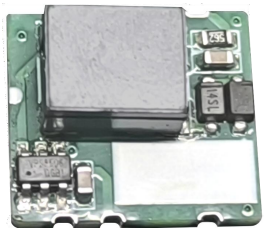
FEATURES



1. Efficiency up to 89%
2. The no-load input current is as low as 3mA.
3. sustainable short circuit protection
4. Operating temperature range: -40℃ to +85℃
5. Isolation voltage: 1500VDC
6. 3 years warranty
7. Small SMD Package and Standard Pin Arrangement

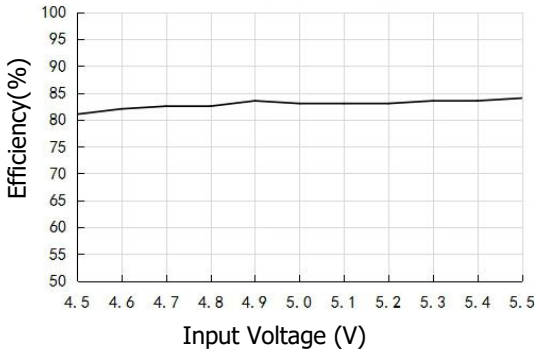
Selection Guide

Product model	Input voltage (VDC)	Output		Efficiency(%) Min./Typ.	Maximum Capacitive load (μF)
	Nominal value (range value)	Output voltage (VDC)	Output current (mA) Max./Min.		
CMBT-0505-1WLB	5 (4.5-5.5)	5	200/20	Full load: 80/84 Half load: 85/89	2400

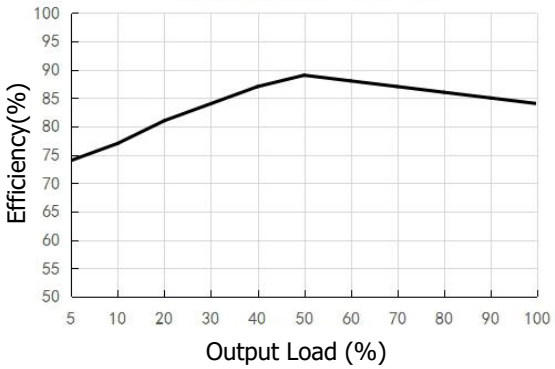
Basic characteristics

Item	Operating Conditions		Min.	Typ.	Max.	Unit
Filter type	——		Capacitor filtering			
Input voltage range	——		-10	--	10	%Vnom
Input reflection ripple current	20MHz bandwidth		--	15	--	mA
Enter the static current	Nominal 5VDC input	5V output	--	3	--	mA
Switching frequency	100% load, nominal input voltage		--	260	--	kHz
Output ripple & noise	20MHz bandwidth, 5% -100% load, parallel line test method		--	30	75	mVp-p

Efficiency Vs Input Voltage (Full Load)

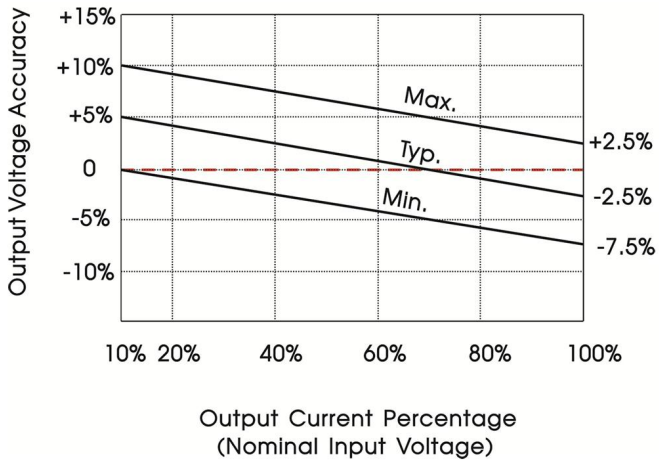


Efficiency Vs Output Load(Vin=5V)



