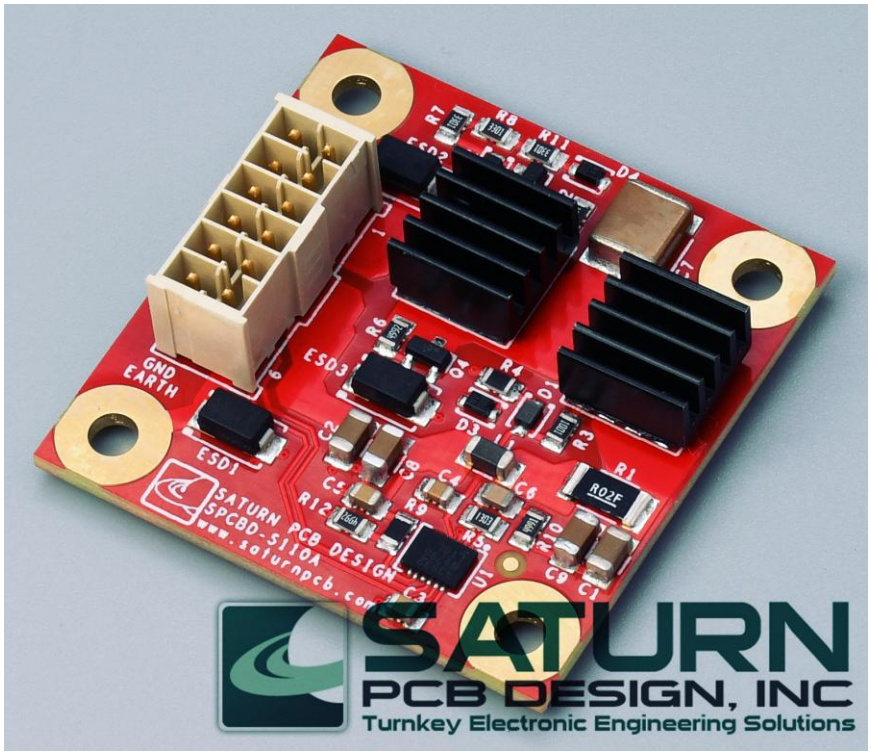
MIL-1275E Surge Suppressor
Part Number: SPCBD-S110A-04

Features

- MIL-1275E Operation (1)
- Vin: 12 to 34VDC
- TVS Diodes on input
- PCB Size: 1.5” x 1.5”
- Interrupted supply (2)
- Current limited at 2.5A (3)
- Operating Temperature: -40°C to 125°C
- Can be customized to meet your project needs.



Product Link:

https://saturnpcb.com/mil-std-1275e-surge-suppressor/

Applications

- 28 Volt military / aerospace applications

1 This device will pass the voltage surge and spike test as well as the reverse polarity test. It is not designed for the ripple test.
2 During an overvoltage event, the device will cut power to the load.
3 The board can be configured for up to 4A output, contact us if you need a higher than 2.5A output.

