

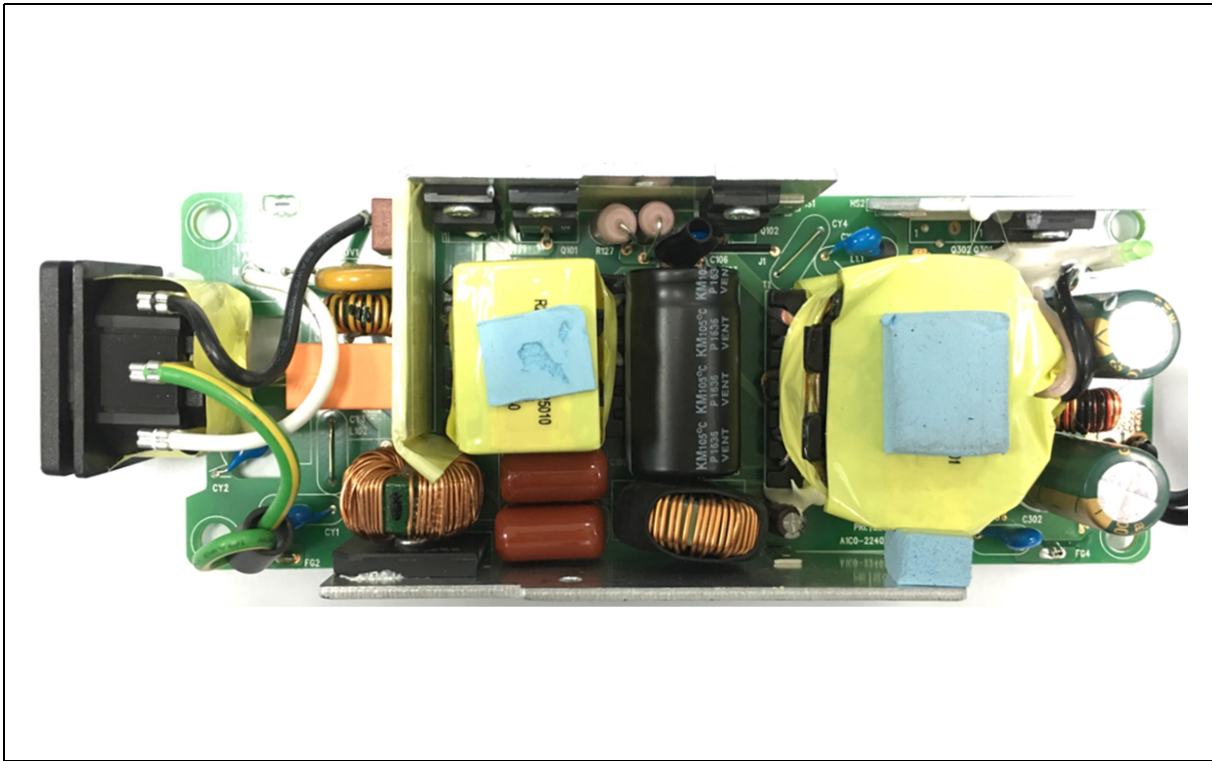
Demo Board Test Report for  
LD7791GS

120 W Adapter  
( 24 V / 5 A )

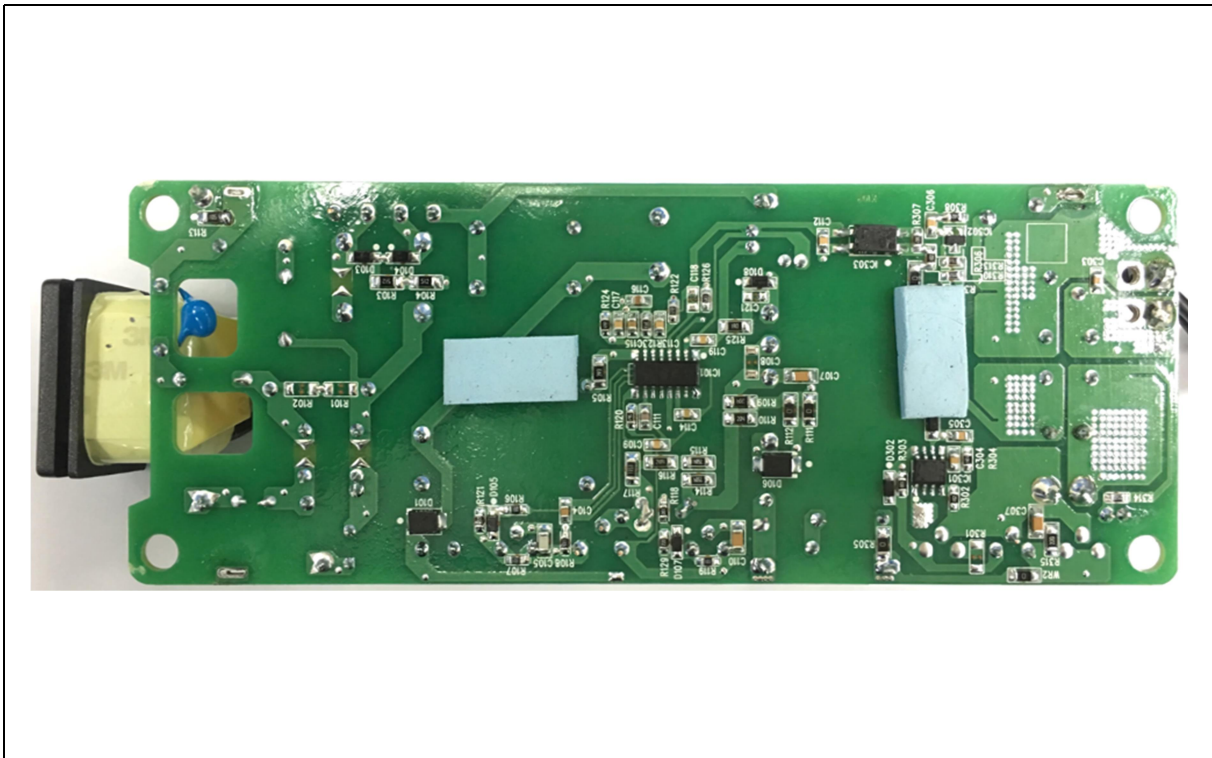
| Tested by | Reviewed by | Approved by  |
|-----------|-------------|--------------|
| Roy Lin   | Chris Pai   | Albert Huang |

| Total Pages | Revision | Date           |
|-------------|----------|----------------|
| 24          | 01       | 2017 / 11 / 03 |

Top View



Bottom View



Size: 171 mm ( L ) x 72 mm ( W ) x 42.5 mm ( H ) – with Case

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## I. Design Check List

| No.<br>( 項目 ) | Test Item<br>( 測試項目 )          | Spec.<br>( 規格 )  | Page<br>( 頁 ) |
|---------------|--------------------------------|------------------|---------------|
| 3             | Green Mode Power Consumption   | < 150 mW         | 6             |
| 4             | Efficiency Test                | CoC V5 Tier 2    | 7             |
| 5             | Power Factor                   | > 0.9            | 9             |
| 6             | Load / Line / Cross Regulation | < $\pm 5\%$      | 10            |
| 7             | Over Current Protection        | < 8 A            | 11            |
| 8             | Output Ripple and Noise        | < 240 mV         | 12            |
| 9             | Output Dynamic Response        | < $\pm 10\%$     | 14            |
| 10            | Voltage Stress on MOSFET       | < 90 % or < 95 % | 17            |
|               |                                |                  |               |
|               |                                |                  |               |
|               |                                |                  |               |
|               |                                |                  |               |
|               |                                |                  |               |
|               |                                |                  |               |
|               |                                |                  |               |

## II. Executive Summary

| Test Equipment      |                     |
|---------------------|---------------------|
| Equipment           | Equipment Model No. |
| Electrical Load     | Chroma 63030        |
| Digital Power Meter | Chroma 66202        |
| AC Power Source     | Chroma 61505        |
| Scope               | Tektronix TDS3014B  |
| Current Amplifier   | Tektronix TCPA300   |

All test conditions are based on ambient temperature 25°C

### 1. Input Voltage & Frequency

The unit shall be capable of operating as a universal AC input power supply accepting AC inputs. The power supply shall operate between the following voltages ( from 90 V to 264 V ). The supply will be designed to operate for Table 1.

|                       | Minimum | Normal    |           | Maximum |
|-----------------------|---------|-----------|-----------|---------|
| Input Voltage ( Vac ) | 90      | 100 / 240 | 115 / 230 | 264     |
| Frequency ( Hz )      | 47      | 50        | 60 / 50   | 63      |

Table 1

### 2. Output Load

The line and load regulation for each of the outputs are shown in Table 2.

| Parameter | Output Voltage<br>( V ) |         |         | Output Current<br>( A ) |         |
|-----------|-------------------------|---------|---------|-------------------------|---------|
|           | Minimum                 | Typical | Maximum | Minimum                 | Maximum |
| 24 V      | 22.8                    | 24.0    | 25.2    | 0                       | 5       |

Table 2

### 3. Green Mode Power Consumption

The marking shall be put for update CoC V5 Tier 2 requirement on the label below is mandatory ( When input is above or equal to 12 W ,adapter efficiency shall follow test condition after heat-up 15 minutes. ) ( For reference )

**Test Condition:**

Input: 115 Vac / 60 Hz & 230 Vac / 50 Hz

Burn-In: 30 minutes

| Vin<br>( V / Hz ) | Pin<br>( mW ) | Spec.<br>( mW ) |
|-------------------|---------------|-----------------|
| 115 / 60          | 107           | < 150           |
| 230 / 50          | 123           |                 |

Table 3

#### 4. Efficiency Test

According to Energy Star, we chose input voltage value including 115 Vac / 230 Vac and 10 %, 25 %, 50 %, 75 %, 100 % load current. Then calculate the efficiency and average efficiency.

