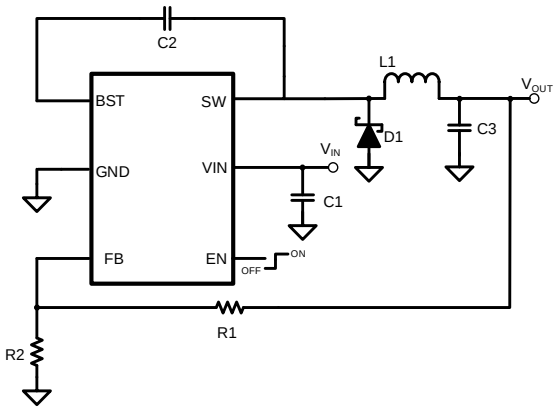
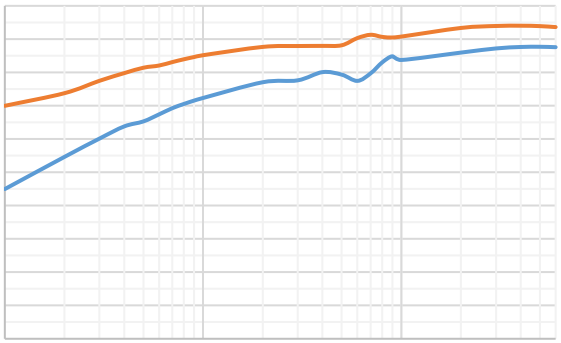
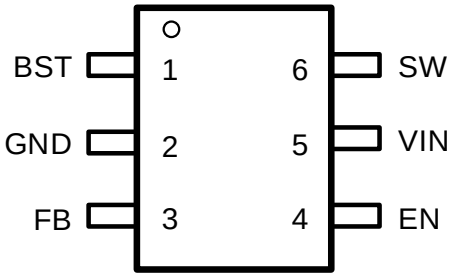
4.5V-60V Vin, 0.6A, High Efficiency Step-down DCDC Converter





