

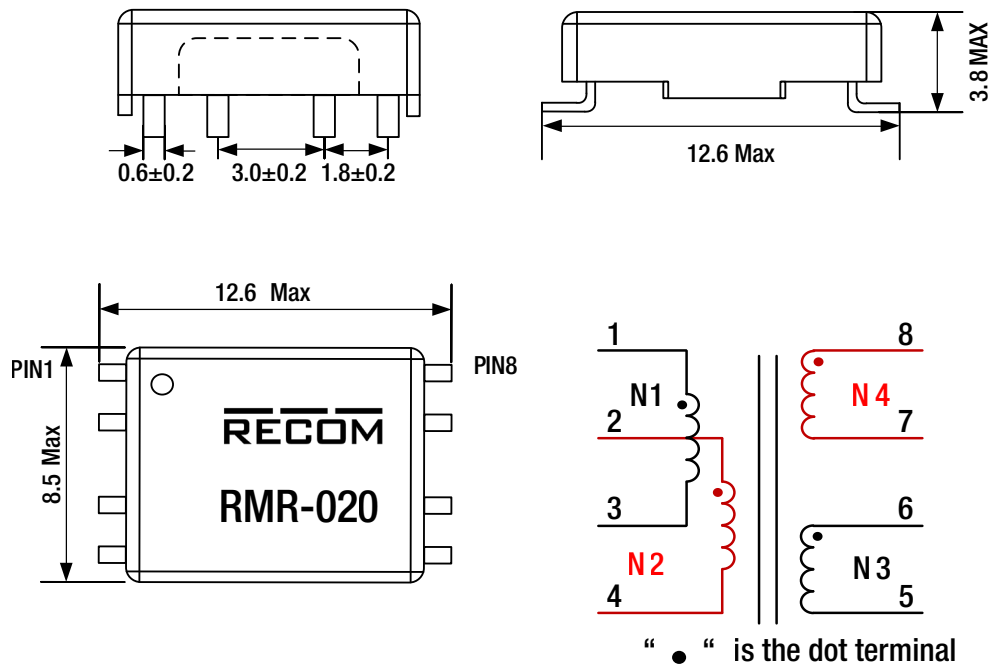
RMR-020 ⬠ Flyback Transformer

1W ⬠ SMD ⬠ 3kVDC Isolation

FEATURES

- Small-sized isolation transformer
- SMD surface mount installation
- Isolation voltage: 3000VDC/1minute
- Operating temperature: -40~125°C
- Maximum product dimensions: 12.6mm × 8.5mm × 3.8mm

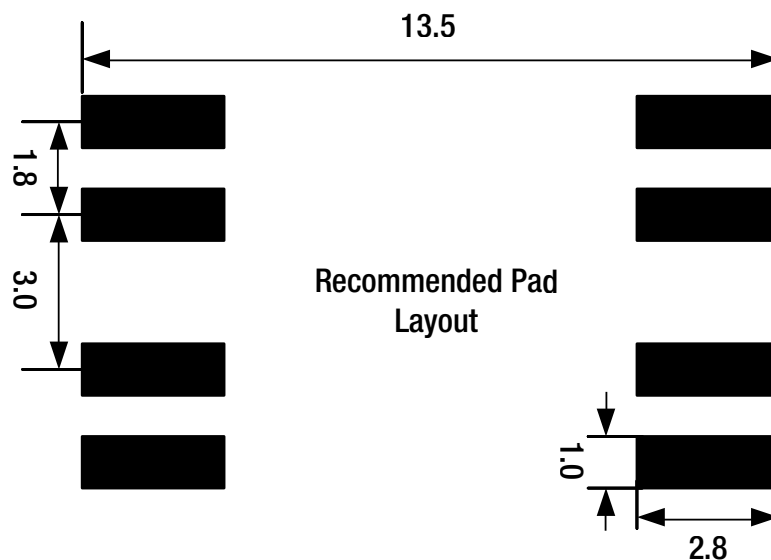
DIMENSIONS AND SCHEMATIC DIAGRAM [mm]



PRODUCT MARKING

| | |
|---------|---------------|
| Pin1 | ○ |
| Marking | Company Logo |
| | Product Model |

RECOMMENDED LAND PATTERN [mm]



