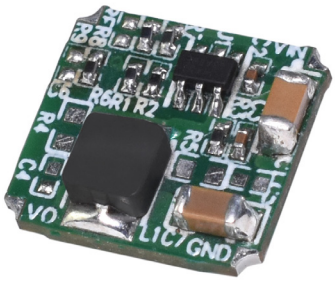
SERIES: PXO78B-500-M | **DESCRIPTION:** NON-ISOLATED DC SWITCHING REGULATOR

FEATURES

- 0.5 A current output
- ultra-thin, open-frame SMD Package, thickness ≤3.5 mm
- high efficiency up to 94%
- no-load input current as low as 0.5 mA
- continuous short-circuit protection
- certified to EN/IEC 62368-1



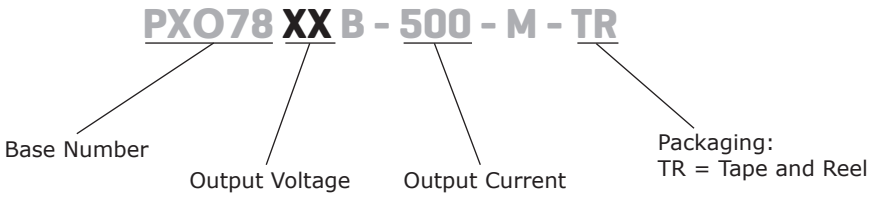
RoHS CE UKCA

MODEL

MODEL	input voltage typ (Vdc)	input voltage range (Vdc)	output voltage (Vdc)	output current max (mA)	output power max (W)	ripple & noise[1] max (mVp-p)	efficiency[3] typ (%)
PXO7803B-500-M-TR	24	4.75~36	3.3	500	1.65	50	86
PXO7805B-500-M-TR	24	6.5~36	5	500	2.5	50	90
PXO7812B-500-M-TR	24	15~36	12	500	6.0	50	94

Notes:
1. Tested at nominal input, 20 MHz bandwidth, peak to peak, full load with 1 µF capacitor.
2. Measured at min Vin.
3. For input voltages higher than 30 Vdc a 22 µF/50V input capacitor is required.
4. All specifications are measured at Ta=25°C, humidity < 75%, nominal input voltage, and rated output load unless otherwise specified.

PART NUMBER KEY



INPUT

parameter	conditions/description	min	typ	max	units
operating input voltage			24	36	Vdc
current	at minimum Vin, full load			0.45	A
no-load input current			0.5		mA
inrush current	as per ETS300 132-2			0.1	A^2s
reflected ripple current	at nominal Vin, 12µH, 47µF, full load		30		mA
filter	capacitive filter				
surge	at 100 ms max		40		Vdc
remote on/off	module on CTRL pin open (3.2~8 Vdc) module off CTRL pin pulled low (0~0.8 Vdc)				
remote on/off current	input current when off			1	mA

OUTPUT

parameter	conditions/description	min	typ	max	units
maximum capacitive load	3.3 Vdc output model 5 Vdc output model 12 Vdc output model			680 470 100	µF µF µF
voltage accuracy	at full load		±3		%
line regulation	at full load, high line to low line			±0.4	%
load regulation	at nominal input, 10~100% load		±0.6		%
switching frequency	pulse wide modulation		800		kHz
transient recovery time	at nominal input voltage, 25% load step change		0.2	1	ms
transient response deviation	at nominal input voltage, 25% load step change			±3	%
temperature coefficient	at operating temperature -40~85°C		±0.03		%/°C

PROTECTIONS

parameter	conditions/description	min	typ	max	units
over current protection	auto recovery, hiccup mode			160	%
short circuit protection	continuous, auto recovery				

SAFETY AND COMPLIANCE

parameter	conditions/description	min	typ	max	units
safety approvals	certified to 62368-1: IEC,EN				
EMI/EMC	EN 55032 with external filter, Class B				
ESD	EN 61000-4-2 Contact ±4 kV, Perf. Criteria A				
radiated immunity	EN 61000-4-3 10 V/m, Perf. Criteria A				
EFT/burst	EN 61000-4-4 2012, ±1 kV, Perf. Criteria B				
surge	EN 61000-4-5 Level 2 Line to line, ±0.5 kV, external input TVS required, Perf. Criteria A				
conducted immunity	EN 61000-4-6 Level 2 0.15~80 MHz, 3 V, Perf. Criteria A				
shock & vibration	MIL-STD-810F compliant				
MTBF	as per MIL-HDBK-217F, Notice 1, GB, 25°C	2,000,000			hours
RoHS	yes				

