

RMR-031 ♦ Unregulated Transformer

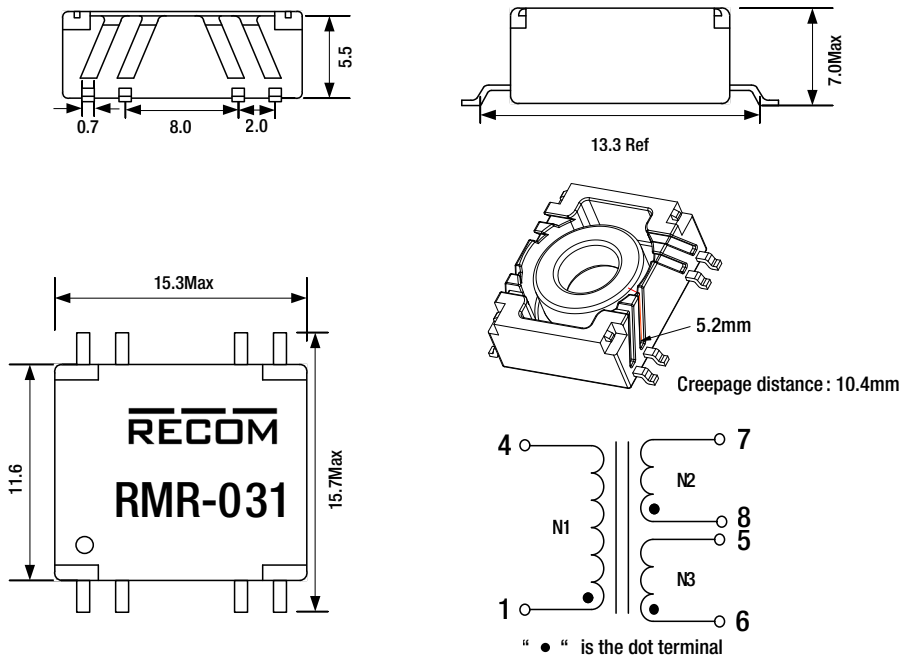
2.4W ♦ SMD ♦ 5kVAC Isolation



FEATURES

- Small-sized isolation transformer
- SMD surface mount installation
- Isolation voltage: 5000VAC/1 minute
- Operating temperature: -40~125°C
- Maximum product dimensions: 15.7mm × 15.3mm × 7.0mm

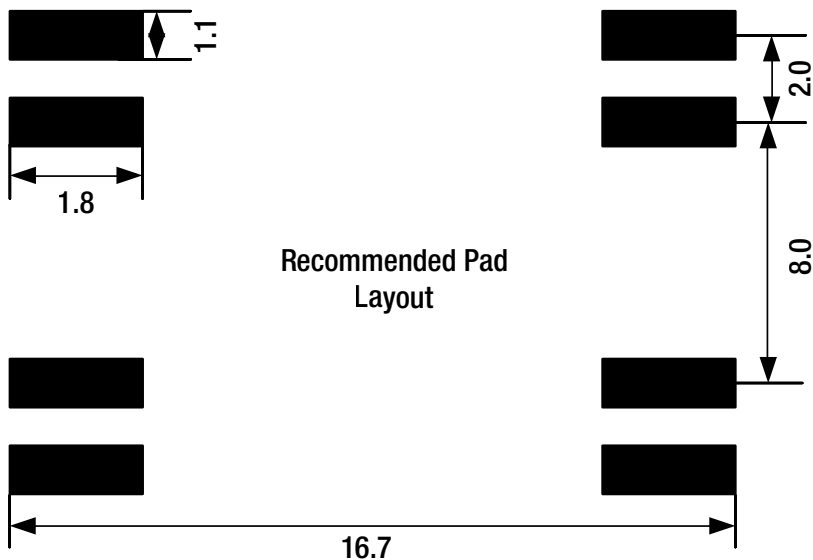
DIMENSIONS AND SCHEMATIC DIAGRAM [mm]