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BASIC CHARACTERISTIC (measured @ TAMB= 25°C, nominal Input and full load after warm-up time unless otherwise stated)

| Properties | | Test Conditions | Value | Unit |
|--------------------------|------------------|---|---------------|-----------|
| Inductance | L | N1/100kHz/0.1V | 139 min. | μ H |
| Turns Ratio | n | N1:N2:N3:N4 | 1:1:2.53:2.53 | |
| DC Resistance 1 | R _{DC1} | N1:N2/25°C | 0.30 max. | Ω |
| DC Resistance 2 | R _{DC2} | N3:N4 /25°C | 0.61 max. | Ω |
| Voltage- μ Second | \int_{Udt} | N1/ bipolar waveform | 17 | V μ s |
| Interwinding Capacitance | C _{ww} | PIN1-8 / 100kHz / 0.1V / 25°C | 25 max. | pF |
| Leakage Inductance | L _S | N1/100kHz/0.1V, all other terminals short | 0.5 max. | μ H |
| Isolation Test Voltage | V _T | N1,2: N3,4/60s/1mA | 3000 | VDC |

GENERAL INFORMATION

| | |
|--|--------------|
| Operating Temperature (including temperature rise) | -40~125°C |
| Storage Temperature | -40~125°C |
| Storage Conditions (in original packaging) | <40°C/<75%RH |
| Moisture Sensitivity Level (MSL) | 1 |
| Insulation Grade | Functional |

MATERIAL CERTIFICATION

| ITEM | | UL NO |
|------|---------|---------|
| 1 | Case | E150608 |
| 2 | Wire | E253843 |
| 3 | Varnish | E314793 |

ENVIRONMENTAL COMPLIANCE

| | |
|----------------|-------------------------------------|
| RoHS Approval | Compliant [2011/65/EU&2015/863] |
| REACH Approval | Conform or declared [(EC)1907/2006] |
| Halogen Free | Conform [EN 14582:2016] |

TYPICAL APPLICATION

| Parameter | | Value | Unit |
|---------------------|---------------------|-------|------|
| Input Voltage | V _{IN} | 5 | VDC |
| Output Voltage 1 | V _{OUT1} | 12 | VDC |
| Output Current 1 | I _{OUT1} | 83 | mA |
| Switching Frequency | f _{switch} | 217 | kHz |

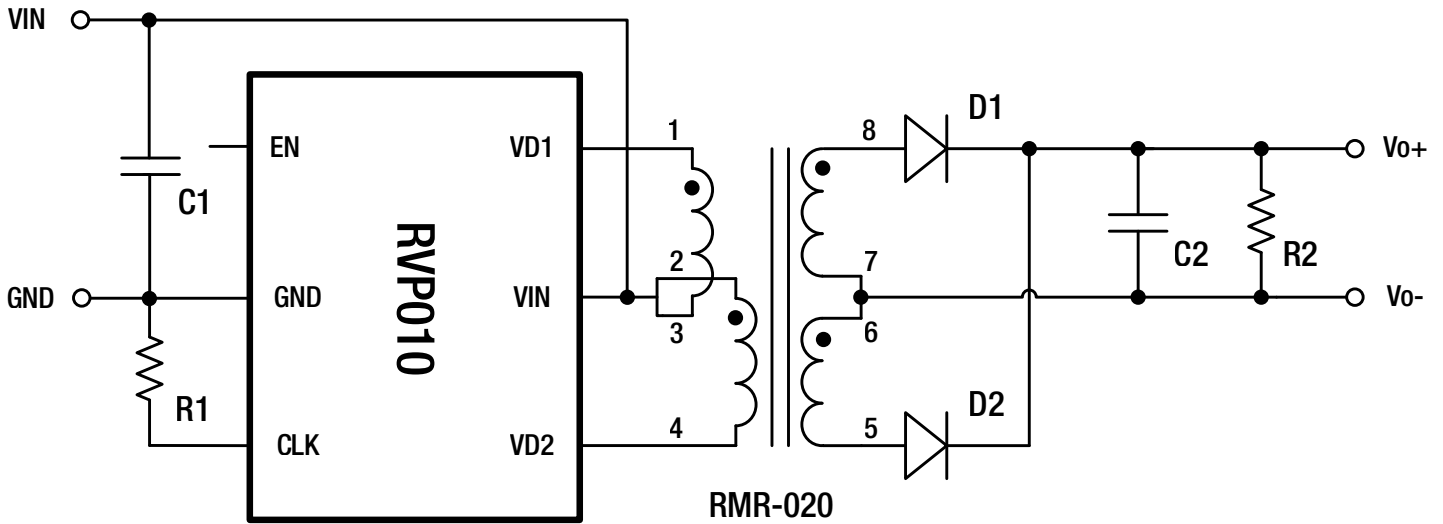
Input: N1/N2
Output 1: N3/N4

Table and graph show a typical application. Values may vary by application.