##### Test Condition:

Input: 115 Vac / 60 Hz, 230 Vac / 50 Hz

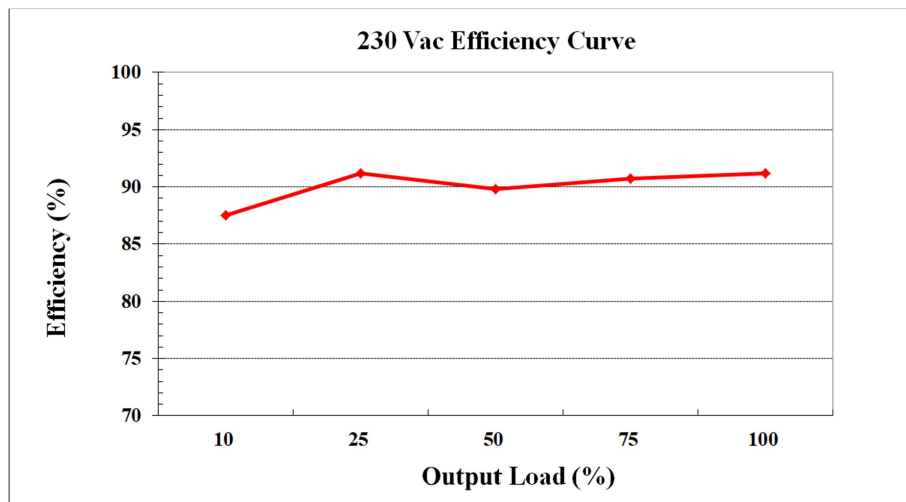
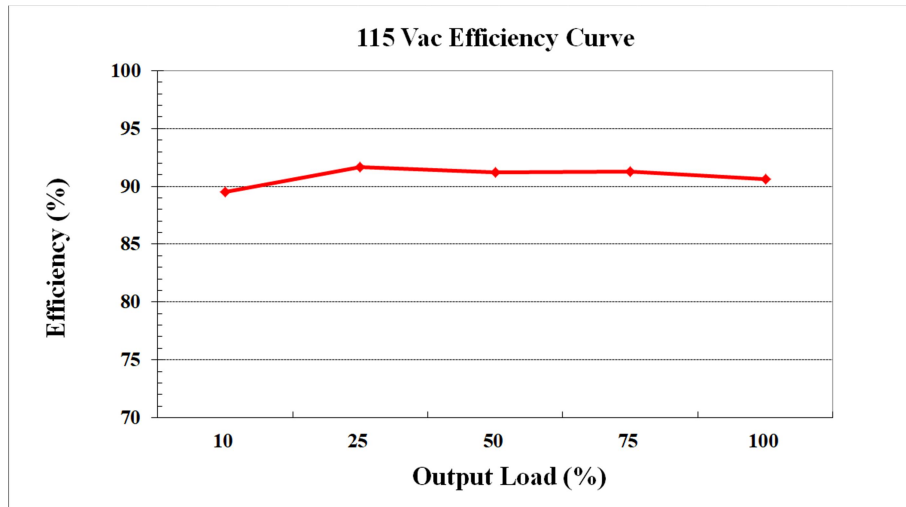
Output: 10 %, 25 %, 50 %, 75 %, 100 % of maximum Load

Measured point of output voltage: Cable End ( 16 AWG / 1.2 m )

Burn-In: 30 minutes

| Vin<br>( V / Hz ) | Load<br>( % ) | Vout<br>( V ) | Iout<br>( A ) | Pout<br>( W ) | Pin<br>( W ) | Eff.<br>( % ) | Avg. Eff.<br>( % ) | Spec.<br>( % ) |
|-------------------|---------------|---------------|---------------|---------------|--------------|---------------|--------------------|----------------|
| 115 / 60          | 100           | 23.108        | 4.999         | 115.517       | 127.500      | 90.601        | 91.200             | > 89           |
|                   | 75            | 23.202        | 3.752         | 87.054        | 95.363       | 91.287        |                    |                |
|                   | 50            | 23.290        | 2.492         | 58.039        | 63.619       | 91.229        |                    |                |
|                   | 25            | 23.375        | 1.245         | 29.102        | 31.742       | 91.683        |                    |                |
|                   | 10            | 23.422        | 0.499         | 11.688        | 13.053       | 89.539        | —                  | > 79           |
| 230 / 50          | 100           | 23.118        | 4.999         | 115.567       | 126.700      | 91.213        | 90.746             | > 89           |
|                   | 75            | 23.208        | 3.752         | 87.076        | 95.942       | 90.759        |                    |                |
|                   | 50            | 23.298        | 2.492         | 58.059        | 64.657       | 89.795        |                    |                |
|                   | 25            | 23.380        | 1.245         | 29.108        | 31.911       | 91.217        |                    |                |
|                   | 10            | 23.428        | 0.499         | 11.691        | 13.361       | 87.498        | —                  | > 79           |

Table 4





## 5. Power Factor

**Test Condition:**

Input: 90 Vac / 47 Hz, 100 Vac / 50 Hz, 240 Vac / 50 Hz, 264 Vac / 63 Hz

Output: 24 V / 5 A

| Vin<br>( V / Hz ) | P.F.   | Spec. |
|-------------------|--------|-------|
| 90 / 47           | 0.9958 | > 0.9 |
| 100 / 50          | 0.9949 |       |
| 240 / 50          | 0.9462 |       |
| 264 / 63          | 0.9072 |       |

Table 5

## 6. Load / Line / Cross Regulation

| Vout<br>( V ) | Regulation Tolerance<br>( From Nominal ) | Maximum Current<br>( A ) |
|---------------|------------------------------------------|--------------------------|
| 24            | + 5 % / - 5 %                            | 5                        |

Table 6

### Test Condition:

Input: 90 Vac / 47 Hz, 100 Vac / 50 Hz, 240 Vac / 50 Hz, 264 Vac / 63 Hz

Output: 24 V / 0 & 5 A

Measured point of output voltage: Cable End ( 16 AWG / 1.2 m )

| Vout<br>( V ) | Vin<br>( V / Hz ) | Measured Voltage ( V ) |           | Spec.<br>( V ) |
|---------------|-------------------|------------------------|-----------|----------------|
|               |                   | No Load                | Full Load |                |
| 24            | 90 / 47           | 23.462                 | 23.105    | 22.8 ~ 25.2    |
|               | 100 / 50          | 23.462                 | 23.105    |                |
|               | 240 / 50          | 23.478                 | 23.108    |                |
|               | 264 / 63          | 23.472                 | 23.110    |                |