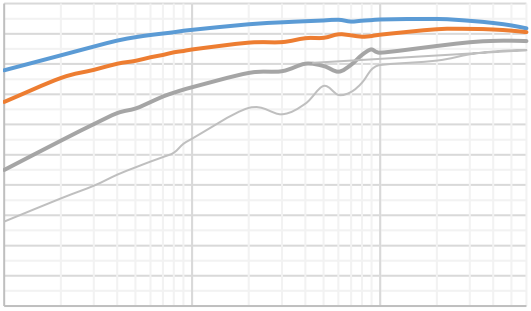
4.5V-60V, Asyncronous Buck Converter



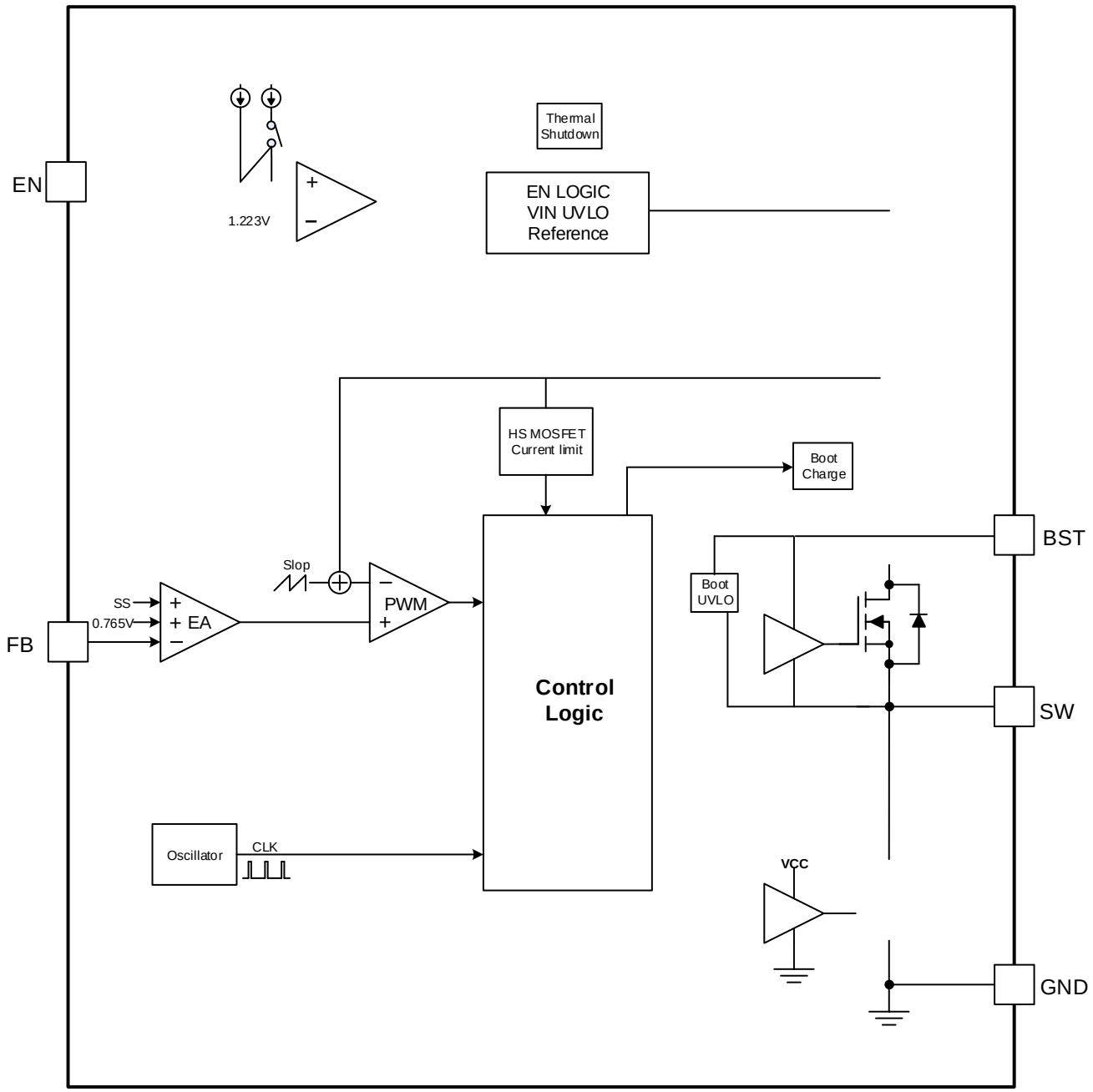
(1)

(2)

(1)
(2)

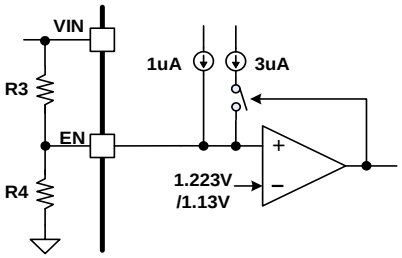


! HL •N1V€


EN
1.223V
Thermal Shutdown
EN LOGIC
VIN UVLO
Reference
HS MOSFET
Current limit
Boot Charge
BST
Slop
SS
0.765V
EA
PWM
FB
Boot UVLO
Control Logic
SW
Oscillator
CLK
VCC
GND

