

The history of revision change for the specification

NAME OF FILE		SPECIFICATION OF POWER CHOKE			
PART NUMBER		DCYC1040A-T Series			
REV.	REVISED DATE	Description	APPR.	CHK.	ISSU.
A0	2021/04/26	Preliminary Specification	Haifei Lou	Bingo Guo	Yaling Li
A1	2021/09/13	Add R15/R22/R30/R47/R68/R80/6R8/150 /330/470/680, update the parameter of some P/N:R36: Isat from 42 to 45; R56: Isat from 32 to 33; 1R0: Irms from 18 to 19; 2R2: Isat from 18 to 16.5; 3R3: Irms from 10 to 11; 4R7: Irms from 8.5 to 9; 8R2 Irms from 6 to 8; 100: Irms from 7.5 to 7.8 。	Haifei Lou	Bingo Guo	Dujuan Chen
A2	2021/12/10	Update the Isat of DCYC1040A-R36M from 45 to 60	Haifei Lou	Bingo Guo	Dujuan Chen
A3	2021/12/21	Update the Isat of DCYC1040A-2R2M from 16.5 to 18	Haifei Lou	Bingo Guo	Dujuan Chen
A4	2022/01/19	Update the Irms of DCYC1040A-2R2M from 12 to 13	Haifei Lou	Bingo Guo	Dujuan Chen
A5	2022/04/01	Delete the specification of DCYC1040A-470M/680M-T	Haifei Lou	Nan Wang	Dujuan Chen
A6	2022/04/07	update the parameter of some P/N: R47: DCR(typ) from 1.53 to 1.15 ,DCR(max) from 1.7 to 1.4; R68: DCR(typ) from 2.16 to 1.8 ,DCR(max) from 2.4 to 2.2; 6R8: DCR(typ) from 22.5 to 18.5 ,DCR(max) from 25 to 21.5. 150: DCR(typ) from 40.5 to 45 ,DCR(max) from 45 to 50.	Haifei Lou	Nan Wang	Dujuan Chen
A7	2022/12/06	Update the Isat of DCYC1040A-R45M from 36 to 50	Haifei Lou	Nan Wang	Dujuan Chen

Power Choke DCYC1040A-T Series Type

Features

- High performance (Isat) realized by metal dust core.
- Low profile: Thickness max. 4.0mm
- Low loss realized with low DCR
- 100% lead (Pb) free meet RoHS standard

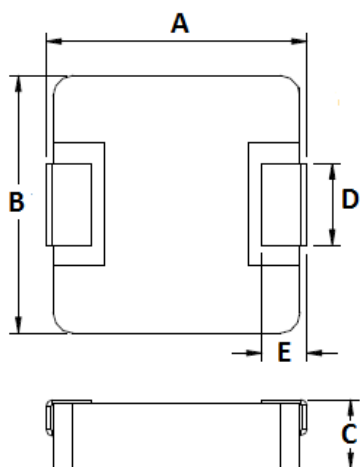
Application

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

Environmental Data

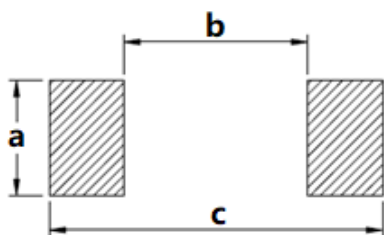
- Storage temperature range (Component): -55 °C to +125 °C
- Operating temperature range: -55 °C to +125 °C (ambient plus self-temperature rise)

Dimensions



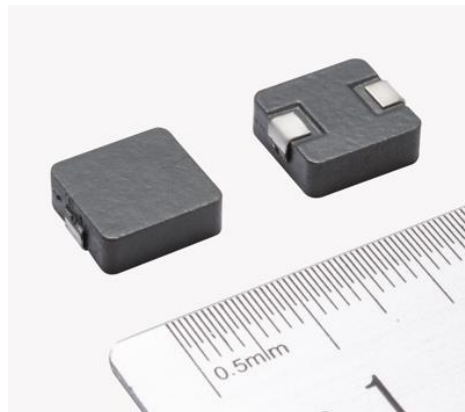
Code	Dimensions (mm)
A	11.1±0.4
B	10.0±0.3
C	4.0max
D	3.0±0.5
E	1.8min