Table 7

## 7. Over Current Protection

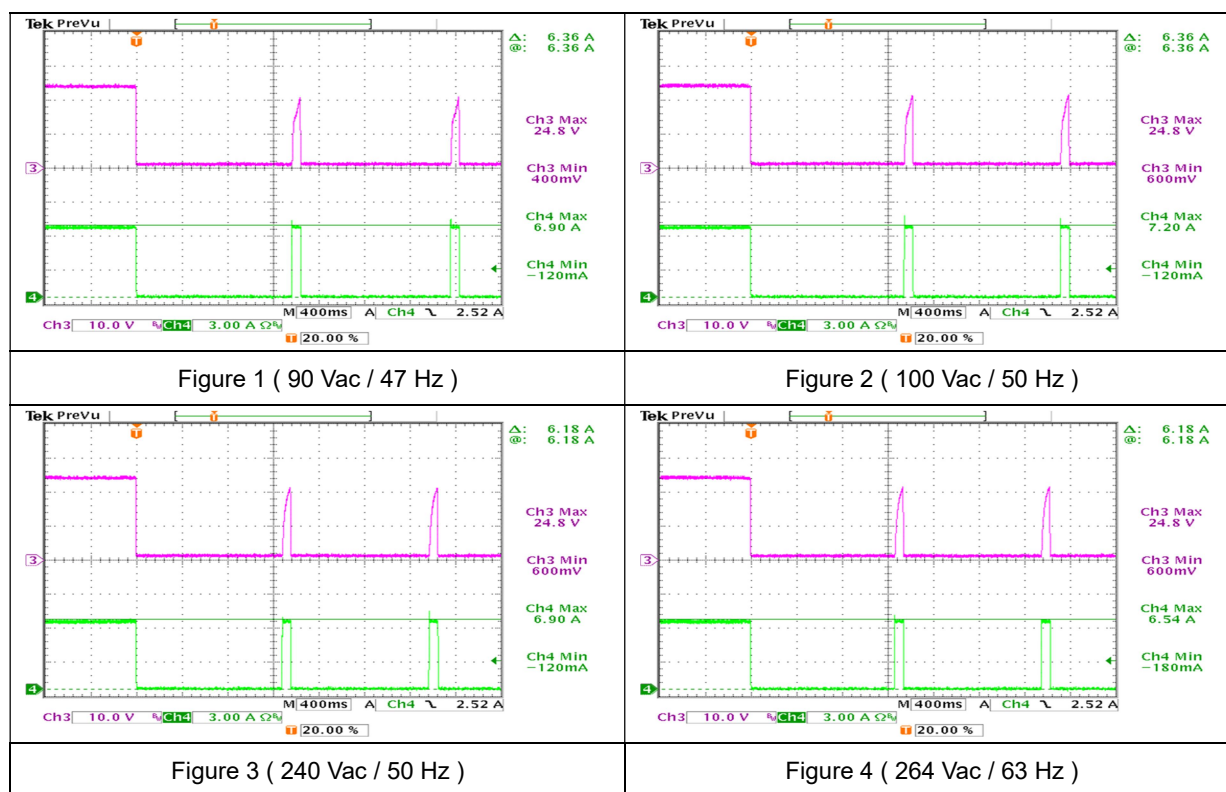
The supply shall be designed with appropriate output over current protection. This protection shall be activated in the event of a short or long-term condition during which one or more of the output current load increases such that the primary current exceeds a predetermined limit. The primary shall limit the total power without inflicting any damage to any internal supply components and shall be reversible pending removal of the cause of the condition and without any user intervention.

### Test Condition:

Input: 90 Vac / 47 Hz, 100 Vac / 50 Hz, 240 Vac / 50 Hz, 264 Vac / 63 Hz

| Vout<br>( V ) | Vin<br>( V / Hz ) | O.C.P Trigger Point<br>( A ) | Spec.<br>( A ) |
|---------------|-------------------|------------------------------|----------------|
| 24            | 90 / 47           | 6.36                         | < 8            |
|               | 100 / 50          | 6.36                         |                |
|               | 240 / 50          | 6.18                         |                |
|               | 264 / 63          | 6.18                         |                |

Table 8



## 8. Output Ripple and Noise

This refers to the peak-to-peak residual AC that remains on the DC power line after passing through all the filtering processes conducted within the power supply. The peak to peak output ripple and noise shall be considered to comprise of the complex envelope of the low frequency saw tooth voltage ripple and the high frequency switching noise. It shall be measured across output terminals using a single ended measurement with an oscilloscope ( bandwidth limited to 20 MHz ) and a high persistence display. Readings shall be made through the range of minimum to maximum load current and within 240 mV.

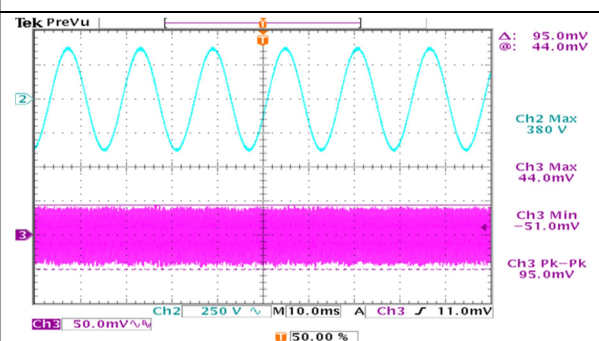
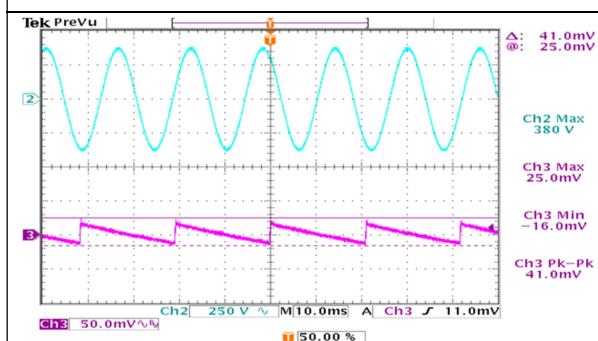
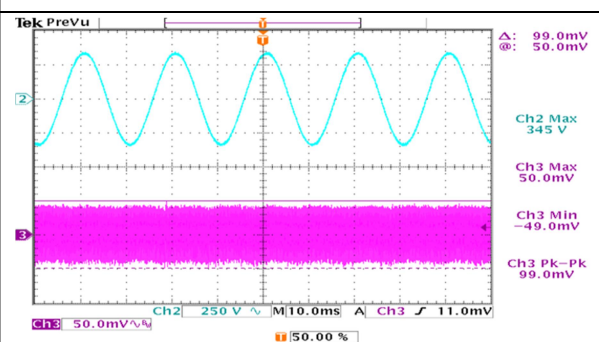
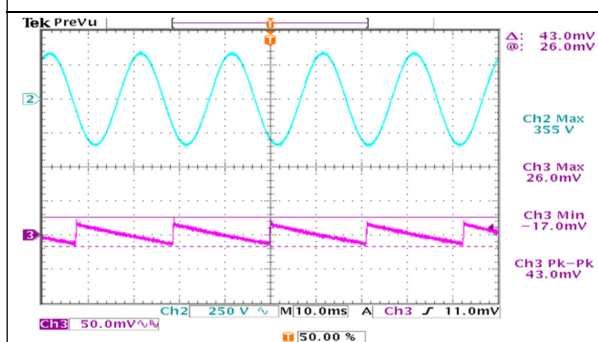
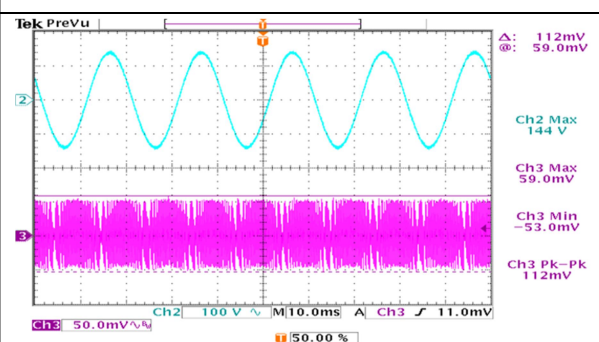
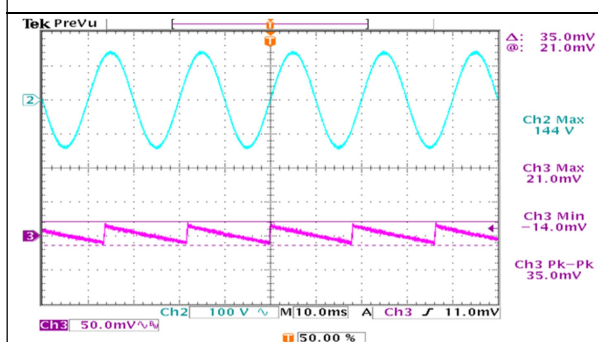
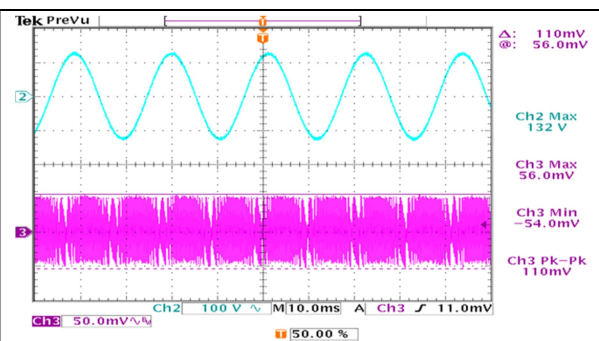
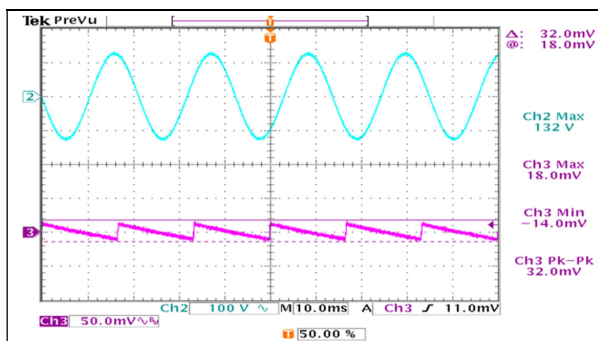
### Test Condition:

Input: 90 Vac / 47 Hz, 100 Vac / 50 Hz, 240 Vac / 50 Hz, 264 Vac / 63 Hz

Output: 24 V / 0 & 5 A

| Vout<br>( V ) | Vin<br>( V / Hz ) | Peak to Peak Voltage ( mV ) |           | Spec.<br>( mV ) |
|---------------|-------------------|-----------------------------|-----------|-----------------|
|               |                   | No Load                     | Full Load |                 |
| 24            | 90 / 47           | 32                          | 110       | < 240           |
|               | 100 / 50          | 35                          | 112       |                 |
|               | 240 / 50          | 43                          | 99        |                 |
|               | 264 / 63          | 41                          | 95        |                 |

Table 9



## 9. Output Dynamic Response

Under resistive load condition, any change in output current at a rate of 0.5A/us, over a range of 50% to 100% full load, shall the cause the output to deviate by more than ( + 10 % / - 10 % ) of its nominal value.

### Test Condition:

Input: 90 Vac / 47 Hz, 100 Vac / 50 Hz, 240 Vac / 50 Hz, 264 Vac / 63 Hz

Output: 24 V / 2.5 ~ 5 A

Measured point of output voltage: Cable End ( 16 AWG / 1.2 m )

| Dwell Time<br>( mS ) | Vin<br>( V / Hz ) | Measured Voltage ( V ) |       | Spec.<br>( V ) |
|----------------------|-------------------|------------------------|-------|----------------|
|                      |                   | Max.                   | Min.  |                |
| 5                    | 90 / 47           | 23.40                  | 22.80 | 21.6 ~ 26.4    |
|                      | 100 / 50          | 23.40                  | 22.80 |                |
|                      | 240 / 50          | 23.50                  | 22.90 |                |
|                      | 264 / 63          | 23.50                  | 22.90 |                |
| 0.5                  | 90 / 47           | 23.50                  | 22.80 |                |
|                      | 100 / 50          | 23.50                  | 22.80 |                |
|                      | 240 / 50          | 23.50                  | 22.80 |                |
|                      | 264 / 63          | 23.50                  | 22.80 |                |

Table 10

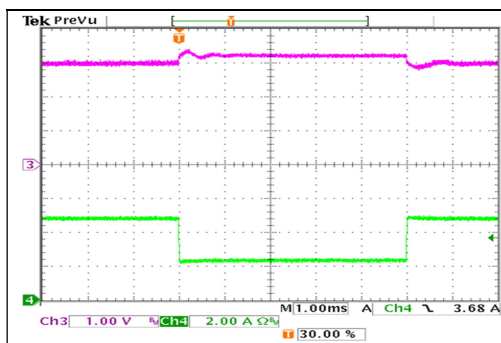


Figure 13 ( 90 Vac / 5 mS / H -&gt; L: 5 A -&gt; 2.5 A )

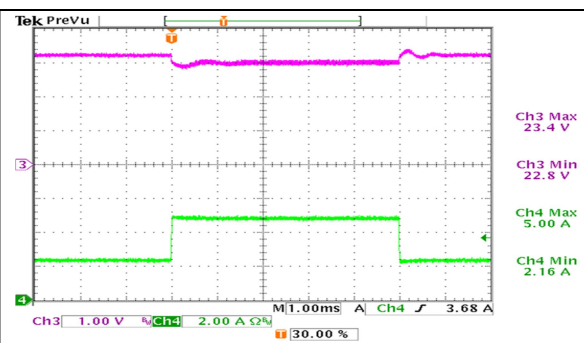


Figure 14 ( 90 Vac / 5 mS / L -&gt; H: 2.5 A -&gt; 5 A )

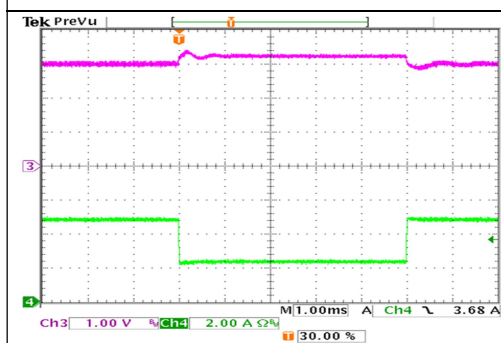


Figure 15 ( 100 Vac / 5 mS / H -&gt; L: 5 A -&gt; 2.5 A )

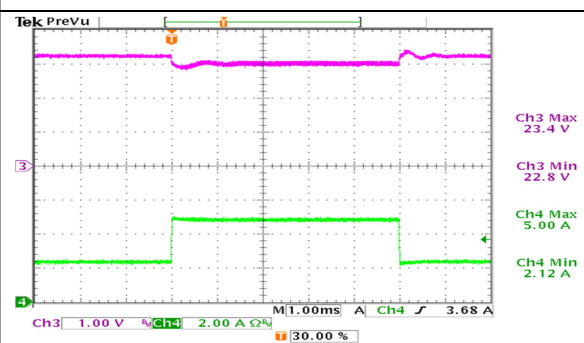


Figure 16 ( 100 Vac / 5 mS / L -&gt; H: 2.5 A -&gt; 5 A )

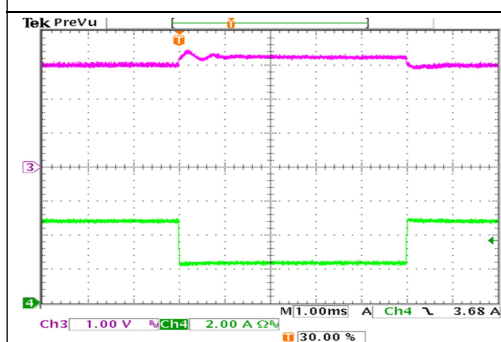


Figure 17 ( 240 Vac / 5 mS / H -&gt; L: 5 A -&gt; 2.5 A )

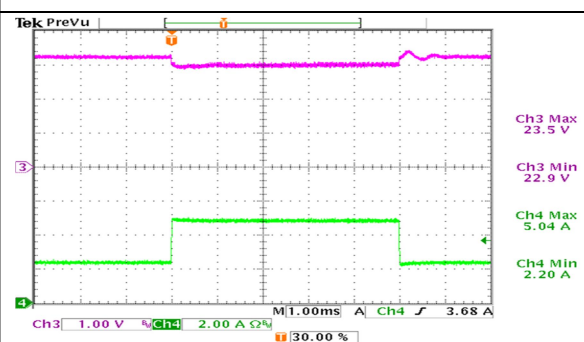


Figure 18 ( 240 Vac / 5 mS / L -&gt; H: 2.5 A -&gt; 5 A )

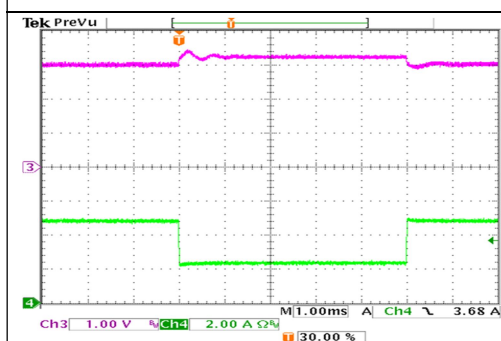


Figure 19 ( 264 Vac / 5 mS / H -&gt; L: 5 A -&gt; 2.5 A )

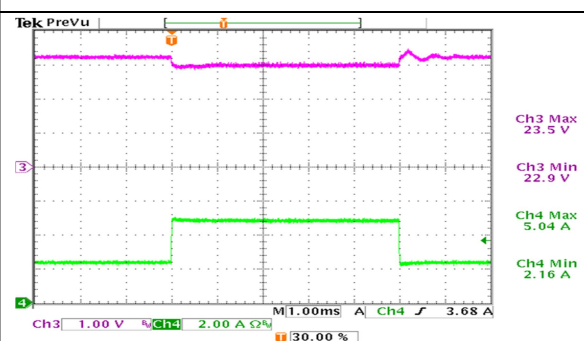


Figure 20 ( 264 Vac / 5 mS / L -&gt; H: 2.5 A -&gt; 5 A )