2 9 713
2 965

3 9 92
9 92 3



9

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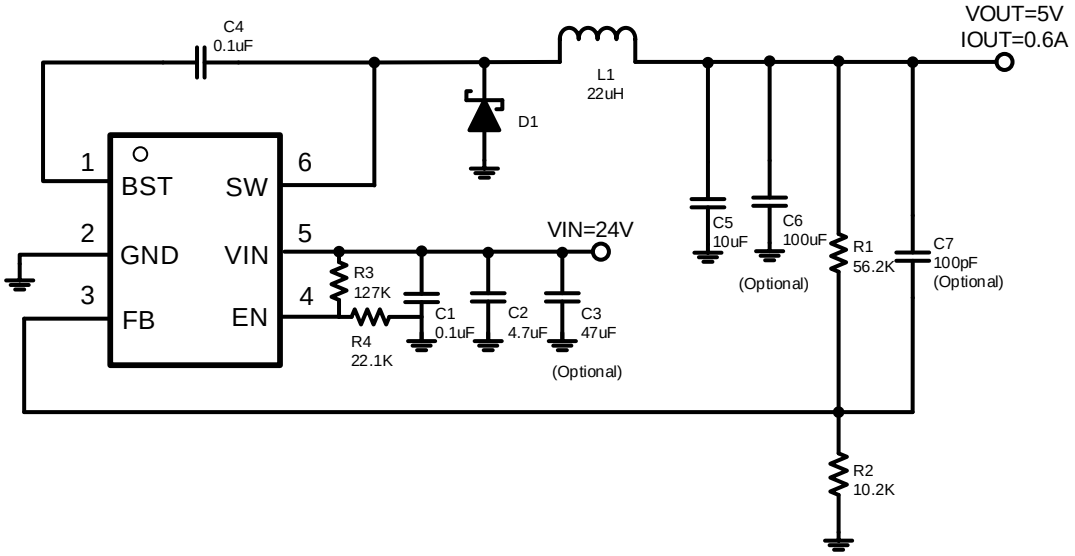

C4
0.1uF
L1
22uH
VOUT=5V
IOUT=0.6A
D1
1
BST
SW
6
2
GND
VIN
5
VIN=24V
3
FB
EN
4
R3
127K
R4
22.1K
C1
0.1uF
C2
4.7uF
C3
47uF
(Optional)
C5
10uF
C6
100uF
(Optional)
R1
56.2K
C7
100pF
(Optional)
R2
10.2K

