



## INPUT

parameter	conditions/description	min	typ	max	units
input voltage	12 Vdc input models	9	12	18	Vdc
	24 Vdc input models	18	24	36	Vdc
start-up voltage	12 Vdc input models			9	Vdc
	24 Vdc input models			18	Vdc
surge voltage	for maximum of 1 second				
	12 Vdc input models	-0.7		25	Vdc
	24 Vdc input models	-0.7		50	Vdc
filter	capacitance filter				
current	full load/no load				
	12 Vdc input models		314/30	338/50	mA
	24 Vdc input models		154/20	165/40	mA

## OUTPUT

parameter	conditions/description	min	typ	max	units
line regulation	min to max Vin				
	positive outputs		±0.2	±0.5	%
	negative outputs		±0.5	±1	%
load regulation	5% ~ 100% load				
	positive outputs		±0.5	±1	%
	negative outputs			±3	%
set-point accuracy	5% ~ 100% load				
	positive outputs		±1	±3	%
	negative outputs		±3	±5	%
switching frequency	full load, nominal input		300		kHz
transient response	25% load step change		±2.5	±5	%
temperature coefficient	full load			±0.03	%/°C

## PROTECTIONS

parameter	conditions/description	min	typ	max	units
short circuit protection	continuous, self-recovery				

## SAFETY AND COMPLIANCE

parameter	conditions/description	min	typ	max	units
isolation voltage	input-output electric strength test for 1 minute	1500			Vdc
isolation resistance	input-output insulation at 500 Vdc	1000			MΩ
isolation capacitance	input-output capacitance at 100 KHz / 0.1 V		100		pF
safety approvals	EN62368				
EMC	CISPR32/EN55032 Class B (see recommended circuit)				
ESD	IEC/EN61000-4-2, Contact ±6K, perf. Criteria B				
radiated immunity	IEC/EN61000-4-3, 10 v/m, perf. Criteria A				
EFT/burst	IEC/EN61000-4-4, ±2KV, perf. Criteria B (see recommended circuit)				
surge	IEC/EN61000-4-5, line to line ±2KV, perf. Criteria B (see recommended circuit)				
conducted immunity	IEC/EN61000-4-6 3 Vrms, perf. Criteria A				
RoHS	yes				
MTBF	MIL-HDBK-217F @ 25°C	1000			kHours

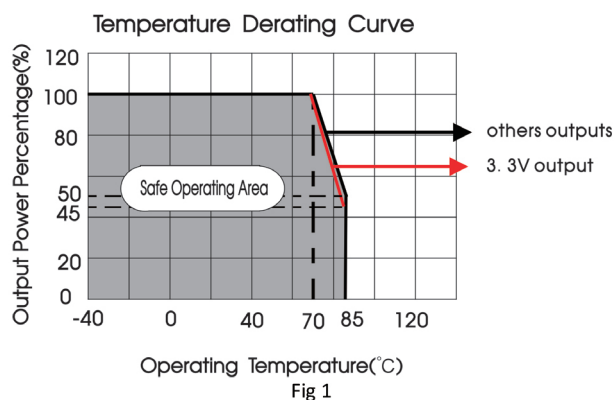
## ENVIRONMENTAL

parameter	conditions/description	min	typ	max	units
operating temperature		-40		85	°C
storage temperature		-55		125	°C
humidity	non-condensing	5		95	%

## SOLDERABILITY

parameter	conditions/description	min	typ	max	units
hand soldering	1.5 mm from case for 10 seconds			300	°C
reflow soldering	60 s max over 217°C			245	°C