ENVIRONMENTAL

parameter	conditions/description	min	typ	max	units
operating temperature	see derating curve	-40		85	°C
storage temperature		-55		125	°C
storage humidity	non-condensing	-		95	%

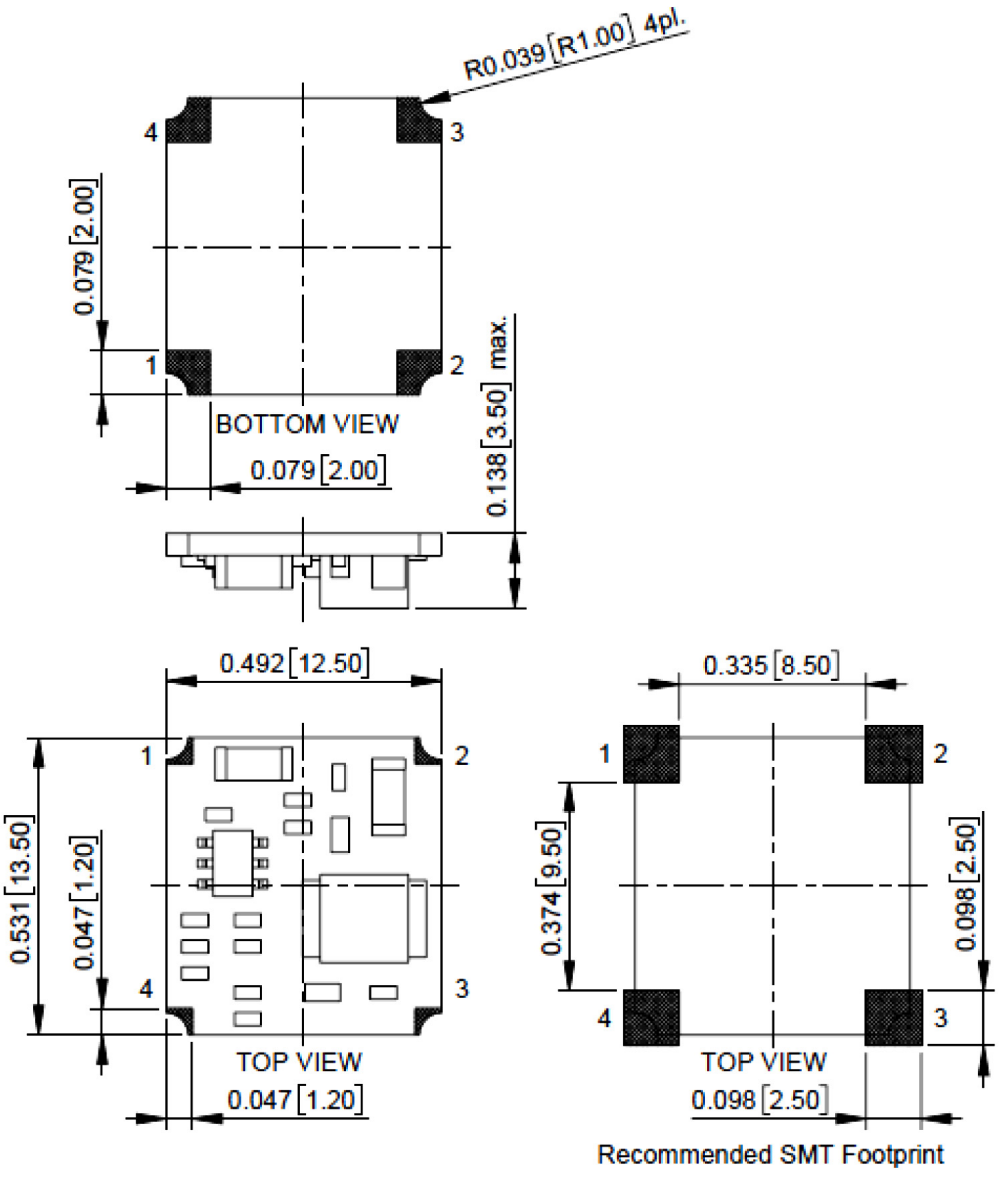
MECHANICAL

parameter	conditions/description	min	typ	max	units
dimensions	0.492 x 0.531 x 0.138 [12.50 x 13.50 x 3.50 mm]				inch
weight			0.9		g