(( )M l f fd d fe l gl Mf ffd d g l		

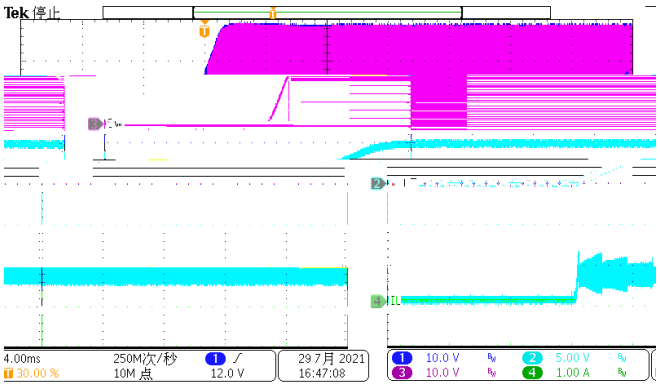
9

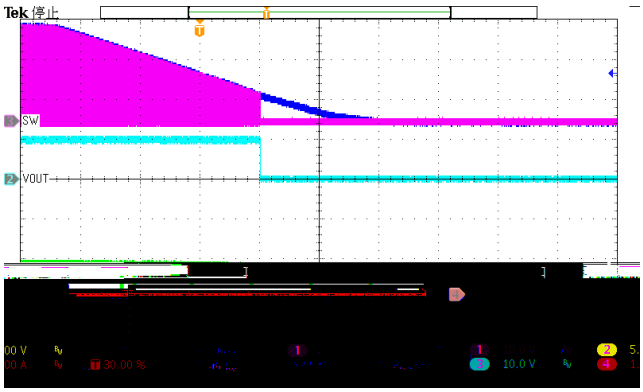
2 $\frac{9\ 713}{2\ 965}$ 5

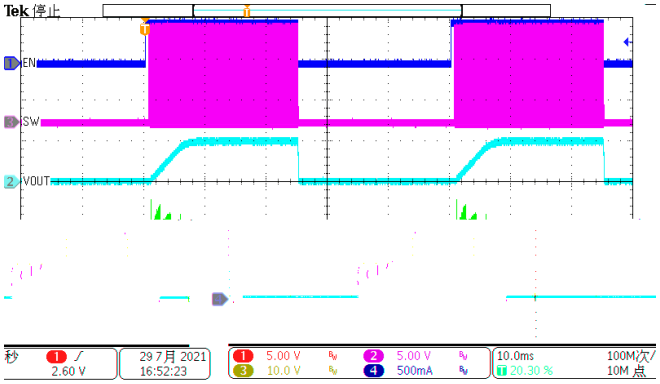
3 $\frac{9\ 92}{9\ 92 \quad 3}$ 6

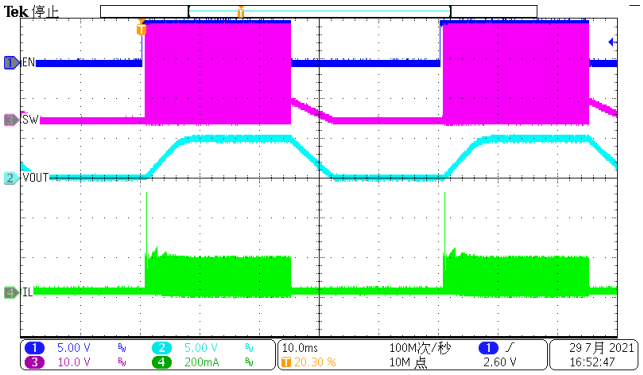
7

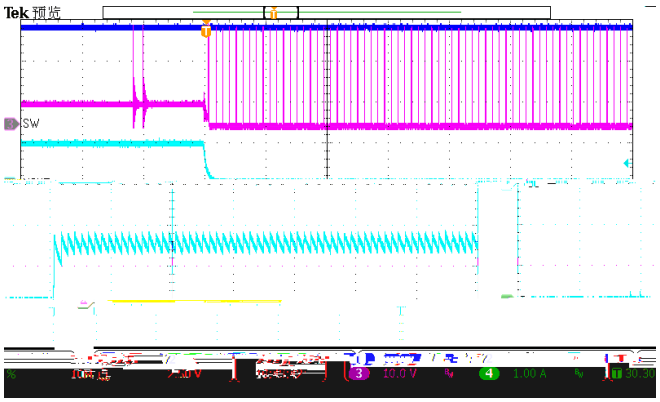
U				
U				
U				
U				

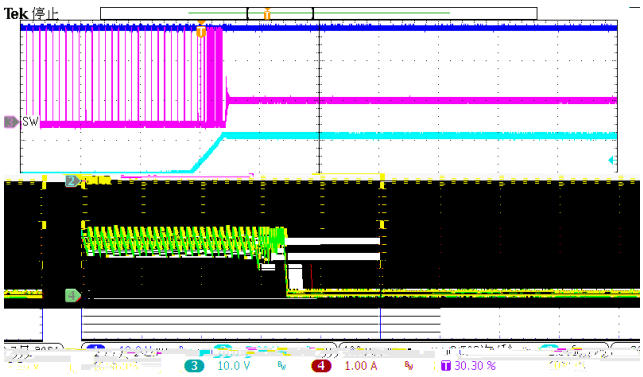

Tek 停止
IL
4.00ms
30.00 %
250M次/秒
10M 点
12.0 V
29 7月 2021
16:47:08
10.0 V
5.00 V
10.0 V
1.00 A