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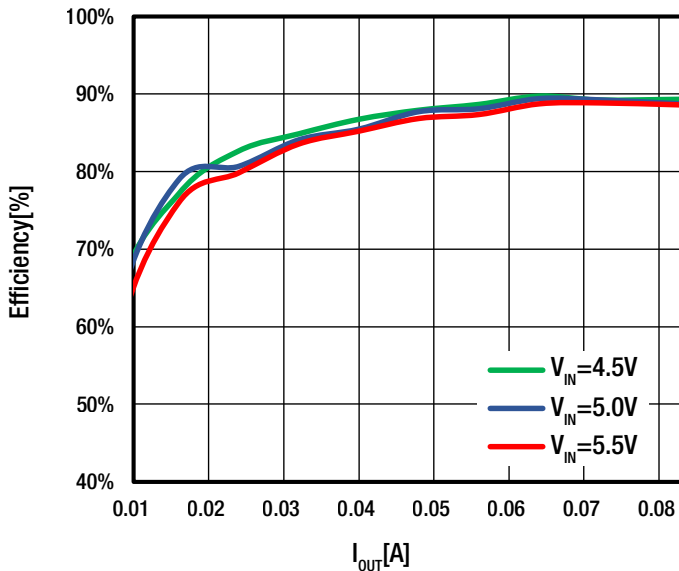
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REFERENCE CIRCUIT DIAGRAM

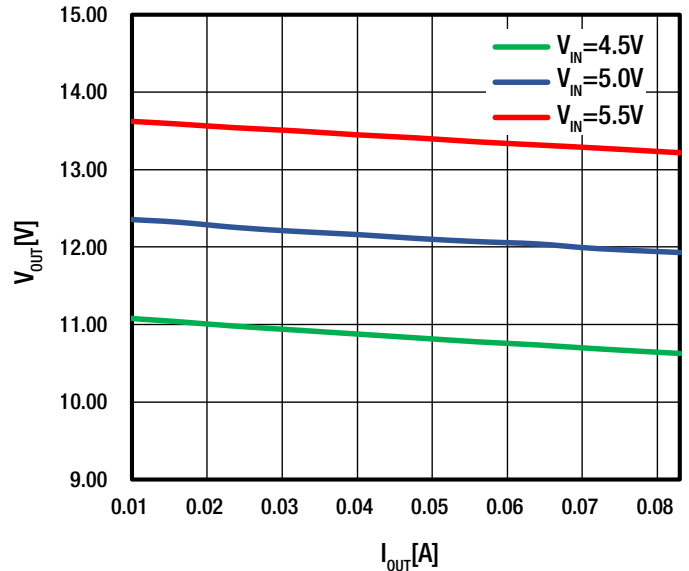


Typical Curve:

Typical Efficiency vs. Output Current



Typical Output Voltage vs. Output Current

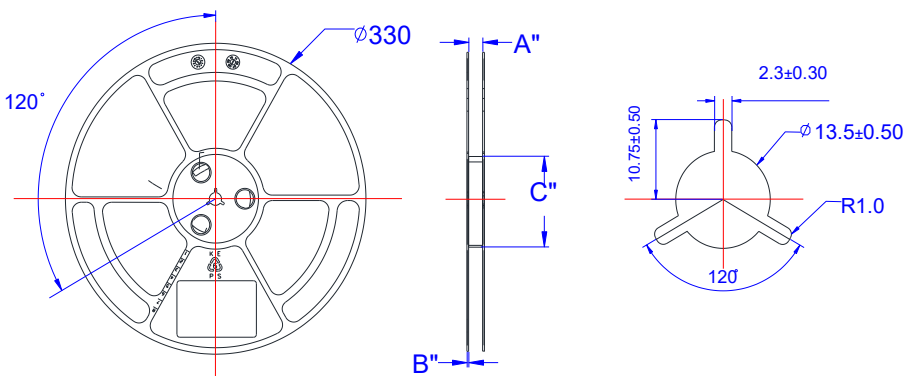
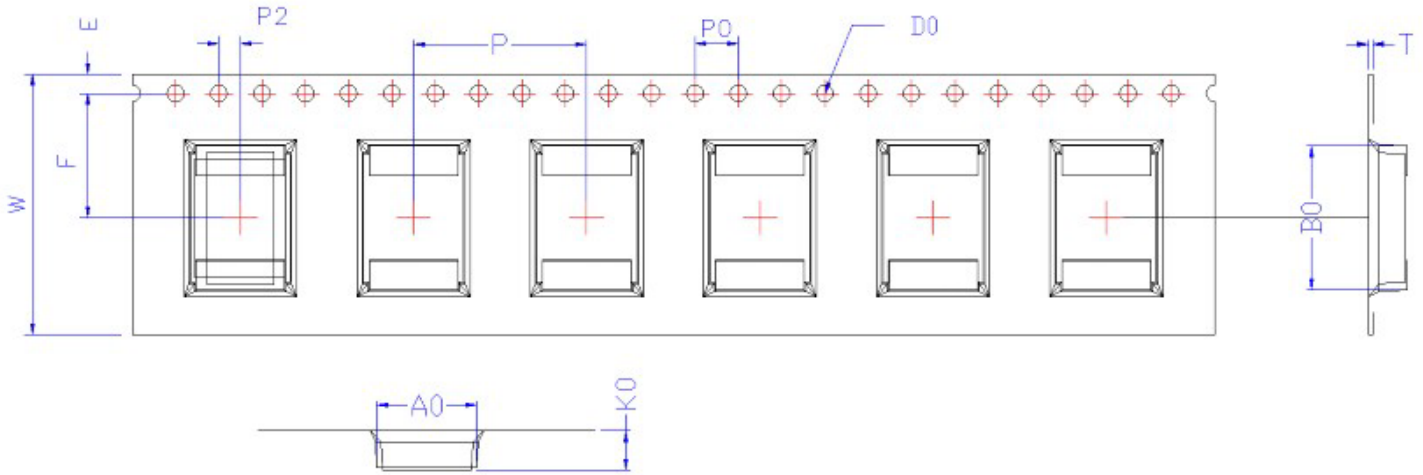