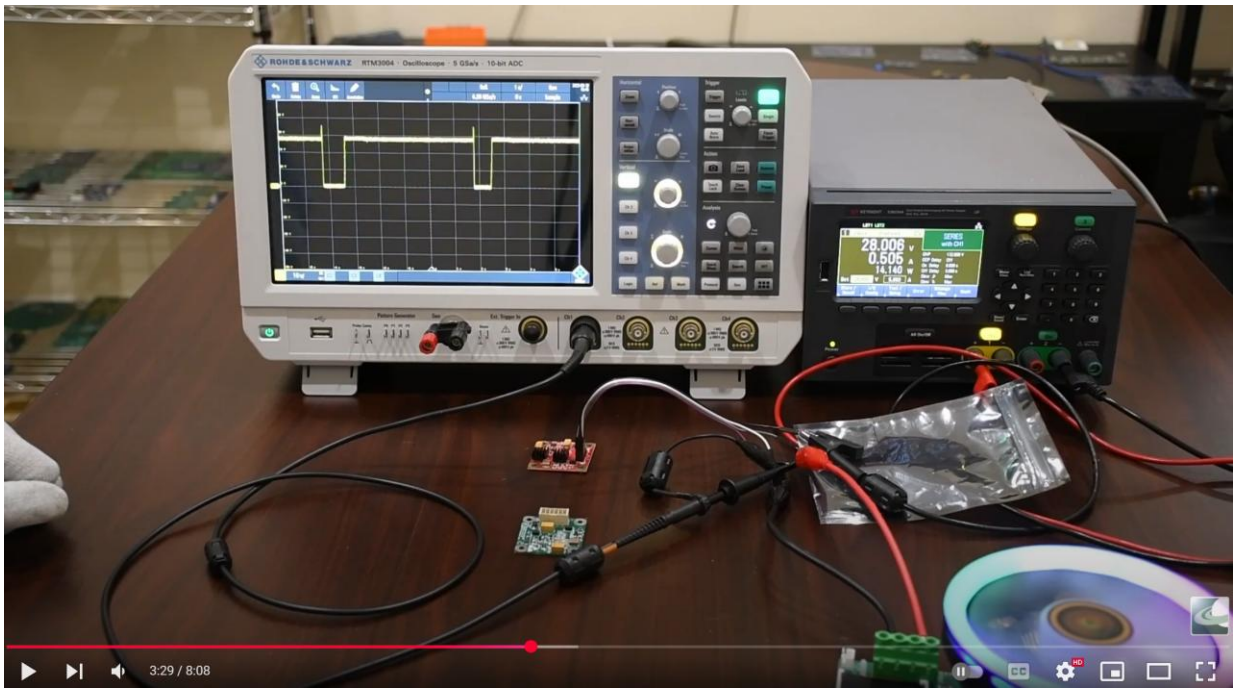
Saturn PCB Design, Inc.
60 Spring Vista Dr, Suite B
DeBary, FL 32713
www.saturnpcb.com || 407-340-2668

Description

The SPCBD-S110A-04 is a low-cost solution for MIL-1275E applications as well as any electronic systems that require a high-performance interrupted surge suppressor. It utilizes an LT4363 IC to maintain optimal performance and reliability and can pass 2.5 amps continuously until tripped.
The PCB is manufactured using high temperature FR-4 for durability in extreme conditions.

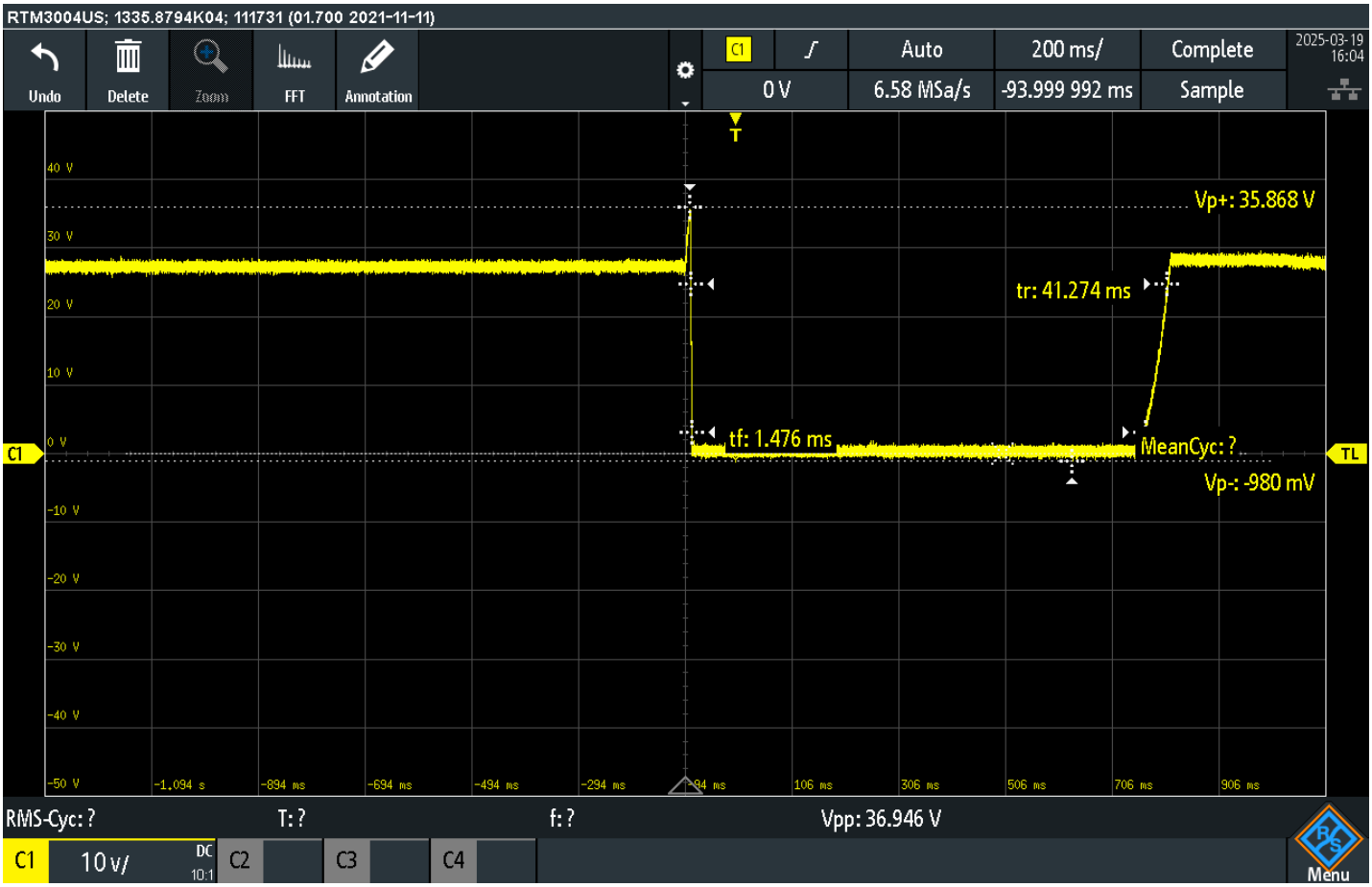
More information on the LT4363 can be found here:
https://www.analog.com/media/en/technical-documentation/data-sheets/4363fb.pdf