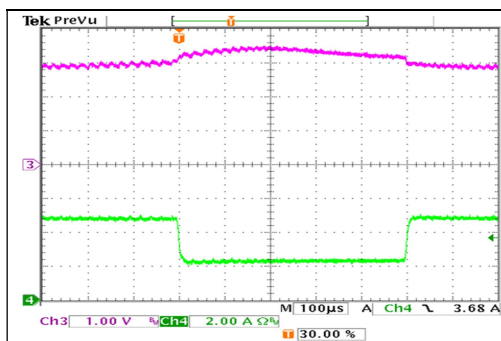


Figure 21 ( 90 Vac / 0.5 mS / H -&gt; L: 5 A -&gt; 2.5 A )

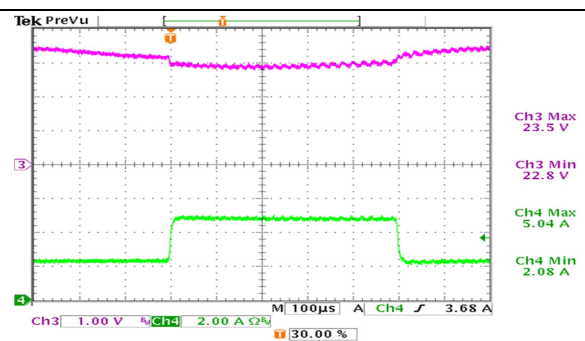


Figure 22 ( 90 Vac / 0.5 mS / L -&gt; H: 2.5 A -&gt; 5 A )

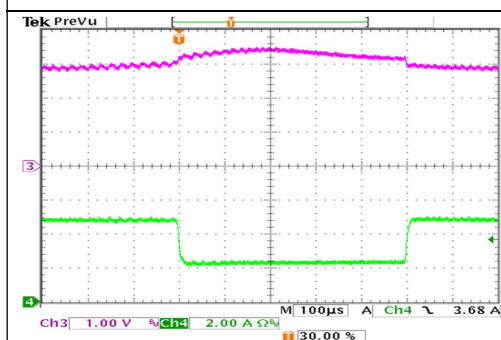


Figure 23 ( 100 Vac / 0.5 mS / H -&gt; L: 5 A -&gt; 2.5 A )

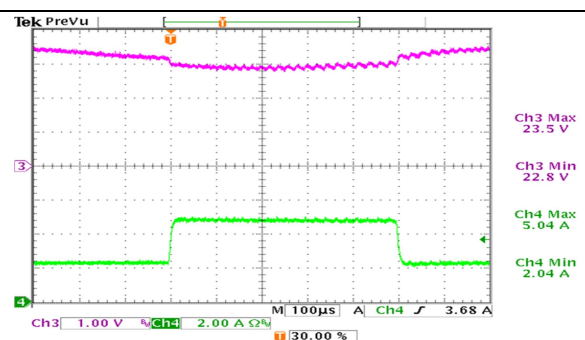


Figure 24 ( 100 Vac / 0.5 mS / L -&gt; H: 2.5 A -&gt; 5 A )

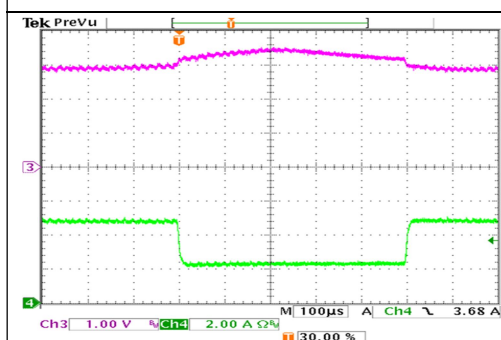


Figure 25 ( 240 Vac / 0.5 mS / H -&gt; L: 5 A -&gt; 2.5 A )

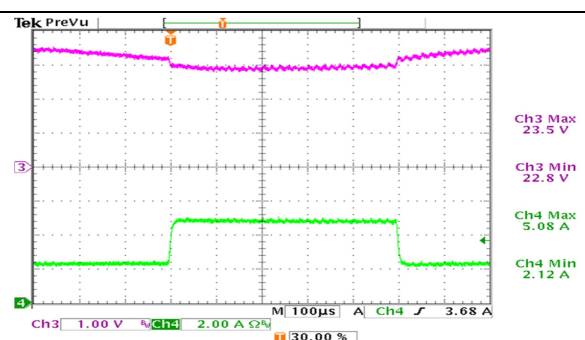


Figure 26 ( 240 Vac / 0.5 mS / L -&gt; H: 2.5 A -&gt; 5 A )

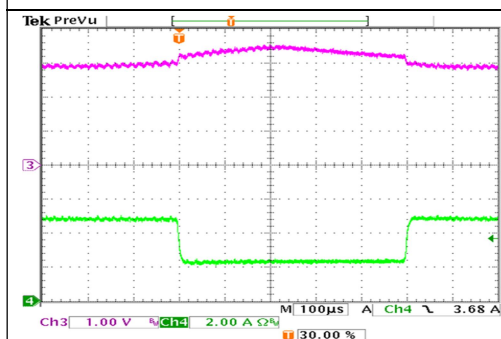


Figure 27 ( 264 Vac / 0.5 mS / H -&gt; L: 5 A -&gt; 2.5 A )

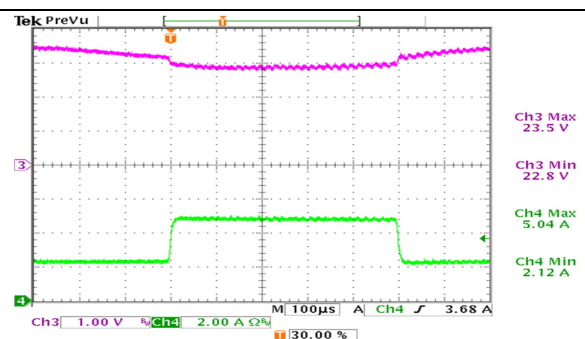


Figure 28 ( 264 Vac / 0.5 mS / L -&gt; H: 2.5 A -&gt; 5 A )