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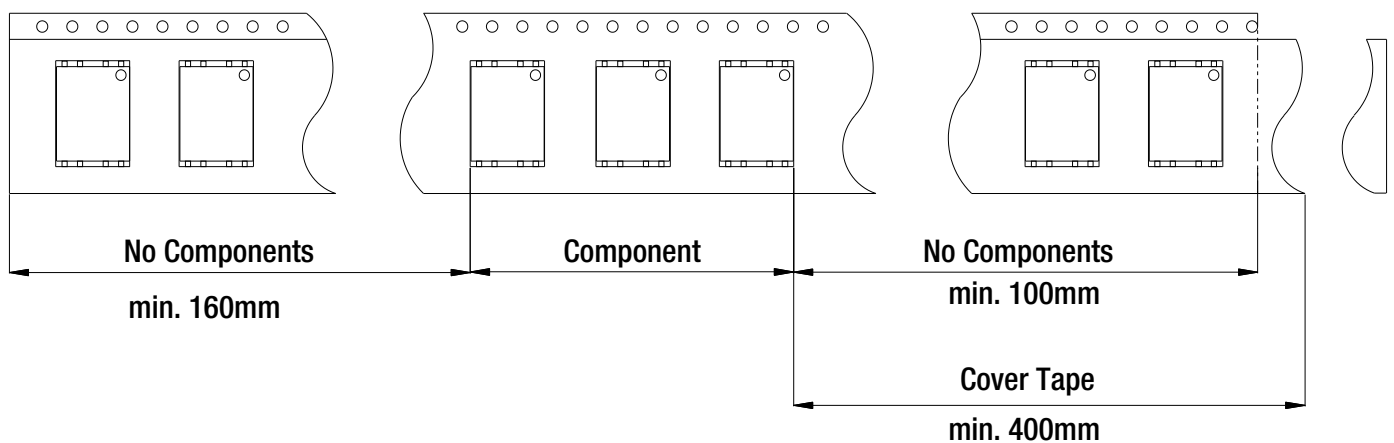
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PACKAGING SPECIFICATION - TAPE & REEL [mm]