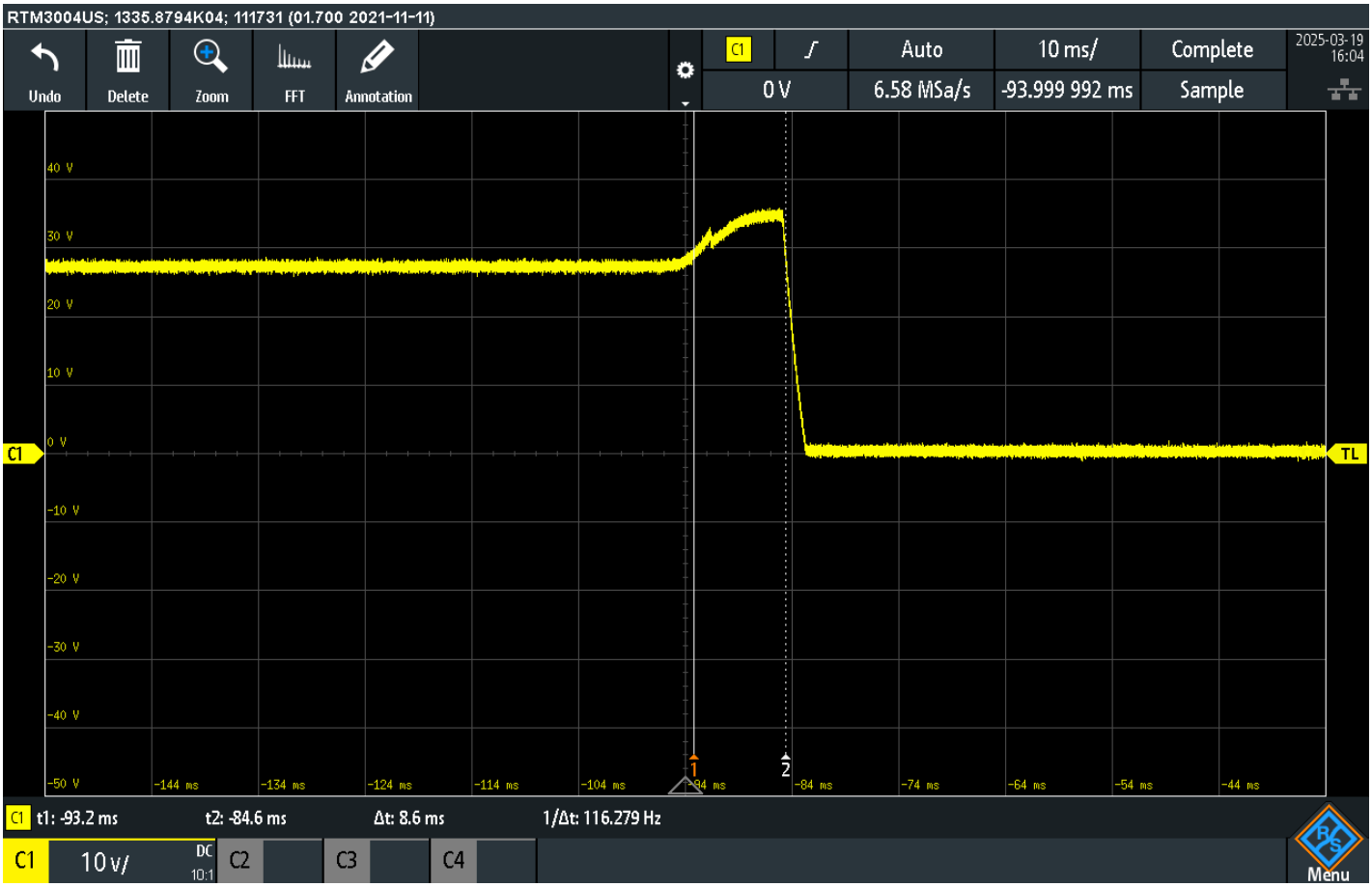
Demonstration Video:
https://www.youtube.com/watch?v=7j8uHDu7eVI