Item	Operating Conditions		Min.	Typ.	Max.	Unit
Output voltage accuracy	——		See the error envelope curve diagam.			
Linear rate of adjustment	Full load, input voltage variation ±1%	3.3VDC output	--	--	±1.2	--
Load regulation rate	10% -100% load		--	±8	±15	%

Error envelope curve diagram



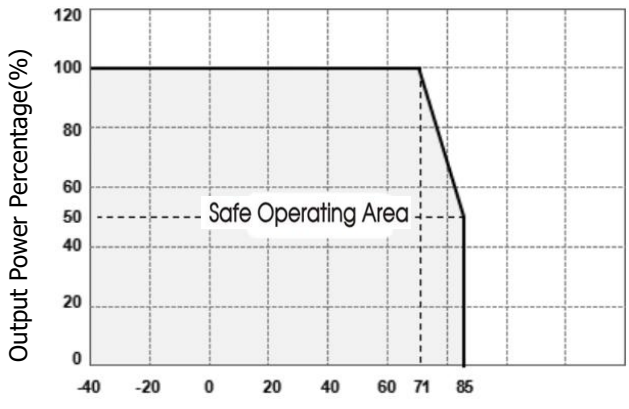
Defencive function

Item	Operating Conditions	Min.	Typ.	Max.	Unit
Isolation voltage	Input-output test: leakage current less than 1mA for 1 minute	1500	--	--	VDC
Insulation resistance	Input-output, insulated voltage 500VDC	1G	--	--	Ω
Isolating capacitance	Input-output, 100kHz/0.1V	--	20	--	pF
Insulation grade	——	Functional insulation			
Input surge voltage	5V input series, test time 1s	-0.7	--	9	VDC
Hot plug	——	Non-support			
Short-circuit protection	Within the input voltage range	Sustainable, self-recovering			

Environmental characteristics

Item	Operating Conditions		Min.	Typ.	Max.	Unit
Working temperature	Natural convection 0.2 m/s (see temperature derating curve)		-40	--	85	℃
Storage temperature	——		-55	--	125	℃
Reflow soldering temperature	Refer to IPC/JEDEC J-STD-020D.1		The peak temperature Tc is no more than 245℃, and the maximum duration when it exceeds 217℃ is 60s			
Temperature drift coefficient	Loaded to capacity		--	±0.02	--	%/℃
Storage humidity	No condensation		5		95	%RH
MTBF	MIL-HDBK-217F	25℃	3500	--	--	k hours
Temperature derating curve (natural convection 0.2 m/s)						

Temperature Derating



Design and Application of Typical Circuits

If further reduction of the input and output ripple is required, a capacitor filter network can be connected to the input and output terminals, as shown in the figure.

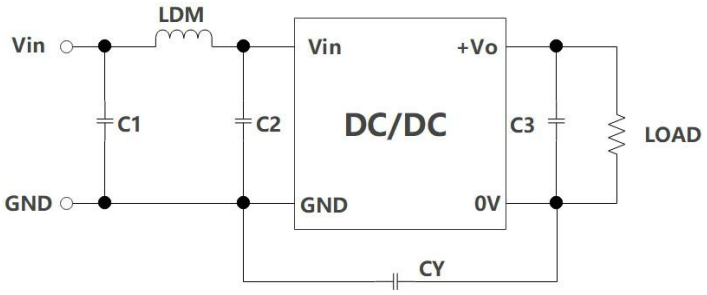
However, it is important to select the appropriate filter capacitor. If the capacitor is too large, it may cause startup issues. For each output channel, under the condition of ensuring safe and reliable operation, the recommended capacitive load values are listed in the table below.