## 10. Voltage Stress on MOSFET

### Test Condition:

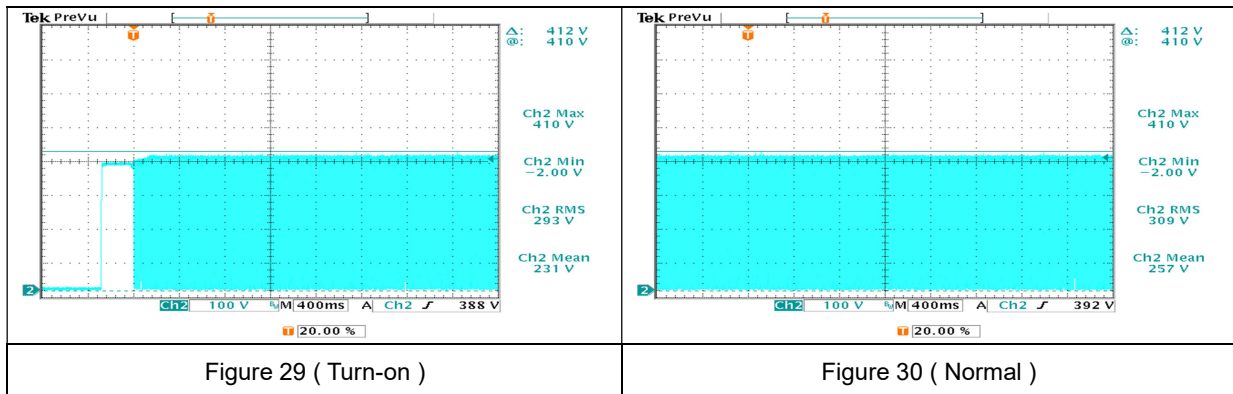
Input: 264 Vac / 63 Hz

Output: 24 V / 5 A

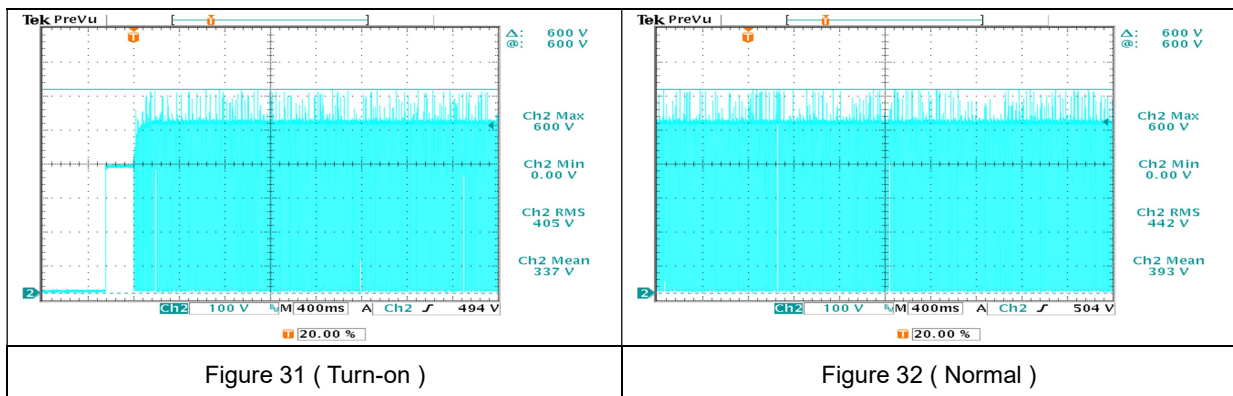
| Location | Condition | Vds<br>( V ) | Spec.<br>( V )            |
|----------|-----------|--------------|---------------------------|
| Q101     | Turn-on   | 410          | < 585<br>( 650 * 90 % )   |
|          | Normal    | 410          |                           |
| Q102     | Turn-on   | 600          | < 617.5<br>( 650 * 95 % ) |
|          | Normal    | 600          |                           |
| Q301     | Turn-on   | 130          | < 135<br>( 150 * 90 % )   |
|          | Normal    | 129          |                           |

Table 11

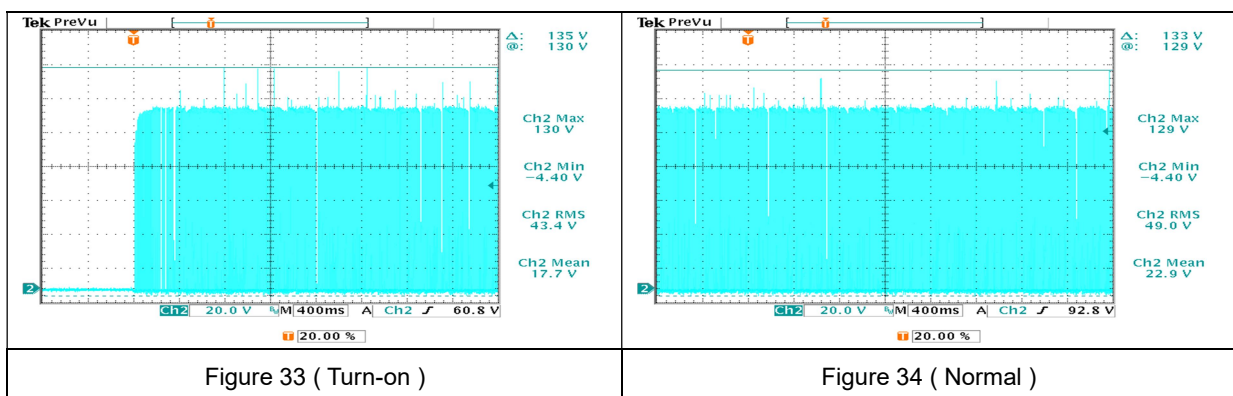
Q101:



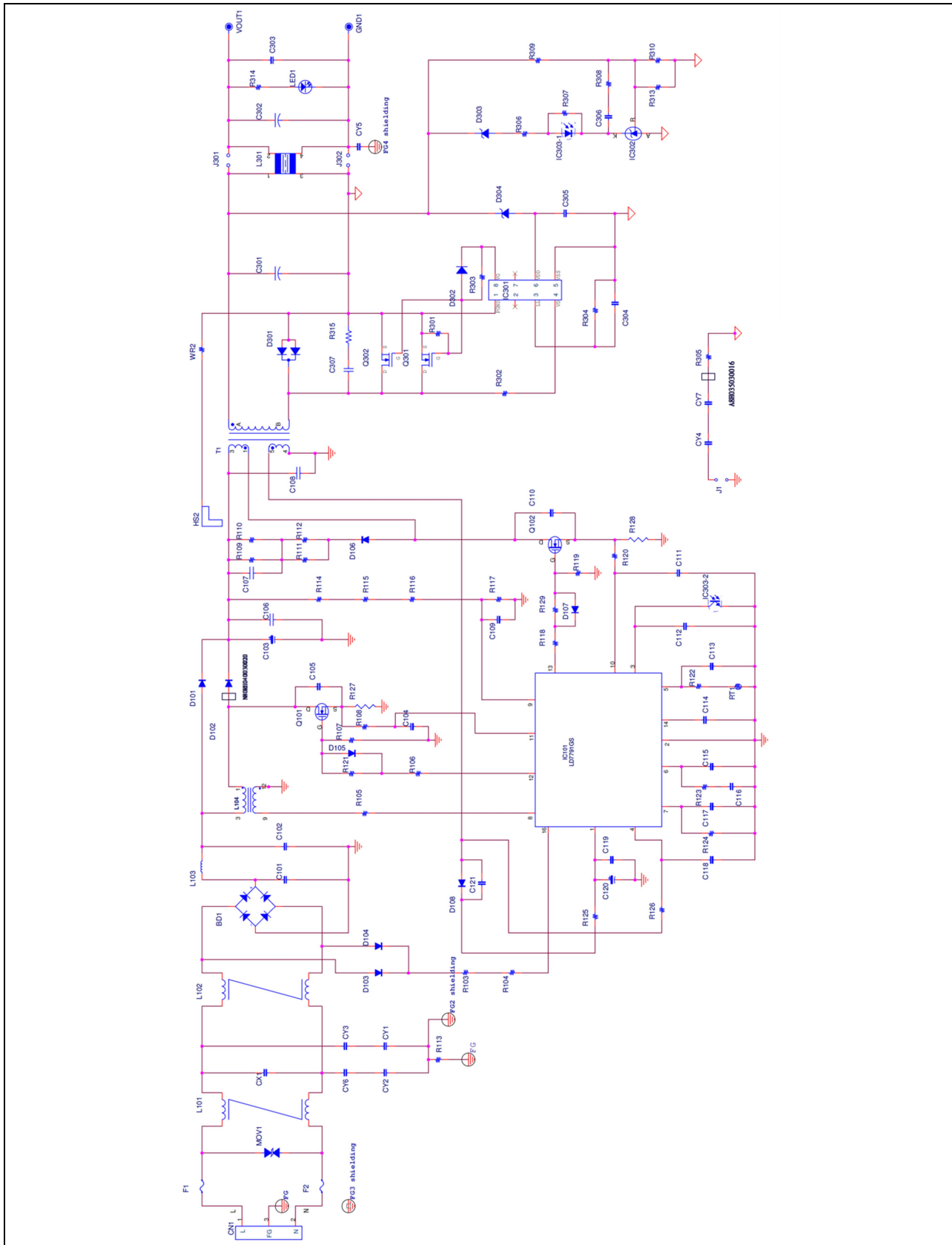
Q102:



Q301:



### III. Schematic



## IV. BOM

| Location           | Component Value                                         | Q'ty |
|--------------------|---------------------------------------------------------|------|
| RT1                | TTC3A104F4193EY / 100 k $\Omega$ / F / 4 $\Phi$         | 1    |
| R103,R104          | 5.1 k $\Omega$ / J / 1206                               | 2    |
| R105               | 39 k $\Omega$ / J / 1206                                | 1    |
| R106,R118,R303     | 10 $\Omega$ / J / 0805                                  | 3    |
| R107,R119          | 10 k $\Omega$ / J / 0805                                | 2    |
| R108               | 470 $\Omega$ / J / 0805                                 | 1    |
| R109,R110          | 200 k $\Omega$ / J / 1206                               | 2    |
| R111,R112,D303,WR2 | 0 $\Omega$ / J / 1206                                   | 4    |
| R113               | 1 M $\Omega$ / J / 1206                                 | 1    |
| R114,R115          | 7.5 M $\Omega$ / F / 1206                               | 2    |
| R116               | 2.49 M $\Omega$ / F / 1206                              | 1    |
| R117               | 115 k $\Omega$ / F / 1206                               | 1    |
| R120               | 560 $\Omega$ / J / 0805                                 | 1    |
| R121,R129          | 22 $\Omega$ / J / 0805                                  | 2    |
| R122               | 12.7 k $\Omega$ / F / 0805                              | 1    |
| R123               | 39 k $\Omega$ / J / 0805                                | 1    |
| R124               | 62 k $\Omega$ / F / 0805                                | 1    |
| R125               | 1 $\Omega$ / J / 1206                                   | 1    |
| R126               | 68 k $\Omega$ / J / 0805                                | 1    |
| R127               | 75 m $\Omega$ / F / 3WS / NKNP                          | 1    |
| R128               | 0.16 $\Omega$ / F / 3WS / MOF                           | 1    |
| R302,R306,R308     | 1 k $\Omega$ / J / 0805                                 | 3    |
| R304               | 100 k $\Omega$ / J / 0805                               | 1    |
| R305               | 0 $\Omega$ / J / 0805                                   | 1    |
| R307               | 3 k $\Omega$ / J / 0805                                 | 1    |
| R309               | 169 k $\Omega$ / F / 0805                               | 1    |
| R310               | 20.5 k $\Omega$ / F / 0805                              | 1    |
| R313               | 976 k $\Omega$ / F / 0805                               | 1    |
| R314               | 15 k $\Omega$ / J / 0805                                | 1    |
| R315               | 22 $\Omega$ / J / 1206                                  | 1    |
| CX1                | 0.68 $\mu$ F ( 684 ) / 275 V / K / HQX / X1 / P = 15 mm | 1    |
| CY1,CY2,CY7        | 1 nF ( 102 ) / 250V / M / CD / Y1 / P = 10 mm           | 3    |
| CY3,CY4,CY6        | Jumper / 0.6 $\Phi$ / 3.5 x 10 x 3.5 mm                 | 3    |
| CY5                | 470 pF ( 471 ) / 250V / M / CS / Y2 / P = 7.5 mm        | 1    |
| C101,C102          | 1 $\mu$ F ( 105 ) / 500 V / J / FMPP / P = 15 mm        | 2    |
| C103               | 120 $\mu$ F / 450 V / 18 x 31.5 mm                      | 1    |

| Location                 | Component Value                                           | Q'ty |
|--------------------------|-----------------------------------------------------------|------|
| C104                     | 680 pF ( 681 ) / 50 V / X7R / K / 0805                    | 1    |
| C105                     | 470 pF ( 471 ) / 1 kV / NPO / K / 1206                    | 1    |
| C106                     | 22 nF ( 223 ) / 1 kV / Z5V                                | 1    |
| C107                     | 2.2 nF ( 222 ) / 1 kV / X7R / K / 1206                    | 1    |
| C109,C112,C113,C304      | 1 nF ( 102 ) / 50 V / X7R / K / 0805                      | 4    |
| C110                     | 100 pF ( 101 ) / 1 kV / X7R / K / 1206                    | 1    |
| C111                     | 220 pF ( 221 ) / 50 V / X7R / K / 0805                    | 1    |
| C114                     | 47 nF ( 473 ) / 50 V / X7R / K / 0805                     | 1    |
| C115                     | 330 nF ( 334 ) / 50 V / X7R / K / 0805                    | 1    |
| C116                     | 470 nF ( 474 ) / 50 V / X7R / K / 0805                    | 1    |
| C117,C119,C303,C305,C306 | 100 nF ( 104 ) / 50 V / X7R / K / 0805                    | 5    |
| C120                     | 22 $\mu$ F / 50 V / 5 x 11 mm                             | 1    |
| C301,C302                | 1,000 $\mu$ F / 35 V / 13 x 25 mm                         | 2    |
| C307                     | 220 pF ( 221 ) / 1 kV / X7R / K / 1206                    | 1    |
| BD1                      | GBU8J-U1 / 600 V / 8 A / ABS                              | 1    |
| D101                     | FM305B / 600 V / 3 A / SMB                                | 1    |
| D102                     | LTTH806LF / 600 V / 8 A / ITO-220AC                       | 1    |
| D103,D104,D108           | FS1ME / 1 kV / 1 A / SOD-123                              | 3    |
| D105,D107,D302           | 1N4148WF / 75 V / 0.15 A / SOD-123F                       | 3    |
| D106                     | S3MB / 1 kV / 3 A / SMB                                   | 1    |
| D304                     | MMSZ5239B / 9.1 V / 0.5 W / SOD-123                       | 1    |
| LED1                     | RTL-3000GD / 3 $\Phi$ / Green                             | 1    |
| Q101                     | MMF60R190P / 650 V / 20 A / 0.19 $\Omega$ / TO-220F       | 1    |
| Q102                     | SM6F27NSFPC-TUG / 650 V / 18 A / 0.22 $\Omega$ / TO-220FP | 1    |
| Q301                     | IPA105N15N3G / 150 V / 37 A / 10.5 m $\Omega$ / TO-220FP  | 1    |
| IC101                    | LD7791GS / SOP-16                                         | 1    |
| IC301                    | MP6905GS-Z / SOIC-8                                       | 1    |
| IC302                    | LA431OCRPA / SOT-23-3L                                    | 1    |
| IC303                    | EL817S1(C)(TA)-F / 200 ~ 400 % / DIP-4                    | 1    |
| L101                     | T 12 x 6 x 4C / 240 $\mu$ H / 0.65 mm x 7 T               | 1    |
| L102                     | T 18 x 10 x 8C / 24 mH / 0.6 mm x 50 T                    | 1    |
| L103                     | T 80 - 52 / 159 $\mu$ H / 0.9 mm x 65.5 T                 | 1    |
| L104                     | PQ-2625 / 400 $\mu$ H                                     | 1    |
| L301                     | T 10 x 6 x 5C / 310 $\mu$ H / 0.8 mm x 6.5 T              | 1    |
| T1                       | POT-4022 / 420 $\mu$ H                                    | 1    |
| F1                       | 6.3 A / 250V / T / 2010                                   | 1    |
| F2                       | Jumper / 0.6 $\Phi$ / 3.5 x 5 x 3.5 mm                    | 1    |

| Location                       | Component Value                           | Q'ty |
|--------------------------------|-------------------------------------------|------|
| MOV1                           | JVR14S471K87PU5 / 470 V / 14 $\Phi$       | 1    |
| J1                             | Jumper / 1.2 $\Phi$ / 4 x 19 x 4 mm       | 1    |
| B3 ( for D102 + )              | Bead Core / N80RH040030020 / 4 x 3 x 2 mm | 1    |
| Bead Core ( for CY7 )          | Bead Core / A8H035030016                  | 1    |
| LED Holder                     | LEDS-10 / 3 $\Phi$ x 10 L                 | 1    |
| HS1 ( for D102 / Q101 / Q102 ) | Heat Sink                                 | 1    |
| HS2 ( for Q301 )               | Heat Sink                                 | 1    |
| HS3 ( for BD1 )                | Heat Sink                                 | 1    |
| Top HS ( for L104 )            | Heat Sink                                 | 1    |
| Bottom SPTE                    | Shieling SPTE                             | 1    |
| PCB                            | 162 x 62 x 1.6 mm / FR-4 / 1 oz           | 1    |
| Inlet                          | C14                                       | 1    |
| AC Wire ( L / N )              | UL1015 / 18 AWG / 45 mm                   | 2    |
| AC Wire ( FG )                 | UL1015 / 18 AWG / 50 mm / with Bead Core  | 1    |
| DC Cord                        | UL2468 / 16 AWG / 1.2 m                   | 1    |
| Case                           | 171 x 72 x 42.5 mm                        | 1    |
| Label                          | Label                                     | 1    |