Overvoltage Event:

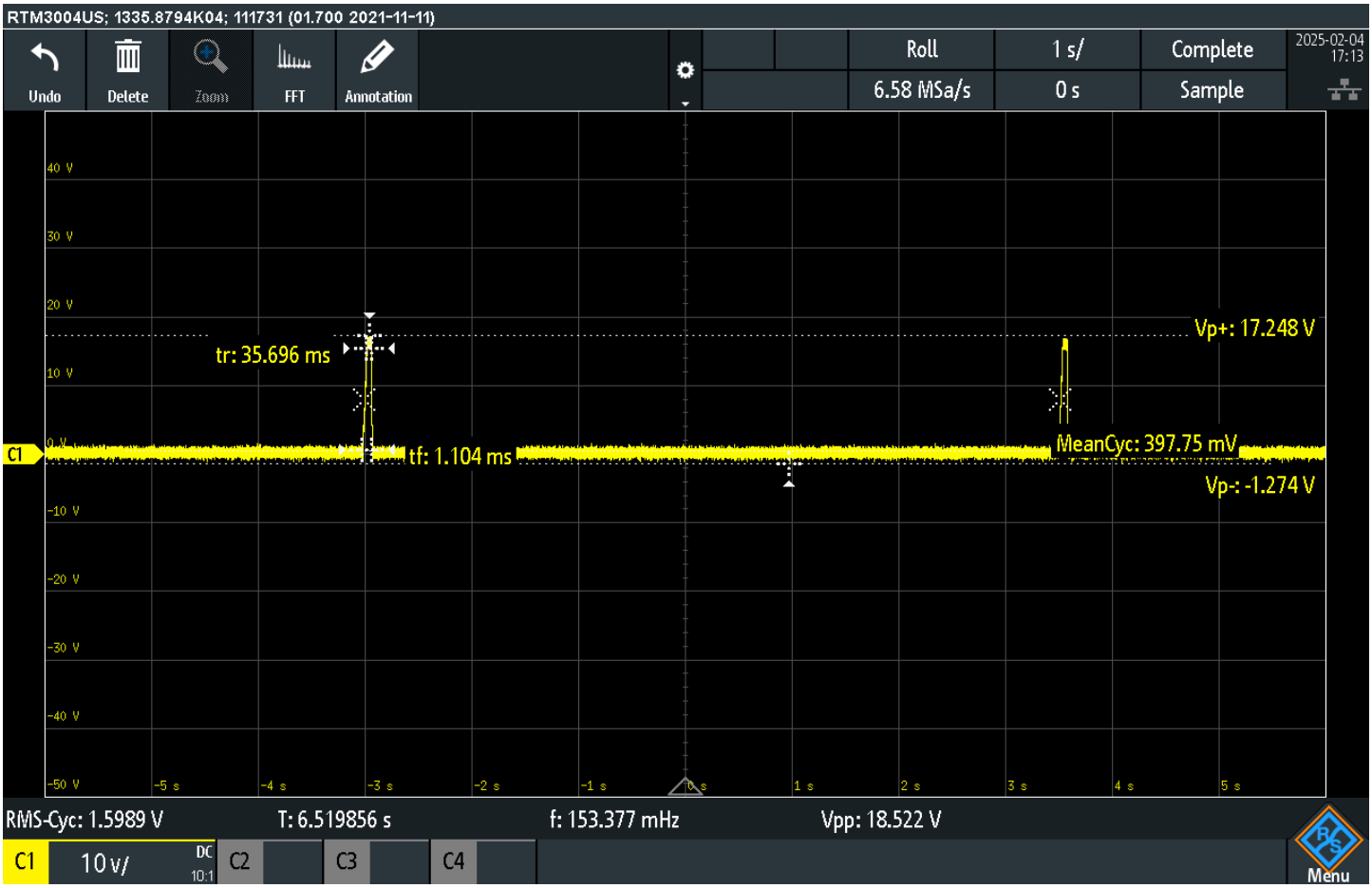
During an overvoltage event, the device will cut power to the load for a short period of time. Below is an example of a 28V input during the 100V surge event. The device limited the output to ~35V for ~8ms then shut down until the supply drops back down to 28V.