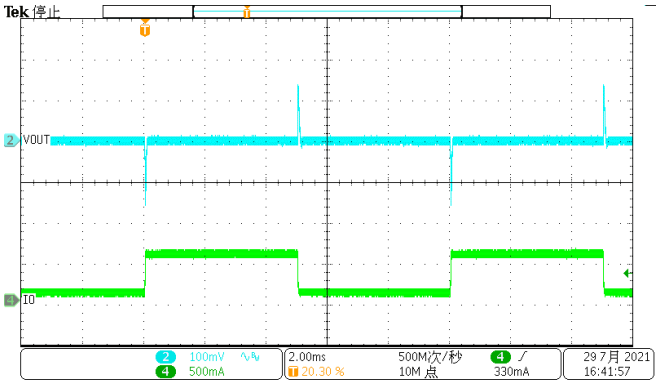

Tek 停止
SW
VOUT
30.00 %
10.0 V

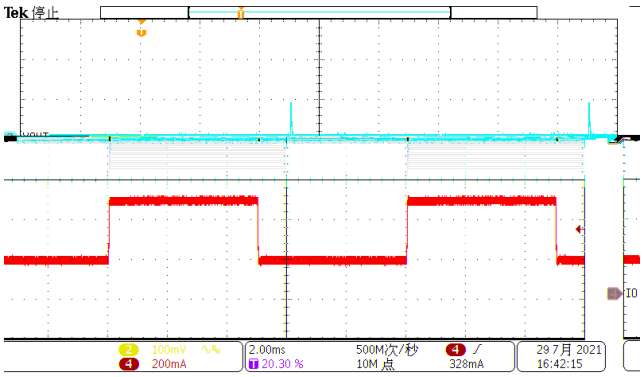

Tek 停止
EN
SW
VOUT
2.60 V
29 7月 2021
16:52:23
5.00 V
5.00 V
10.0 V
500mA
10.0ms
20.30 %
100M次/
10M 点

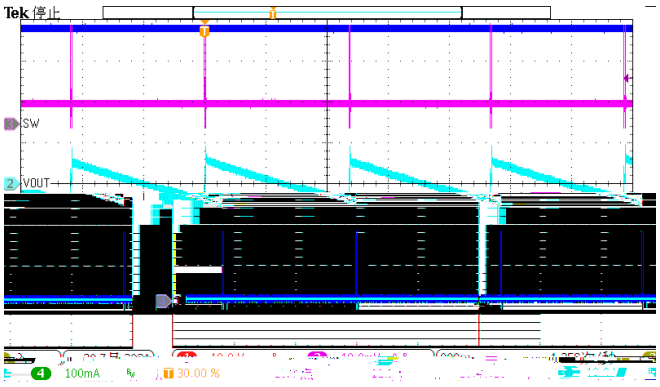

Tek 停止
EN
SW
VOUT
IL
5.00 V
5.00 V
10.0 V
200mA
10.0ms
20.30 %
100M次/秒
10M 点
2.60 V
29 7月 2021
16:52:47

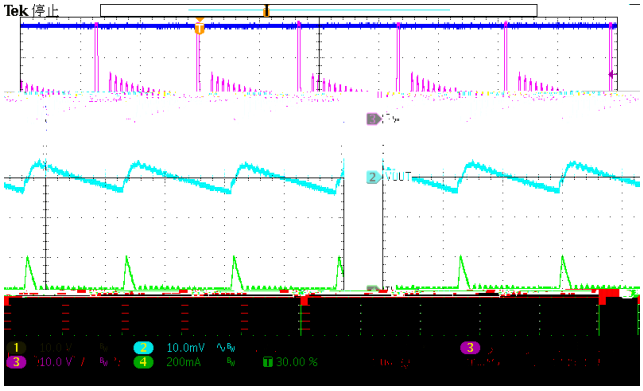

Tek 预览
SW

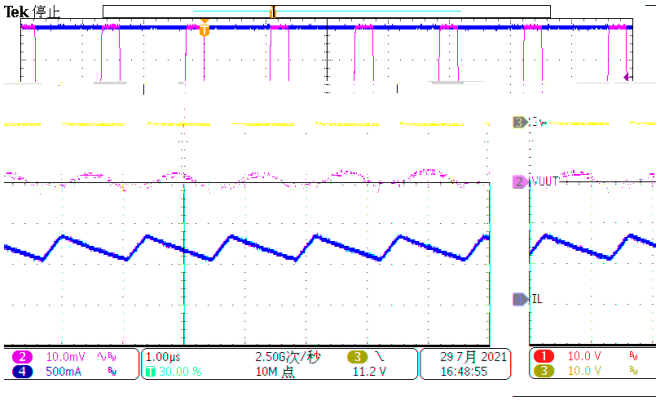

Tek 停止
SW
10.0 V
1.00 A
30.30 %

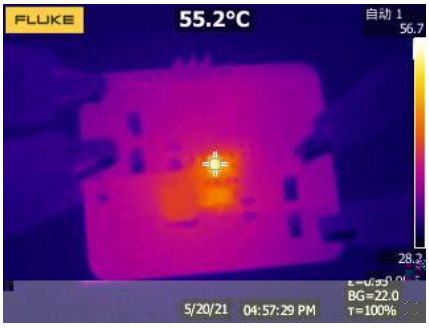

Tek 停止
VOUT
IO
100mV
500mA
2.00ms
20.30 %
500M次/秒
10M 点
330mA
29 7月 2021
16:41:57


