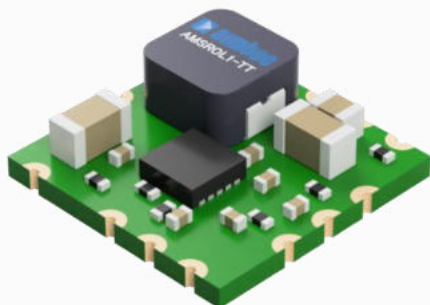


AMSROL1-TT

Click to
ORDER
samples



Open frame

The AMSROL1-TT series is designed to offer an ultra-thin solution to customers with designs that have challenging height considerations. This series comes in an open frame SMD package, with a compact total height of just 0.16inches (4mm) for the 5W model.

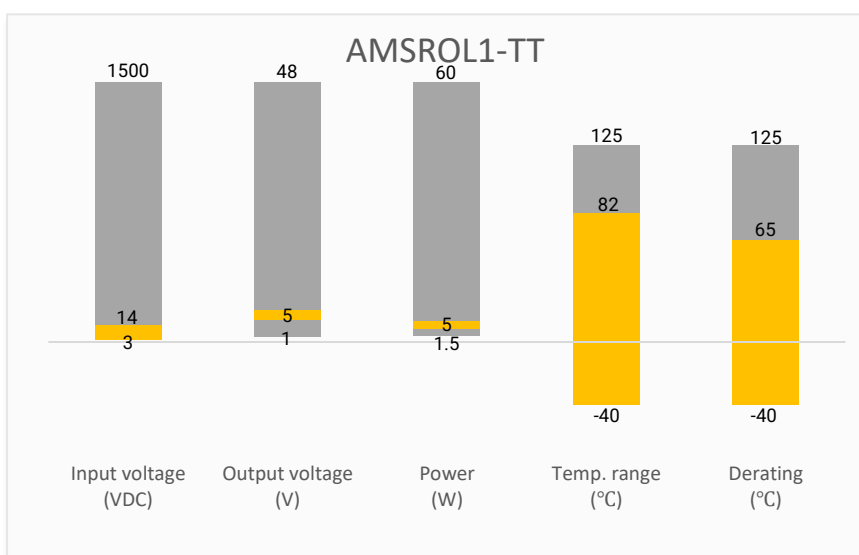
In addition, the AMSROL1-TT offers a non-isolated design and supports a wide 4:1 input voltage range of 3-14VDC. Additionally, it includes short circuit protection, which enables the AMSROL1-TT series to be used in a variety of applications related to industrial control systems, MCU control and cost-efficient projects.

Features

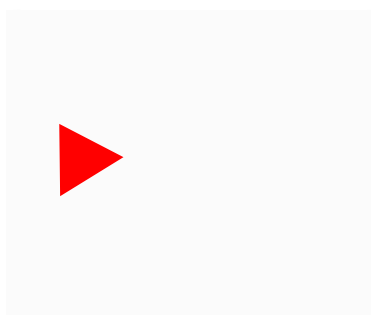
- Input Range: 3VDC – 14VDC
- Operating Temp: -40 °C to +82 °C
- Low ripple & noise, 40mV(p-p) max.
- Efficiency up to 89%
- Adjustable output voltage
- Output short circuit protection
- Open frame SMD package
- Regulated Output



Summary



Training



Product Training Video
(click to open)



Press Release

Coming Soon!

Application Notes

Applications



Power Grid



Industrial



Telecom



Instrumentation

Models & Specifications

Single Output							
Model	Input Voltage (VDC)	Output Voltage (VDC)	Input Current		Output Current Max (mA)	Maximum Capacitive Load (μF)	Efficiency Typ. (%) Full Load
			No Load Max (mA)	Full Load Typ. (mA)			
AMSROL1-1205STTTR	12 (3 ~ 14)	5 (1 ~ 5.5)	15	466	1000	200	89

Note: Use suffix "TR" for tape & reel packing (ex. AMSROL1-1205STTTR).