RTM3004US; 1335.8794K04; 111731 (01.700 2021-11-11)
Undo
Delete
Zoom
FFT
Annotation
C1
Auto
10 ms/
Complete
2025-03-19
16:04
0 V
6.58 MSa/s
-93.999 992 ms
Sample
40 V
30 V
20 V
10 V
0 V
-10 V
-20 V
-30 V
-40 V
-50 V
C1
TL
-144 ms
-134 ms
-124 ms
-114 ms
-104 ms
-94 ms
-84 ms
-74 ms
-64 ms
-54 ms
-44 ms
C1 t1: -93.2 ms
t2: -84.6 ms
Δt: 8.6 ms
1/Δt: 116.279 Hz
C1
10 V/
DC
10:1
C2
C3
C4
Menu

Overcurrent Event:

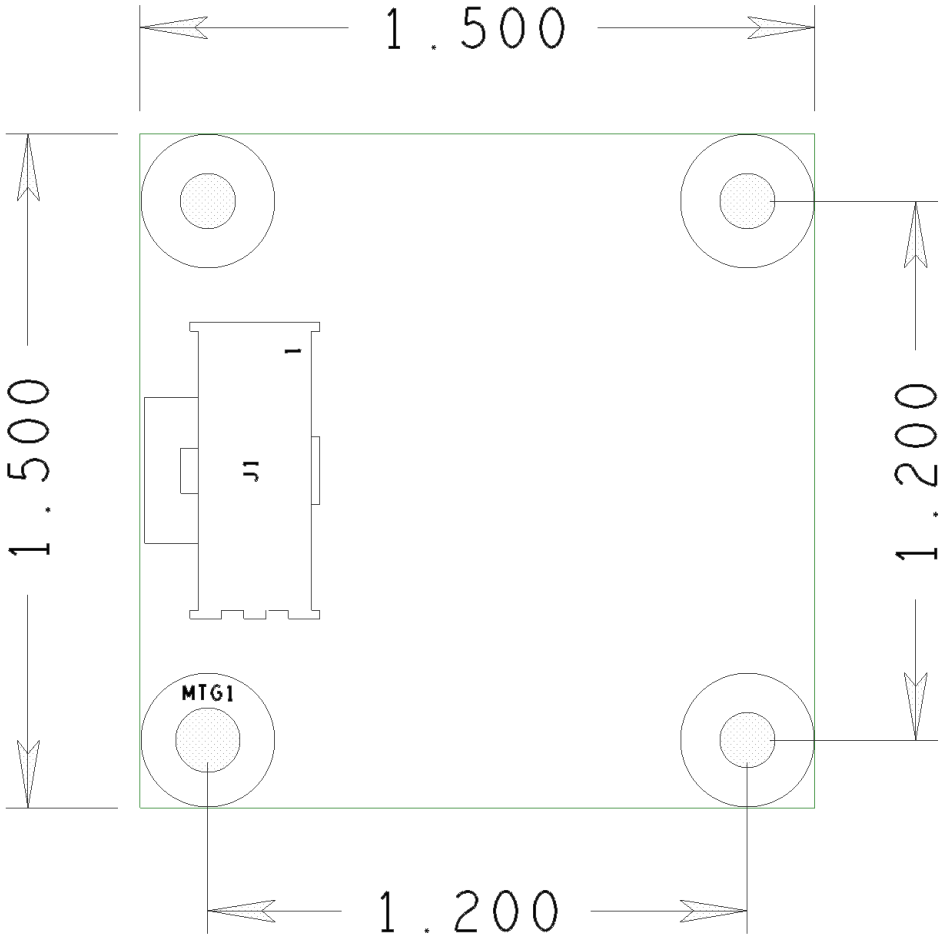
During an overcurrent event, the device shuts power off to the load for protection. Timing during an overcurrent event is similar to the overvoltage event however the on-time is much shorter and full-power is not reached. The device is only sensing the load for normal operation to resume.