## DERATING CURVE



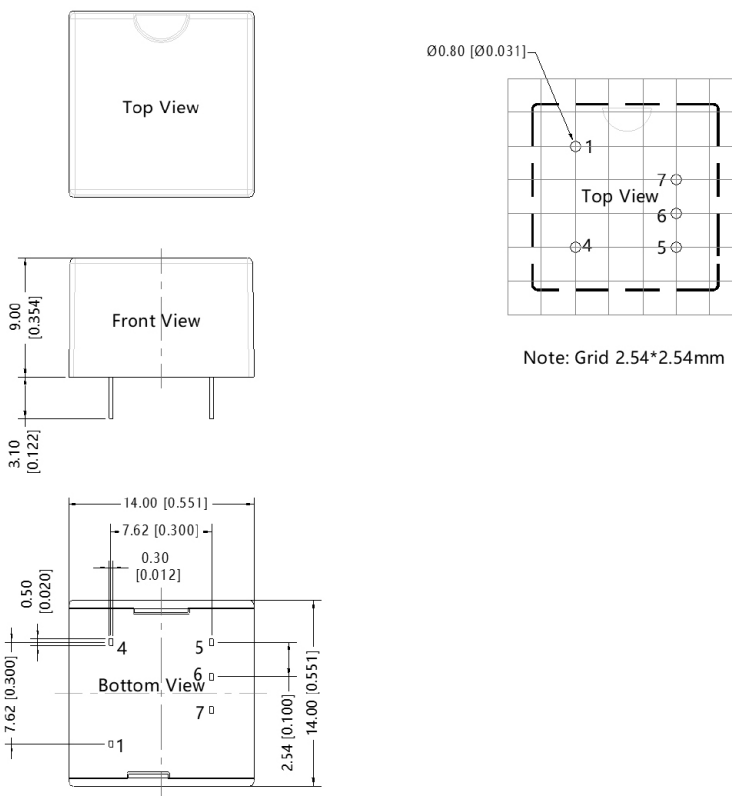
## MECHANICAL

parameter	conditions/description	min	typ	max	units
dimensions	14 x 14 x 9				mm
case material	Black plastic; flame-retardant and heat-resistant				
weight			2.2		g

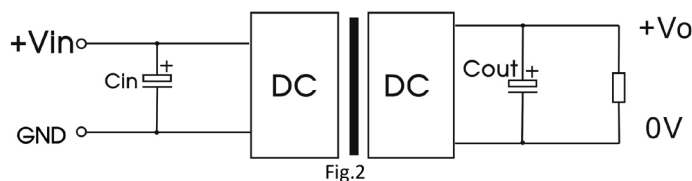
## MECHANICAL DRAWING

units: mm [inches]  
 tolerance: ± 0.50 [±0.020]

PIN CONNECTIONS		
PIN	Single	Dual
1	GND	GND
4	Vin	Vin
5	+Vo	+Vo
6	NC	0V
7	0V	-Vo

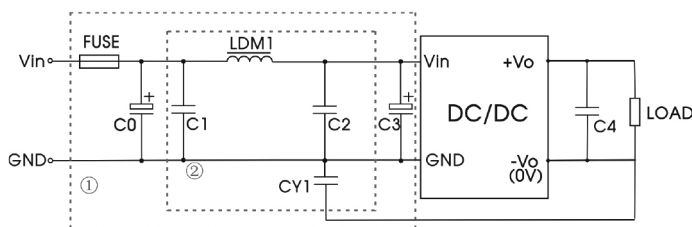


## RECOMMENDED CIRCUITS



Parameter Description		
Vin (Vdc)	12	24
Cin	47uF/25V	47uF/50V
Vo (Vdc)	3.3, 5	12, 15, 24
Cout	100uF/6.3V	27uF/35V

## EMC COMPLIANCE CIRCUITS



Parameter Description										
Part No.	Vin: 12 Vdc					Vin: 24 Vdc				
Vo (Vdc)	3.3	5	12	15	24	3.3	5	12	15	24
FUSE	slow blow, choose according to actual input current									
C0	1000 $\mu$ F/25V					680 $\mu$ F/50V				
C1	10 $\mu$ F/50V		4.7 $\mu$ F/50V			10 $\mu$ F/50V		4.7 $\mu$ F/50V		
LDM1	15 $\mu$ H									
C2	4.7 $\mu$ F/50V									
C3	330 $\mu$ F/50V									
CY1	1nF/2KV									
C4	Refer to the Cout Fig.2									

## REVISION HISTORY

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rev.	description	date
1.0	initial release	03/28/2020
1.01	units updated in the mechanical drawing section	10/19/2020

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



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