Input Specification				
Parameters	Conditions	Typical	Maximum	Units
Voltage range	See models table	12	14	VDC
Input current	Ctrl off mode	--	1	mA
Start-up voltage		≥ 3	--	VDC
Ctrl *	ON	Ctrl pin open or pulled high(1.6~5VDC)		
	OFF	Ctrl pin pulled low to GND(0~0.1VDC)		

* The Ctrl pin voltage is referenced to input GND.

Output Specification				
Parameters	Conditions	Typical	Maximum	Units
Voltage accuracy	0 ~ 100% load	± 3	--	%
Line regulation	Full load	--	± 0.3	%
Load regulation	10 ~ 100% load	--	± 0.3	%
Short circuit protection	Continuous, Auto recovery			
Ripple & Noise*	20MHz bandwidth, Vout=1V	--	40	mV pk-pk
Output voltage adjustment	Vout ≤ Vin*0.7	≥ 1	5.5	VDC
Start-up time		--	6	mS

* Ripple and Noise are measured at 20MHz bandwidth by using a 0.1μF (M/C) capacitor and typical input with full load.

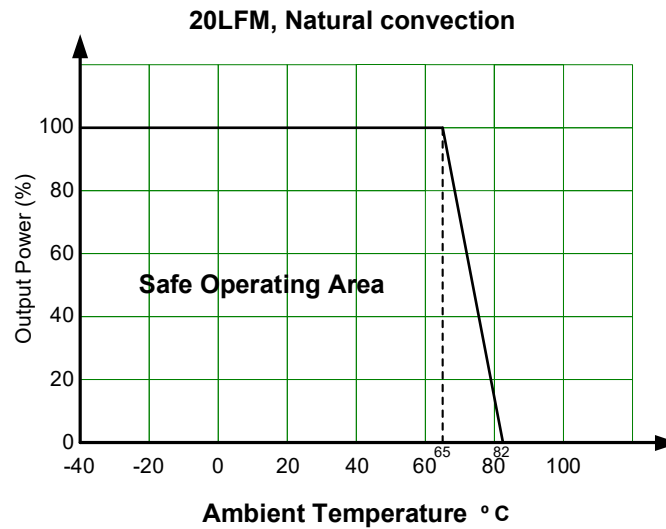
General Specifications				
Parameters	Conditions	Typical	Maximum	Units
Switching frequency	Full load	800	--	KHz
Operating temperature	See derating graph	-40 to +82		°C
Storage temperature		-55 to +125		°C
Reflow soldering temperature	Peak temp ≤ 245°C, 60~150 sec at 217°C, please refer to J-STD-020			
Cooling	20LFM, Natural convection			
Humidity	Non-condensing	> 5	95	% RH
Vibration	MIL-STD-202G			
Weight	Open frame model	1	--	g
Dimensions (L x W x H)	Open frame model	0.49 x 0.49 x 0.18 inches, 12.40 x 12.40 x 4.00mm		
MTBF	> 2 600 000 hrs (MIL-HDBK -217F, t=+25°C) / Full Load			