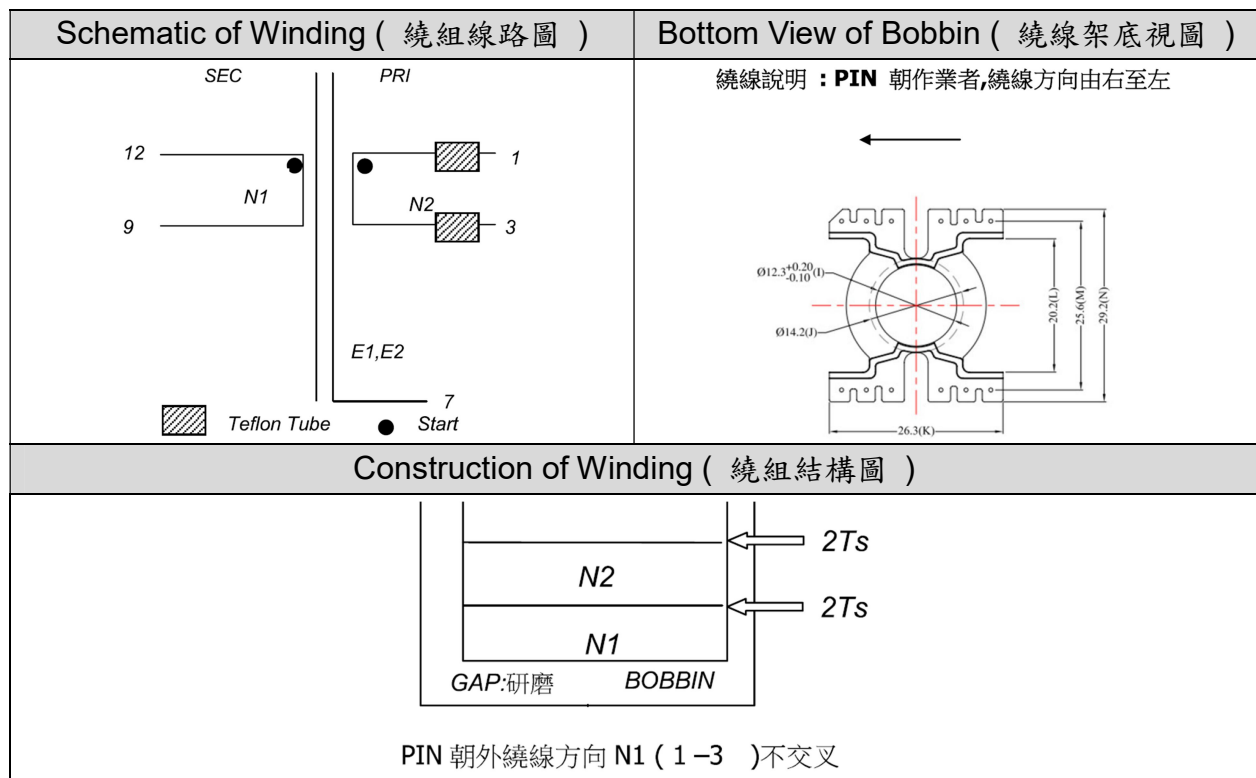
## V. P.F.C. Choke & Transformer Spec.

L104 ( P.F.C. Choke ) :

Bobbin / Core = PQ-2625 / PF-2LA or NH2G

Inductance = 400  $\mu$ H @ 66 kHz / 1 V

Ae = 124.3 mm<sup>2</sup>



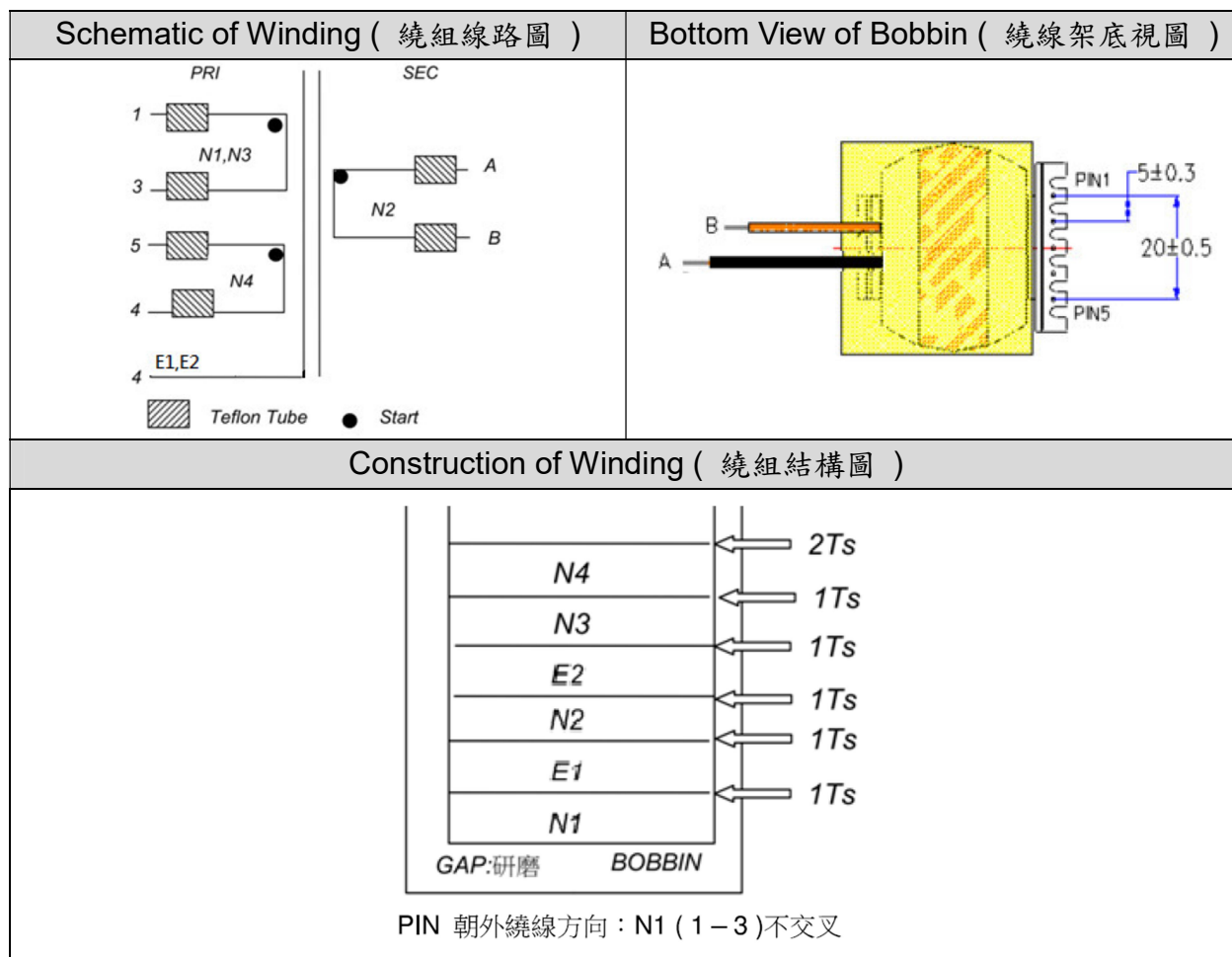
| 繞線<br>順序 | 線徑<br>(φ) | 圈數<br>(T)       | 繞線<br>方式 | 繞線<br>層數 | 膠帶<br>層數 | NOTE |
|----------|-----------|-----------------|----------|----------|----------|------|
| N1       | 1-3       | LIZE φ 0.1mm*60 | 42       | 密        | 2L       |      |
| N2       | 12-9      | TIW-M φ 0.5mm   | 4        | 疏        | 2L       |      |
|          | OVER CORE |                 |          |          |          |      |
| E1       |           | 自粘銅箔 0.025*12mm | 1.1      |          |          | 磁芯方向 |
| E2       | 12        | 自粘銅箔 0.025*12mm | 1.1      |          | 2L       | 繞包方向 |

### T1 ( Transformer ) :

Bobbin / Core = POT-4022 / PF-2LA or NH2G

Inductance = 420  $\mu$ H @ 66 kHz / 1 V

$A_e = 211 \text{ mm}^2$



| 步驟<br>Step | 繞線順序<br>Winding No | 腳位<br>PIN | 線徑*股數<br>Wire & Wire Copper        | 圈數<br>Turns | 繞線方式<br>Winding Tape | 膠帶層數*寬度<br>Tape Layer | 注意事項<br>Note |
|------------|--------------------|-----------|------------------------------------|-------------|----------------------|-----------------------|--------------|
| 1          | N1                 | 1-3       | Wire 0.1 $\phi$ *70                | 24          | 密                    | 1L*13mm               |              |
| 2          | E1                 | 4-NC      | Copper foil<br>W12mm*T0.025mm      | 1.1         |                      | 1L*13mm               |              |
| 3          | N2                 | A-B       | Triple Wire<br>0.3 $\phi$ *7 股*2 條 | 5           | 密                    | 1L*13mm               | 底部繞到頂部       |
| 4          | E2                 | 4-NC      | Copper foil<br>W12mm*T0.025mm      | 1.1         |                      | 1L*13mm               |              |
| 5          | N3                 | 1-3       | Wire 0.1 $\phi$ *70                | 24          | 密                    | 1L*13mm               |              |
| 6          | N4                 | 5-4       | Wire 0.3 $\phi$ *1                 | 4           | 疏                    | 2L*13mm               |              |
| 7          | OVER CORE-         |           |                                    |             |                      |                       |              |
| 8          | S1                 | NC-NC     | 自粘銅箔<br>W12mm*T0.025mm             | 1.1         |                      |                       | 磁芯方向         |
| 9          | S2                 | 4-NC      | 自粘銅箔<br>W12mm*T0.025mm             | 1.1         |                      |                       | 線包方向         |