Recommended Pad Layout



a	4.5
b	5.4
c	12.0

Unit: mm





Marking



XXX= Inductance value in μH

WW= weekly letter code

Y= Year with letter code

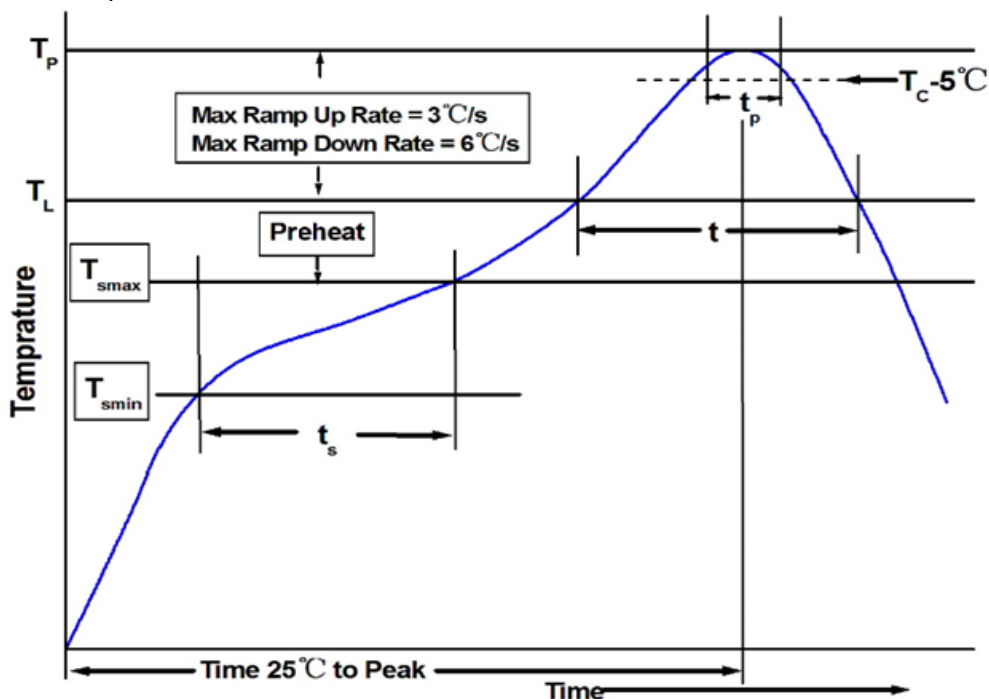
Specifications

Part Number ⁴	L_0^1 (μH) $\pm 20\%$	I_{rms}^2 (A) max	I_{sat}^3 (A) max	DCR ($m\Omega$) @ 25°C	
				typ	max
DCYC1040A-R15M-T	0.15	45.0	75.0	0.59	0.65
DCYC1040A-R20M-T	0.20	32.0	45.0	0.63	0.72
DCYC1040A-R22M-T	0.22	35.0	60.0	0.90	1.00
DCYC1040A-R30M-T	0.30	35.0	45.0	0.99	1.10
DCYC1040A-R36M-T	0.36	30.0	60.0	1.04	1.20
DCYC1040A-R45M-T	0.45	29.0	50.0	1.07	1.23
DCYC1040A-R47M-T	0.47	30.0	40.0	1.15	1.40
DCYC1040A-R56M-T	0.56	25.0	33.0	1.56	1.80
DCYC1040A-R68M-T	0.68	23.0	30.0	1.80	2.20
DCYC1040A-R80M-T	0.80	23.0	29.0	2.43	2.70
DCYC1040A-R90M-T	0.90	22.0	28.0	2.17	2.50
DCYC1040A-1R0M-T	1.00	19.0	28.0	3.00	3.30
DCYC1040A-1R5M-T	1.50	16.0	32.0	3.80	4.20
DCYC1040A-2R2M-T	2.20	13.0	18.0	6.00	7.00
DCYC1040A-3R3M-T	3.30	11.0	16.0	10.8	11.8
DCYC1040A-4R7M-T	4.70	9.00	15.0	17.0	20.0
DCYC1040A-6R8M-T	6.80	8.50	12.0	18.5	21.5
DCYC1040A-8R2M-T	8.20	8.00	9.00	25.0	27.0
DCYC1040A-100M-T	10.0	7.80	8.50	27.0	30.0
DCYC1040A-150M-T	15.0	6.50	7.00	45.0	50.0
DCYC1040A-220M-T	22.0	5.00	5.50	60.0	66.0
DCYC1040A-330M-T	33.0	4.40	4.80	82.8	92.0

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 125°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: DCYC1040A-XXXM-T
 - DCYC1040 = Product code and size
 - A= Special optional
 - XXX = Inductance value in μH
 - M = tolerance of inductance
 - T 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})
	• Temperature max. (T_{smax})
	• Time (T_{smin} to T_{smax}) (t_s)
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.