Safety Specifications

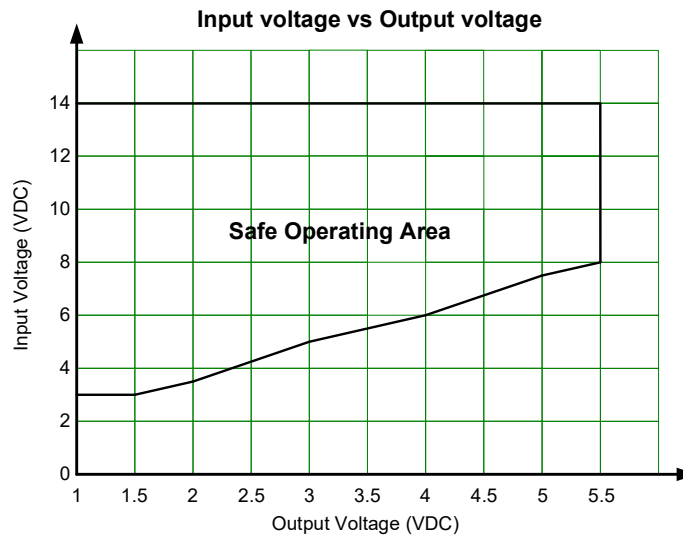
Parameters

Standards	Design to meet EN 62368-1	
	EMC - Conducted and radiated emission	Design to meet EN55032, CLASS B with recommended circuit
	Electrostatic Discharge Immunity	EN 61000-4-2 Air $\pm 8\text{KV}$, Contact $\pm 6\text{KV}$, Criteria B
	Electrical Fast Transient/Burst Immunity	EN 61000-4-4, $\pm 2\text{KV}$ with recommended circuit
	Surge Immunity	EN 61000-4-5, line to line $\pm 2\text{KV}$ with recommended circuit