The device also has two open-collector output status signals.
FLT, which is low-true, and ENOUT. Both signals are routed to the J1 connector.

FLT:
During either and overvoltage event or an overcurrent event, the FLT pin pulls low to indicate that the pass FET is about to turn off.

ENOUT:
The ENOUT pin goes high impedance during normal operation to indicate that the pass FET is fully on.

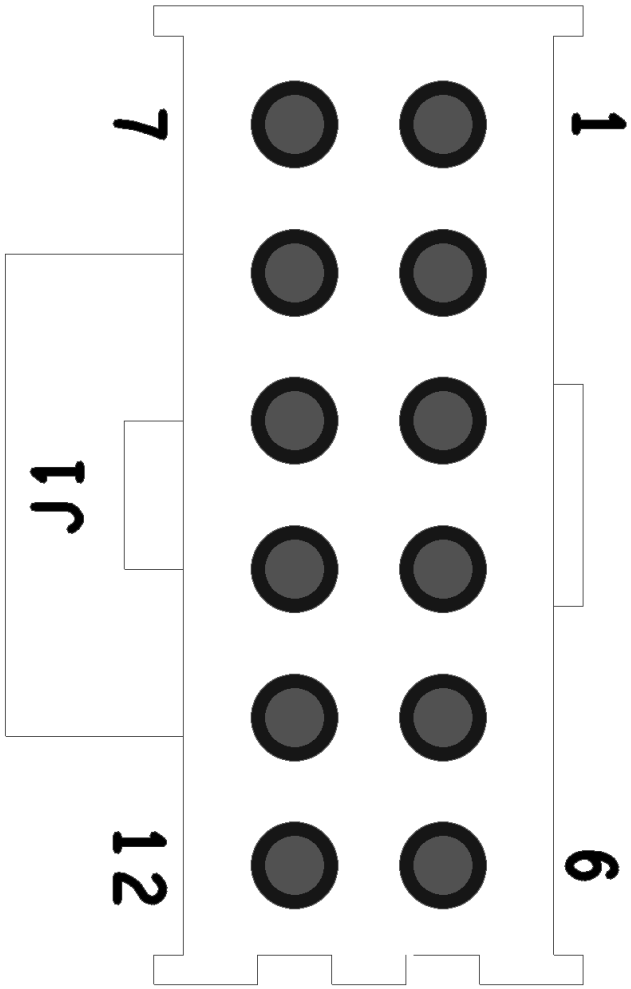


Dimensions

L•W•H: 1.5”•1.5”•0.062”

J1 Pinnout
Samtec IPL1-106-01-L-D-K Connector

1-2: Power In
3-4: +28V Out
5: Fault Out (Low True)
6-12: Chassis GND
7-10: GND In/Out
11: Enable Out



Note:
A 0.1” pitch pin header can be used in place of the Samtec connector.