dust core.
- Low profile: Thickness max. 5.0mm
- Low loss realized with low DCR
- 100% lead (Pb) free meet RoHS standard

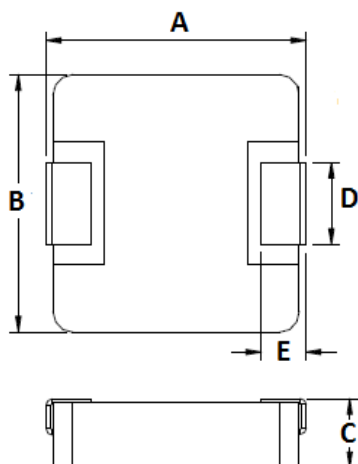
Application

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

Environmental Data

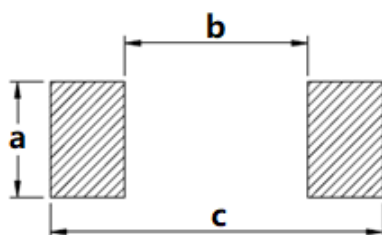
- Storage temperature range (Component): -55 °C to +155 °C
- Operating temperature range: -55 °C to +155 °C (ambient plus self-temperature rise)

Dimensions



Code	Dimensions (mm)
A	10.8±0.4
B	10.0±0.3
C	5.0max
D	2.7±0.3
E	2.35±0.2

Recommended Pad Layout



a	3.5
b	5.4
c	12.5

Unit: mm



Marking



XXX= Inductance value in μH

WW= weekly letter code

Y= Year with letter code

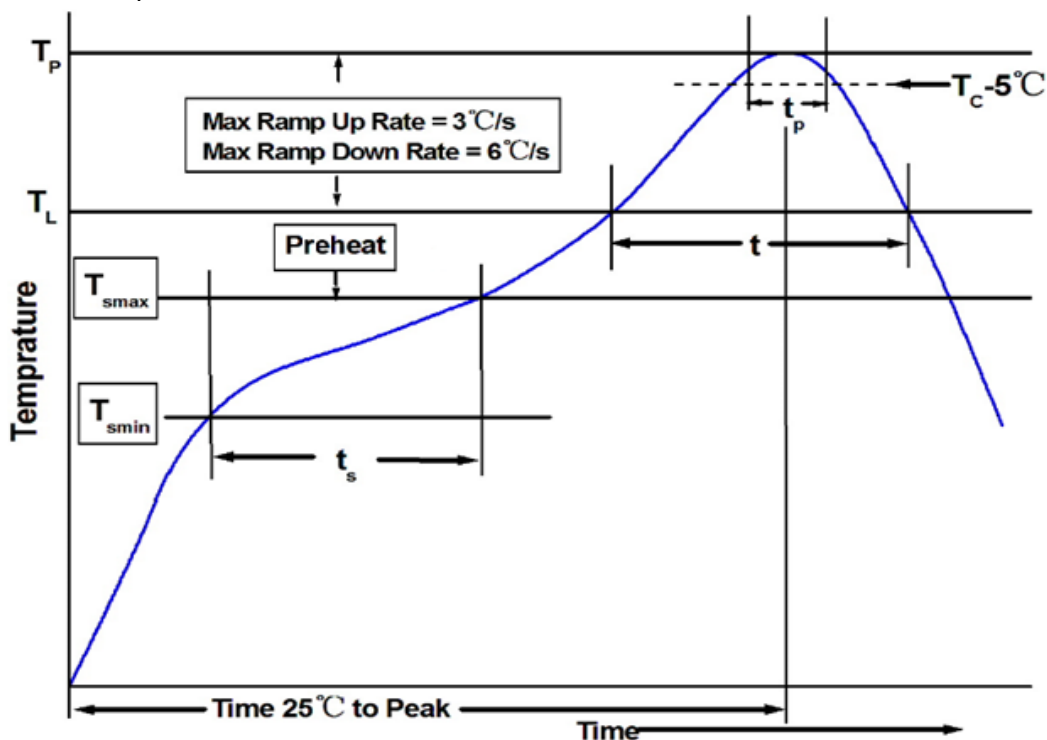
Specifications

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
DCYC1050A-R68M-C	0.68	29.2	30.0	1.65	1.93
DCYC1050A-R72M-C	0.72	28.5	24.0	1.55	1.71
DCYC1050A-R90M-C	0.90	25.0	23.0	1.74	2.02
DCYC1050A-1R0M-C	1.00	22.5	24.0	2.10	2.40
DCYC1050A-1R2M-C	1.20	23.1	21.0	2.10	2.40
DCYC1050A-1R5M-C	1.50	19.5	20.0	2.90	3.34
DCYC1050A-2R2M-C	2.20	16.7	19.0	3.90	4.49
DCYC1050A-2R8M-C	2.80	14.0	18.0	5.20	6.00
DCYC1050A-3R3M-C	3.30	10.3	16.0	9.23	10.7
DCYC1050A-4R7M-C	4.70	9.40	13.0	11.7	13.5
DCYC1050A-5R6M-C	5.60	8.50	12.0	14.0	16.5
DCYC1050A-6R8M-C	6.80	8.20	10.0	17.1	20.0
DCYC1050A-100M-C	10.0	7.00	7.00	22.0	27.0
DCYC1050A-120M-C	12.0	5.70	8.00	31.2	35.9
DCYC1050A-150M-C	15.0	5.70	7.00	34.7	40.3
DCYC1050A-220M-C	22.0	4.60	6.00	52.3	61.0
DCYC1050A-330M-C	33.0	3.90	3.50	70.0	84.0
DCYC1050A-470M-C	47.0	3.20	3.00	97.6	117
DCYC1050A-680M-C	68.0	2.80	4.00	160	211

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: DCYC1050A-XXXM-C
 - DCYC1050 = 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_{smin}) 150°C
	• Temperature max. (T_{smax}) 200°C
	• Time (T_{smin} to T_{smax}) (t_s) 60 ~ 180 Seconds
Average ramp up rate T_{smax} 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_{smax})	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.