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	N1/10kHz/0.1V	381 min.	μH
Turns Ratio	n	N1:N2:N3	1:0.67:0.42	
DC Resistance 1	R _{DC1}	N1/25°C	0.30 max.	Ω
DC Resistance 2	R _{DC2}	N2/25°C	0.22 max.	Ω
DC Resistance 3	R _{DC3}	N3/25°C	0.16 max.	Ω
Voltage-μSecond	∫ _{Udt}	N1/ bipolar waveform	84 max.	Vμs
Interwinding Capacitance	C _{WW}	PIN1-8 / 100kHz / 0.1V / 25°C	10 max.	pF
Leakage Inductance	L _S	N1/100kHz/0.1V, all other terminals short	18 max.	μH
Isolation Test Voltage	V _T	N1,2: N3,4/60s/1mA	5000	VAC
Creepage Distance			10.4	mm

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
4 Glue	E304477

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}	24	VDC
Output Voltage 1	V _{OUT1}	+15	VDC
Output Voltage 2	V _{OUT2}	-9	VDC
Output Current	I _{OUT}	100	mA
Switching Frequency	f _{switch}	250	kHz

Input: N1

Output 1: N2

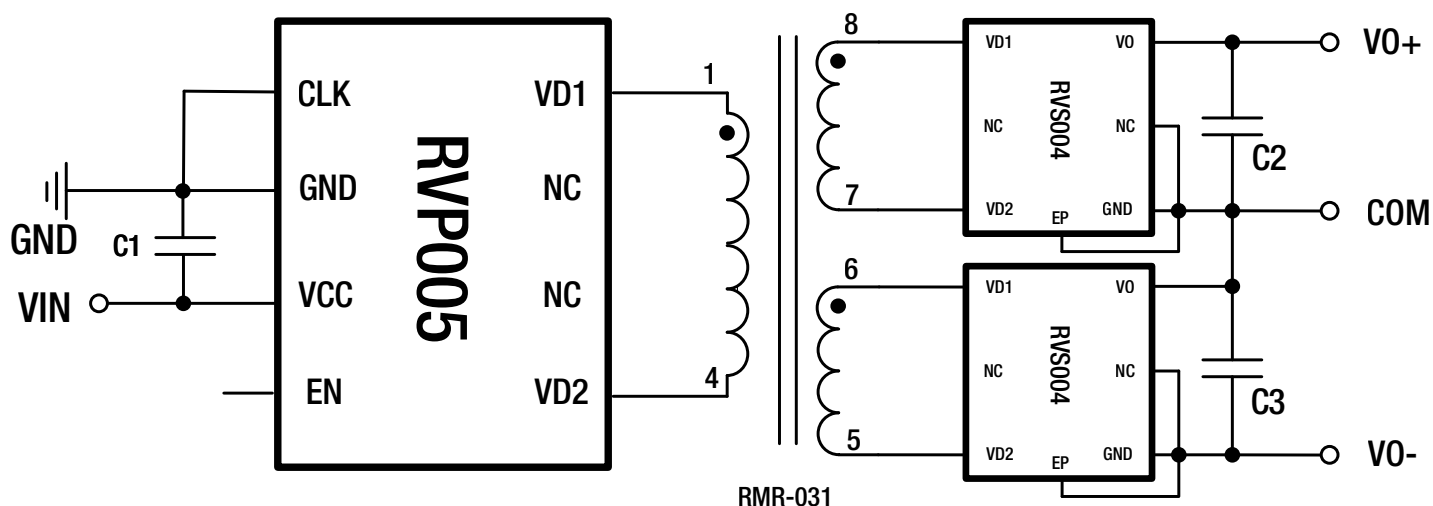
Output 2: N3

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

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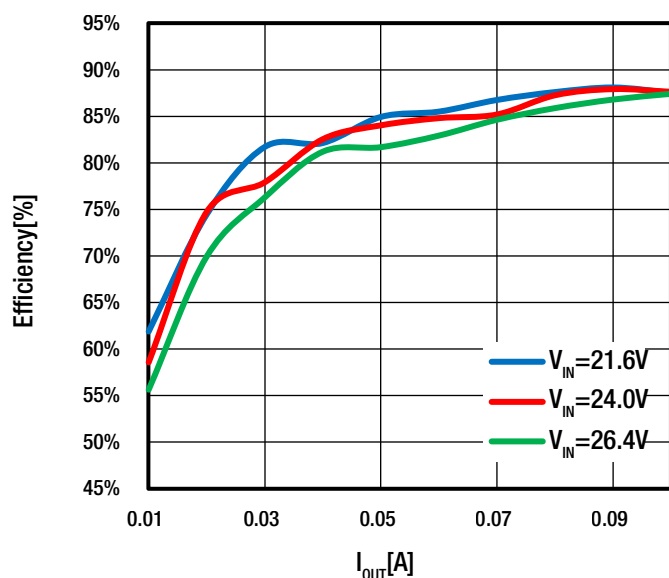
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REFERENCE CIRCUIT DIAGRAM

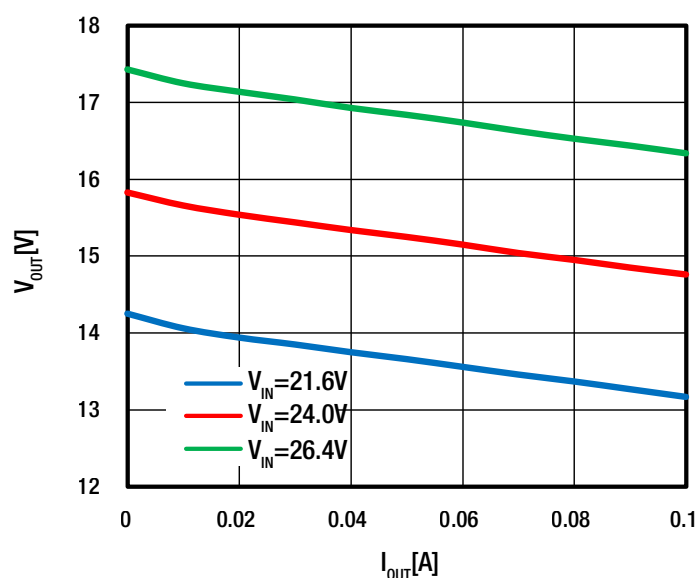


Typical Curve:

Typical Efficiency vs. Output Current



Typical Output Voltage vs. Output Current

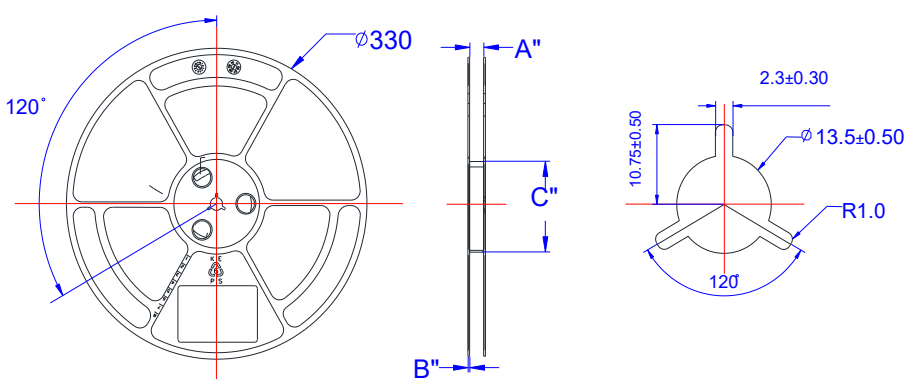
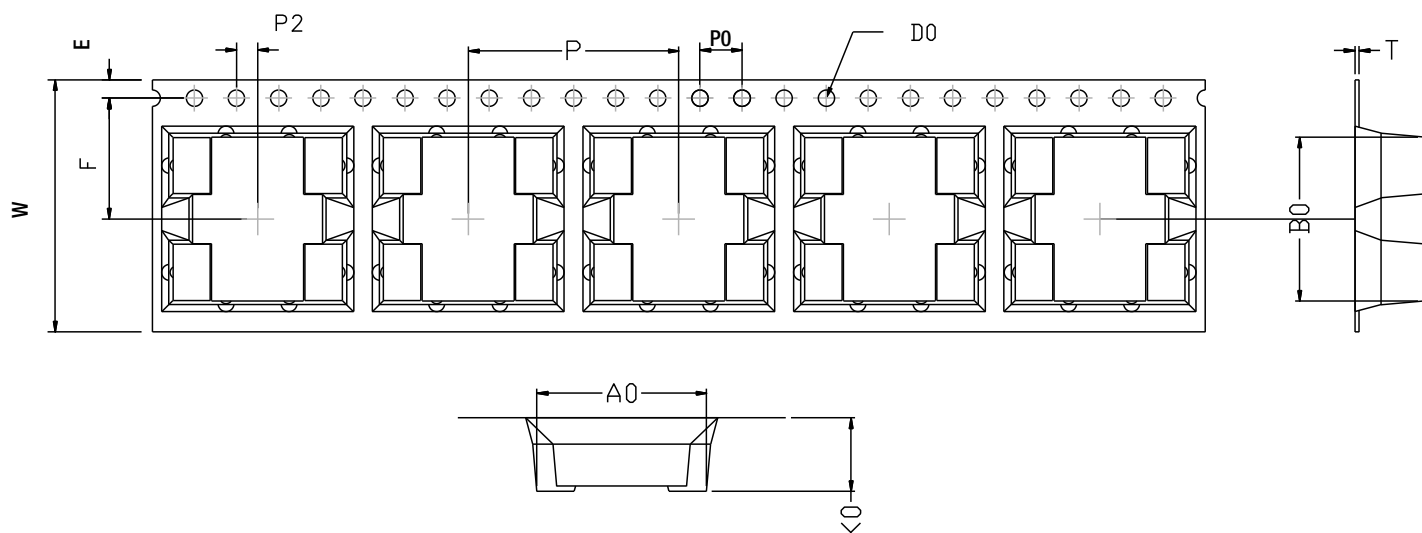


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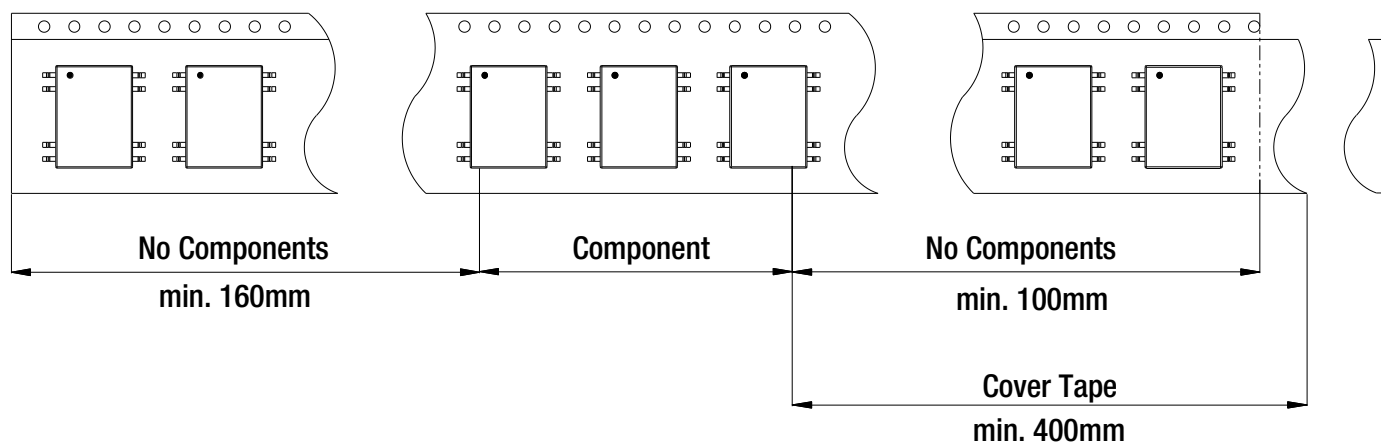
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PACKAGING SPECIFICATION - TAPE & REEL [mm]