Tek 停止
IO
100mV
200mA
2.00ms
20.30 %
500M次/秒
10M 点
328mA
29 7月 2021
16:42:15

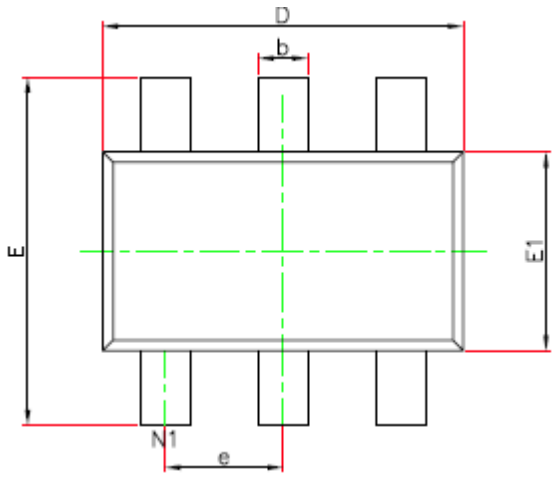

Tek 停止
SW
VOUT
100mA
30.00 %

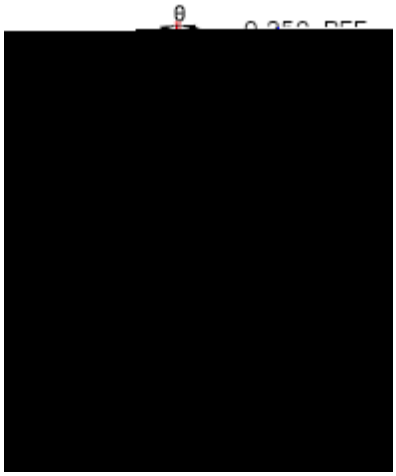

Tek 停止
VOUT
10.0mV
200mA
30.00 %

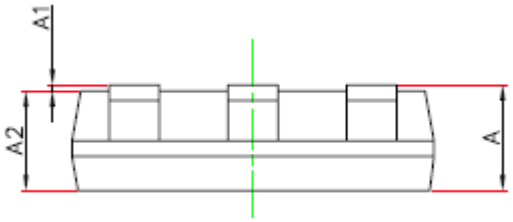

Tek 停止
VOUT
IL
10.0mV
500mA
1.00µs
30.00 %
2.50G次/秒
10M 点
11.2 V
29 7月 2021
16:48:55
10.0 V
10.0 V