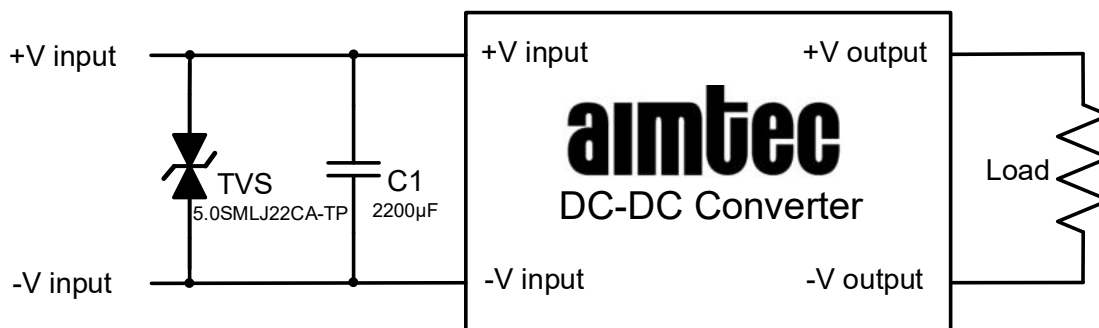
Derating



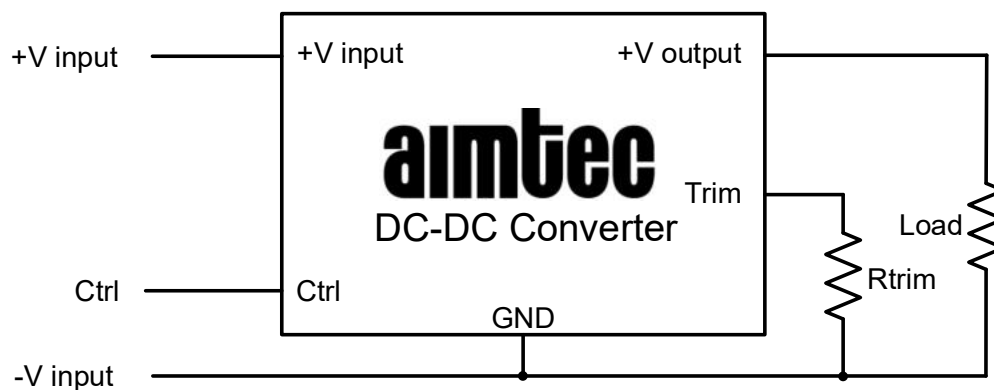
Input vs output voltage



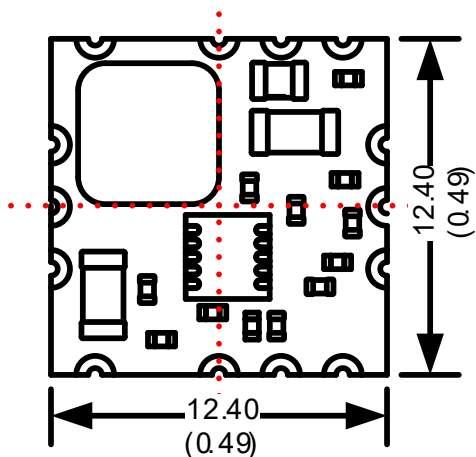
EMC Recommended Circuit



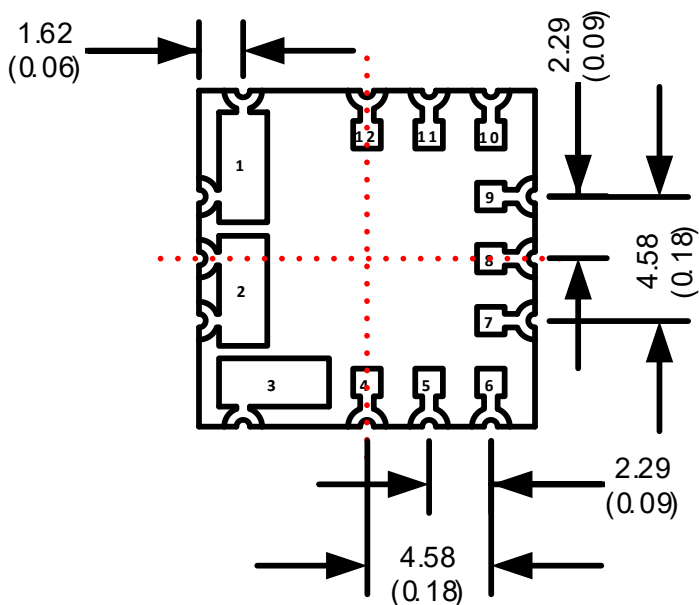
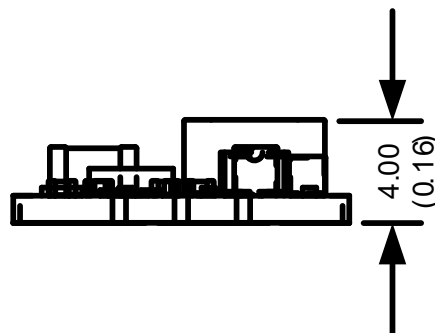
Typical Application Circuit



Dimensions



Pin Out Specifications			
Pin	Single	Pin	Single
1	+V Input	7	NC
2	GND	8	GND
3	+V Output	9	NC
4	NC	10	NC
5	GND	11	NC
6	Trim	12	Ctrl



Note:

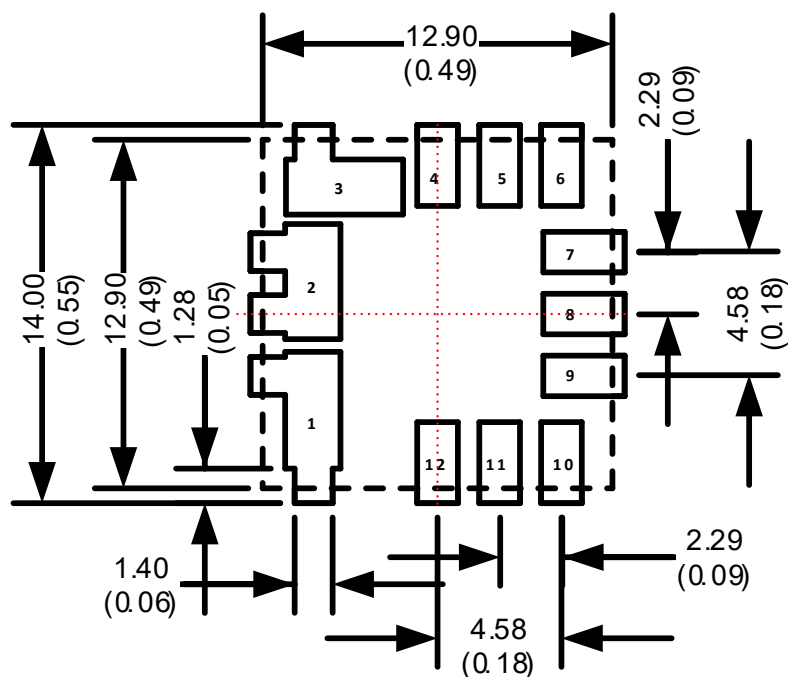
Unit : mm(inch)