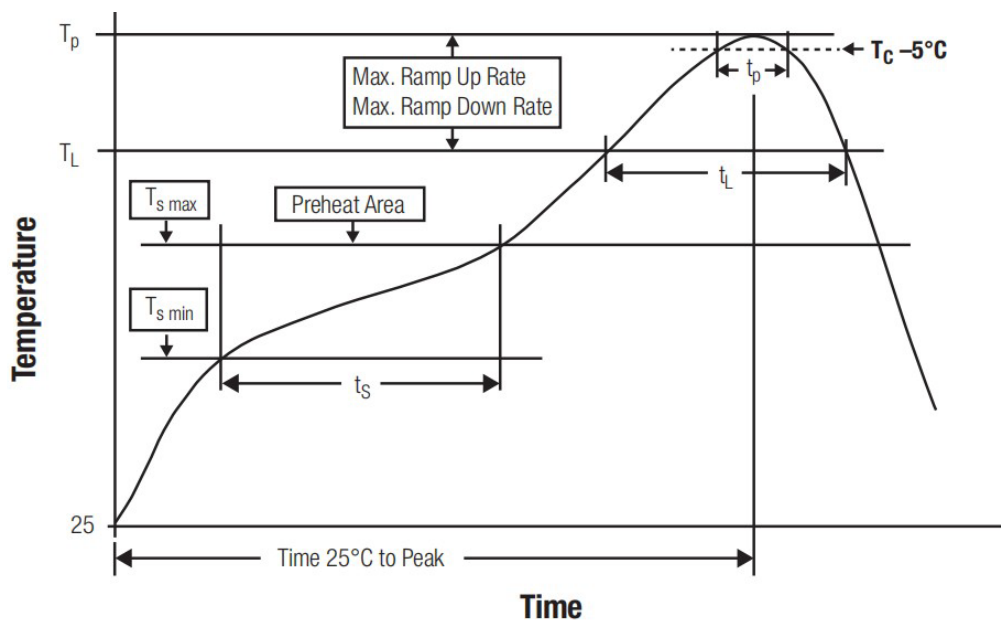
ITRM	W	A0	B0	K0	K1	P	F	E	D0	D1	P0	P2	T
DIM	24.00	15.70	15.25	7.15	--	20.00	11.50	1.75	1.50	--	4.00	2.00	0.40
TOLE	+0.30 -0.30	+0.15 -0.15	+0.15 -0.15	+0.10 -0.10	+0.10 -0.10	+0.10 -0.10	+0.10 -0.10	+0.10 -0.10	+0.10 -0.10	+0.10 -0.00	+0.10 -0.10	+0.15 -0.15	+0.05 -0.05



		✓			
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	$T_{s \min}$	150°C
Preheat Temperature Max	$T_{s \max}$	200°C
Preheat Time t_s from $T_{s \min}$ to $T_{s \max}$	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 mm ³ <350	Volume mm ³ 350-2000	Volume mm ³ >2000
PB-Free Assembly Package Thickness < 1.6 mm	260°C	260°C	260°C
PB-Free Assembly Package Thickness 1.6 mm - 2.5 mm	260°C	250°C	245°C
PB-Free Assembly Package Thickness > 2.5 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-031-IBCE-R	RMR-031	1.9g	Tape & Reel	400pcs
RMR-031-IBCE-CT	RMR-031	1.9g	Moisture Barrier Bag	5pcs

*Marking Code

RMR-031 — Product Code

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