FLUKE
55.2°C
自动 1
56.7
28.2
BG=22.0
T=100%
5/20/21
04:57:29 PM

$$\frac{914}{} \tag{14}$$



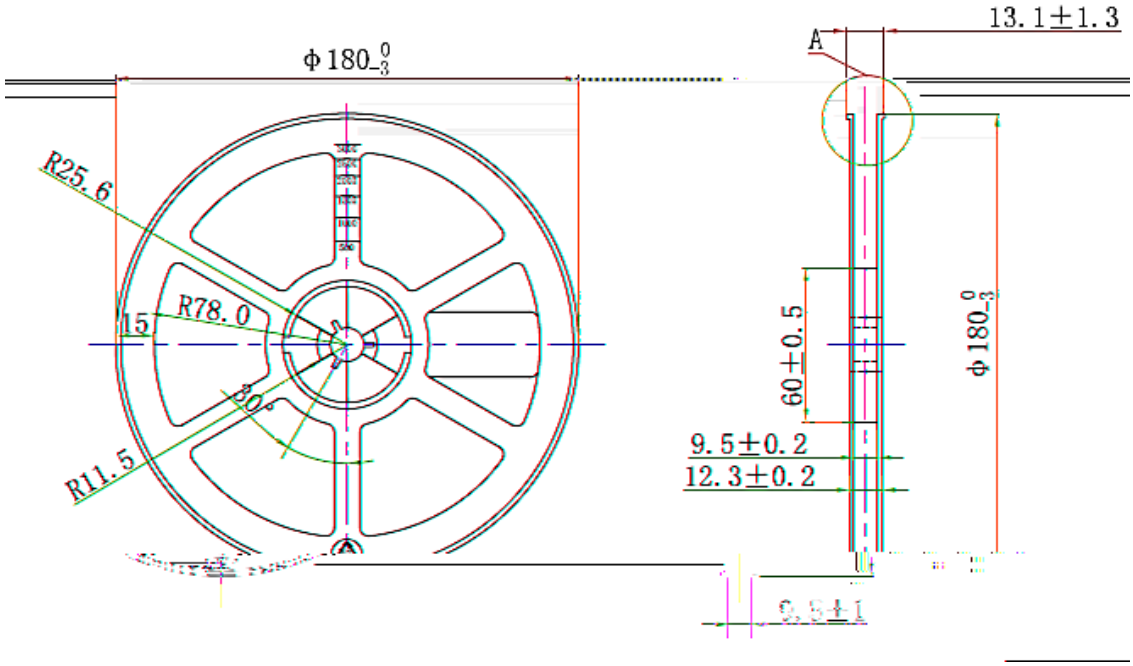
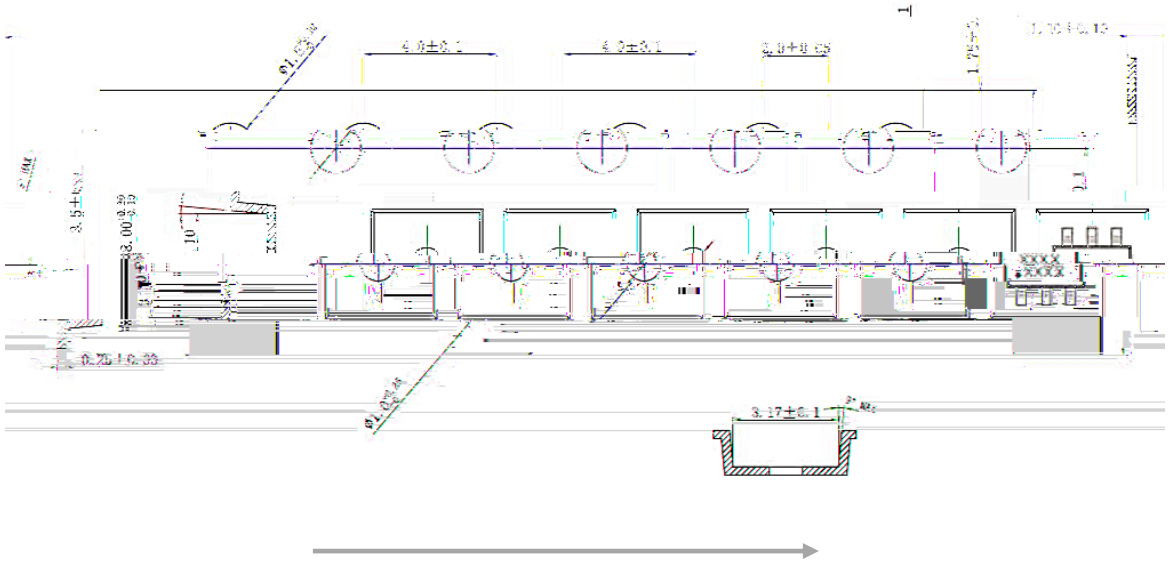




1.

2.
3.
4.
5.

6.


13.1±1.3
A
Φ180
R25.6
R78.0
15
30°
R11.5
60±0.5
Φ180
9.5±0.2
12.3±0.2
0.5±1