Recommended parameter table for application circuits			
Vin	Cin	Vo single output	Cout one way
5VDC	4.7uF/16V	5VDC	2.2uF/25V

EMC characteristic

EMI	Conduction		See EMC recommended peripheral circuits	CISPR32/EN55032 CLASS B
	Radiation		See EMC recommended peripheral circuits	CISPR32/EN55032 CLASS B
EMS	ESD	5V input	Air ±8kV and Contact ±4kV	EN61000-4-2, perf. Criteria B

EMC recommended peripheral circuit

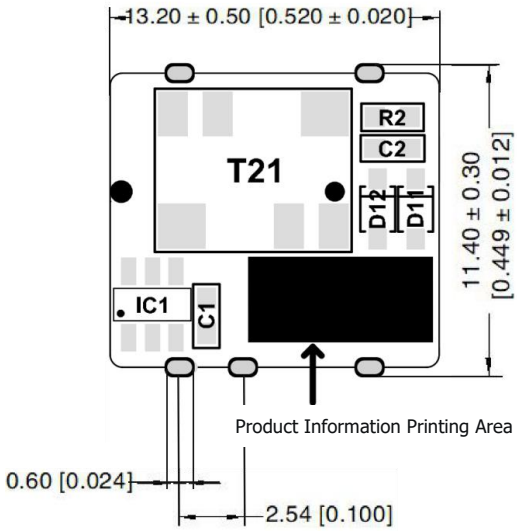


EMI recommended parameters table		
Vin		5VDC
Vo		5VDC
EMI	C1/C2	4.7uF/25V
	C3	Refer to the typical application Cout
	CY	100pF~1000pF//2kV
	LDM	6.8uH

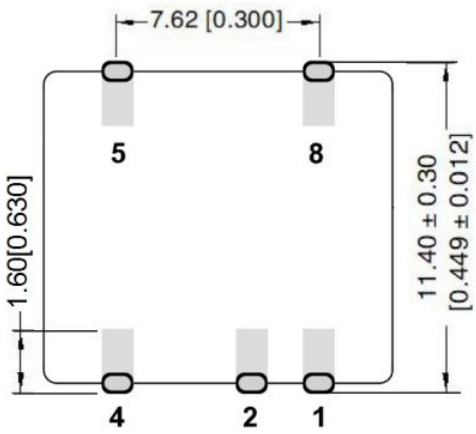
Physical characteristics

Size (L*W*H)	——	13.20 x 11.40 x 4mm
Weight	——	1.1g (Typ.)

Top view

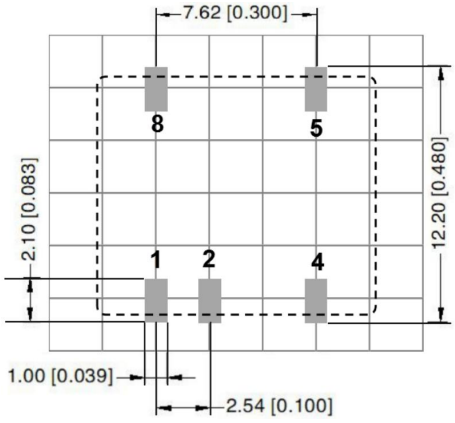


Bottom view



Note:
Unit: mm[inch]
Pin section tolerances:±0.10[±0.004]
General tolerances:±0.25[±0.010]

Recommended solder pads



Note: The grid spacing is 2.54 * 2.54 mm.

Pin#	Function
1	GND
2	Vin
4	0V
5	+Vo
8	NC

NC: Pin to be isolated from circuitry

Packaging Information

MPQ	Carrier tape	400pcs
	Pipe fitting	TBD

Note:
1. If the product works under the minimum required load, it cannot guarantee that the performance of the product complies with all the performance indicators in this manual;
2. The maximum capacitive load is tested under the input voltage range and full load condition;
3. Unless otherwise stated, all indexes in this manual are measured at Ta=25℃, humidity <75%RH, nominal input voltage and rated output load;
4. All index testing methods in this manual are based on the enterprise standards of the company;
5. Our company can provide product customization, specific needs can directly contact our technical staff;