General tolerance: ± 0.25 (± 0.01)

Pad 1-3 : 4.06×1.78 (0.16×0.07)

Pad 4-12 : 1.02×1.02 (0.04×0.04)

Footprint



Note:

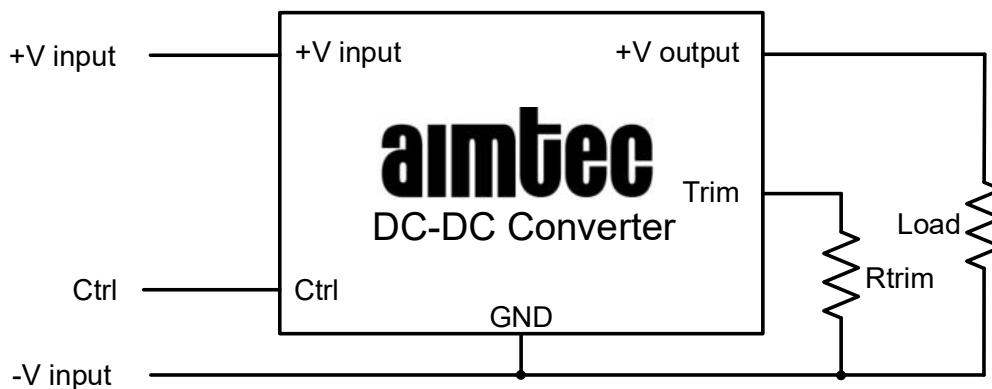
Unit: mm(in ch)

Pa d 1-3 : 4.26*2.04(0.17*0.08)

Pa d 4-12 : 3.00* 1.50(0.12* 0.06)