MECHANICAL DRAWING

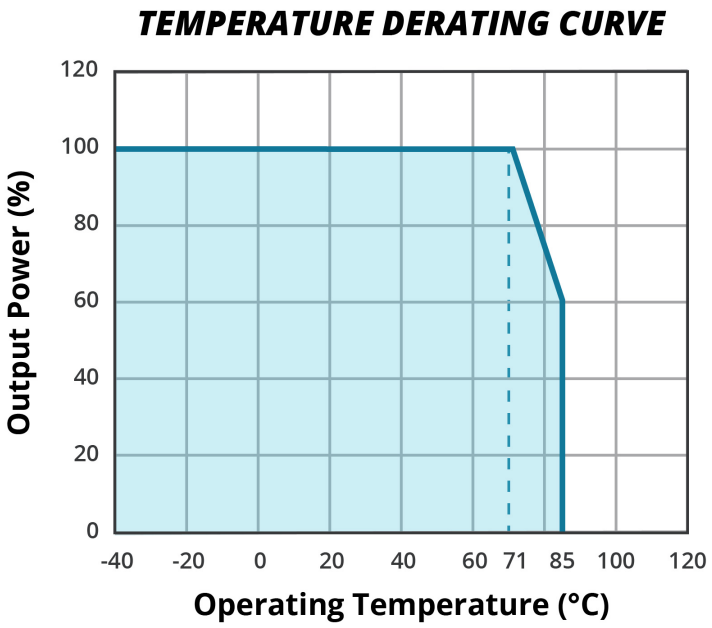
units: inch [mm]
tolerance: inches: x.xx=±0.02, x.xxx=±0.010
mm: x.x=±0.5, x.xx=±0.25

PIN-OUT	
PIN	FUNCTION
1	+Vin
2	GND
3	+Vo
4	remote on/off



DERATING CURVE

Figure 1



EMC RECOMMENDED CIRCUIT

Figure 2

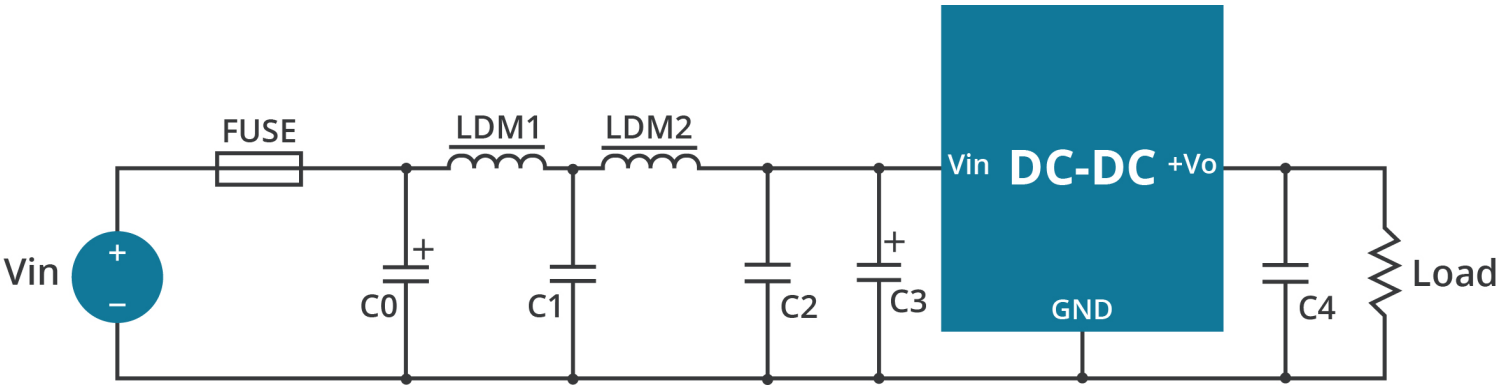


Table 1

Recommended external circuit components	
FUSE	choose according to actual input current
LDM1	82 µH
C0 / C3	330 µF/ 50 V
C4	-
C1 / C2	10 µF / 50 V
LDM2	22 µH

REVISION HISTORY

rev.	description	date
1.0	initial release	05/14/2025

The revision history provided is for informational purposes only and is believed to be accurate.

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