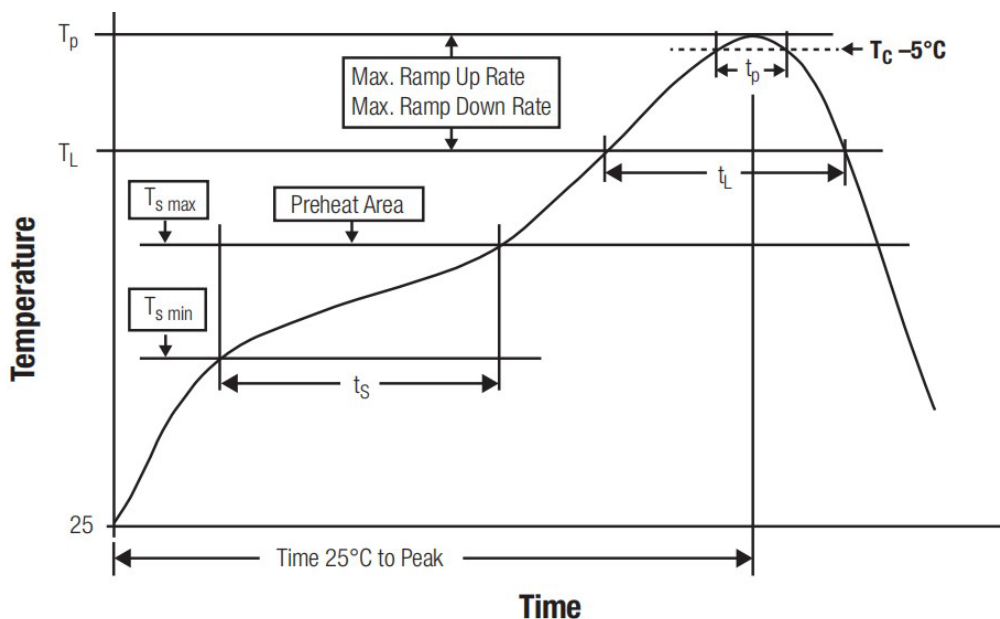
| ITRM | W | A0 | B0 | K0 | K1 | P | F | E | D0 | D1 | P0 | P2 | T |
|------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| DIM | 24.00 | 8.90 | 12.90 | 3.70 | -- | 16.00 | 11.50 | 1.75 | 1.50 | -- | 4.00 | 2.00 | 0.40 |
| TOLE | +0.30 -0.30 | +0.15 -0.15 | +0.15 -0.15 | +0.10 -0.10 | +0.10 -0.10 | +0.10 -0.10 | +0.10 -0.10 | +0.10 -0.10 | +0.10 -0.10 | +0.10 -0.00 | +0.10 -0.10 | +0.15 -0.15 | +0.05 -0.05 |



| | | | | | |
|---------------|------|------|------|------|------|
| | | ✓ | | | |
| SPEC | 16 | 24 | 32 | 44 | 56 |
| DIM A'' ± 0.5 | 16.5 | 24.5 | 32.5 | 44.5 | 56.5 |
| DIM B'' ± 0.3 | 2.10 | 2.10 | 2.10 | 2.10 | 2.10 |
| DIM C'' ± 0.5 | 100 | 100 | 100 | 100 | 100 |



REFLOW SOLDERING



| Profile Feature | | Value |
|--|---------------------|---|
| Preheat Temperature Min | $T_{s \text{ min}}$ | 150°C |
| Preheat Temperature Max | $T_{s \text{ max}}$ | 200°C |
| Preheat Time t_s from $T_{s \text{ min}}$ to $T_{s \text{ max}}$ | t_s | 100 seconds |
| Ramp-up Rate (T_L to T_p) | | 3°C/second max. |
| Liquidous Temperature | T_L | 217°C |
| Time t_L maintained above T_L | t_L | 100 seconds |
| Peak package body temperature | T_p | $T_p \leq T_c$, see Table below |
| Time within 5°C of actual peak temperature | t_p | 30 seconds |
| Ramp-down Rate (T_p to T_L) | | 6°C/second max. |
| Time 25°C to peak temperature | | 5 minutes max. |
| Reflow soldering temperature | | Peak Temperature $\leq 250^\circ\text{C}$ (10s) |
| Reflow Soldering Cycles | | Recommended ≤ 2 Cycles |

Refer to IPC/JEDEC J-STD-020F

PACKAGE CLASSIFICATION REFLOW TEMPERATURE (T_c)

| Properties | Volume $\text{mm}^3 < 350$ | Volume $\text{mm}^3 350-2000$ | Volume $\text{mm}^3 > 2000$ |
|--|----------------------------|-------------------------------|-----------------------------|
| PB-Free Assembly Package Thickness $< 1.6 \text{ mm}$ | 260°C | 260°C | 260°C |
| PB-Free Assembly Package Thickness $1.6 \text{ mm} - 2.5 \text{ mm}$ | 260°C | 250°C | 245°C |
| PB-Free Assembly Package Thickness $> 2.5 \text{ mm}$ | 250°C | 245°C | 245°C |

Refer to IPC/JEDEC J-STD-020F

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ORDER INFORMATION

| Order Code | Marking Code* | Weight (g/pcs) | Package Type | Quantity (pcs/Reel) |
|----------------|---------------|----------------|--------------|---------------------|
| RMR-020-C5AS-R | RMR-020 | 0.5g | Tape & Reel | 1000pcs |

*Marking Code

RMR-020 — Product Code

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