Trimming

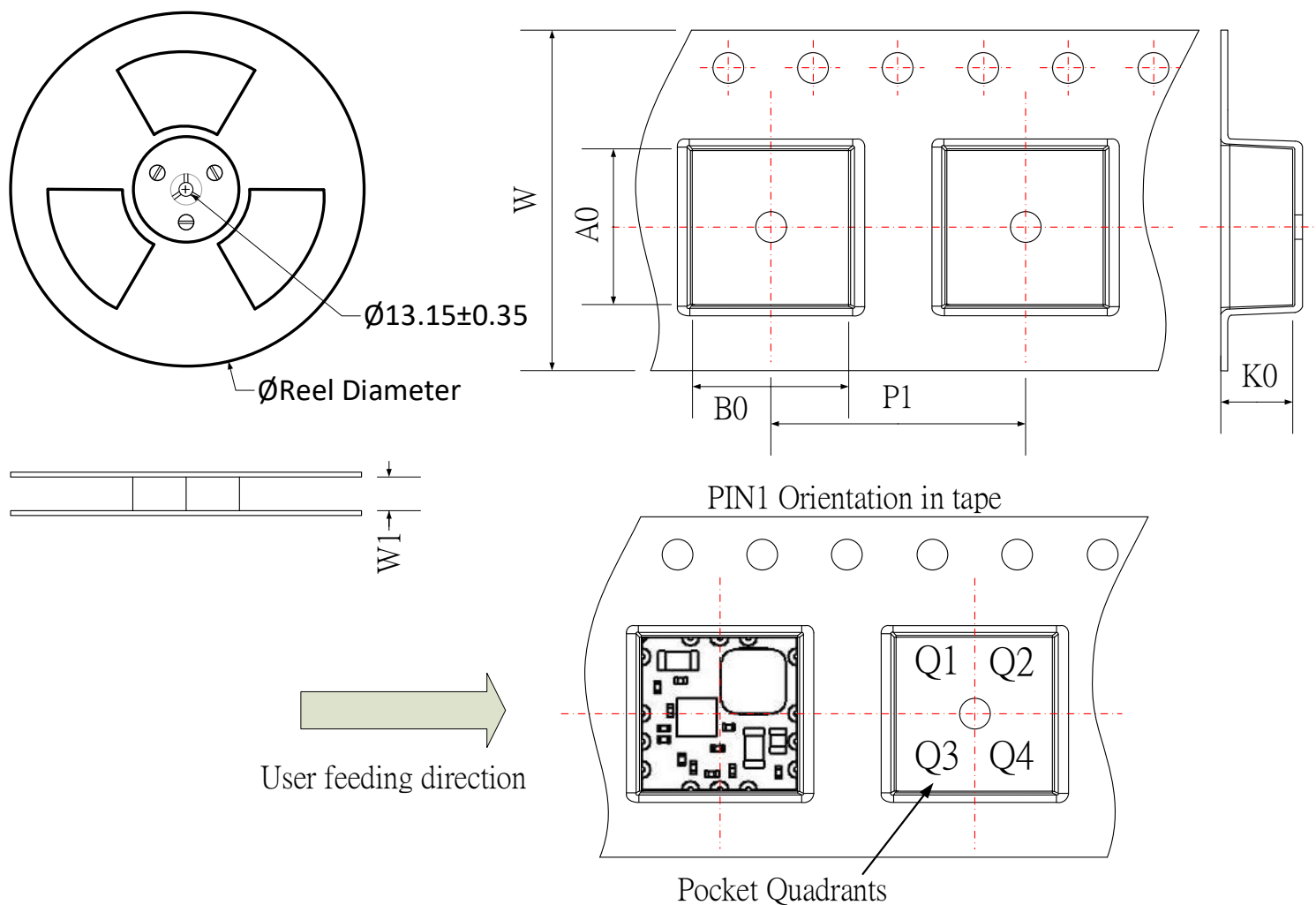
Output voltage can be externally trimmed by utilizing the methods as shown below.



Trim output voltage

Vout (VDC)	0.895	1	1.2	1.5	1.8	2.5	3.3	5	5.5
Rtrim (KΩ)	Open	457.3	150.4	70.5	43.6	19.9	9.7	1.3	Short to GND

Packing Information



Device	Package Type	Pin	MPQ	Reel Diameter (mm)	Reel Width W1 (mm)	A0	B0	K0	P1	W	P1 Quadrant
AMSROL1-TT Single output	SMD	12	650	330.0	26.0	12.8	12.8	4.65	20.0	24.0	Q1

NOTE: 1. Datasheets are updated as needed and as such, specifications are subject to change without notice. Once printed or downloaded, datasheets are no longer controlled by Aimtec; refer to www.aimtec.com for the most current product specifications. 2. Product labels shown, including safety agency certifications on labels, may vary based on the date manufactured. 3. Mechanical drawings and specifications are for reference only. 4. All specifications are measured at an ambient temperature of 25°C, humidity < 75%, nominal input voltage and at rated output load unless otherwise specified. 5. Aimtec may not have conducted destructive testing or chemical analysis on all internal components and chemicals at the time of publishing this document. CAS numbers and other limited information are considered proprietary and may not be available for release. 6. This product is not designed for use in critical life support systems, equipment used in hazardous environments, nuclear control systems or other such applications which necessitate specific safety and regulatory standards other than the ones listed in this datasheet. 7. Warranty is in accordance with Aimtec's standard Terms of Sale available at www.aimtec.com.