

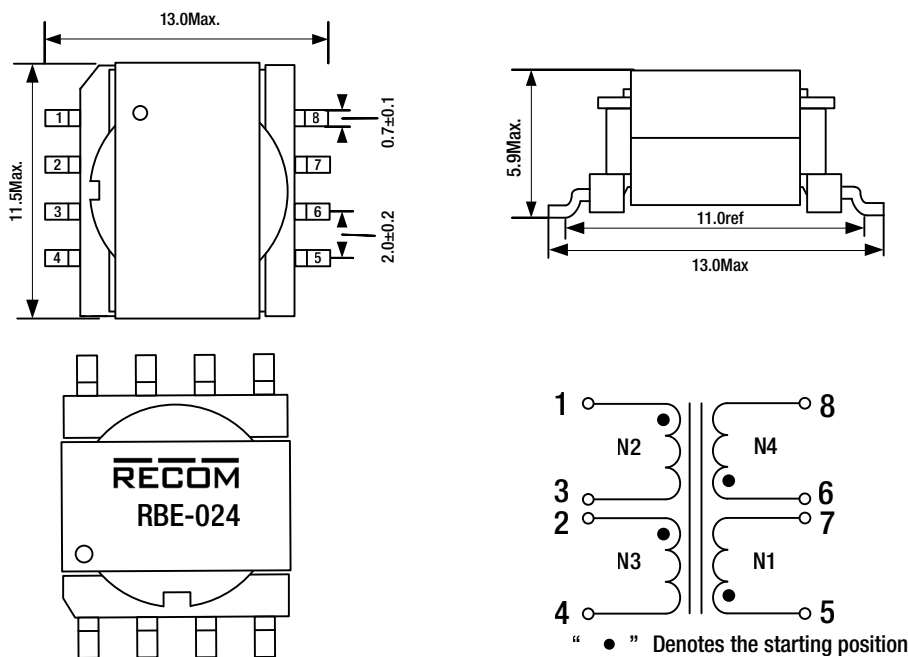
# RBE-024 ◊ Flyback Transformer

10W ◊ SMD ◊ 1.5kVDC Isolation

## FEATURES

- Small-sized isolation transformer
- SMD surface mount installation
- Isolation voltage: 1500VDC/1minute
- Operating temperature: -40~125°C
- Maximum product dimensions: 13.0mm × 11.5mm × 5.9mm

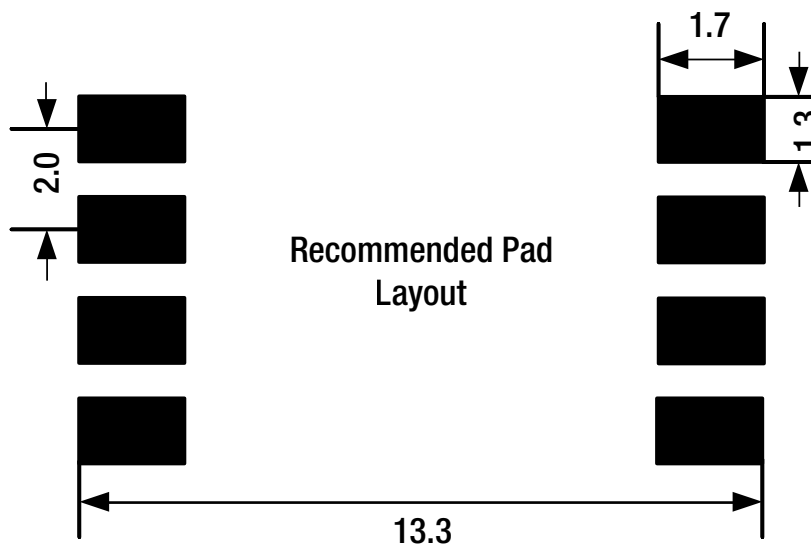
## DIMENSIONS AND SCHEMATIC DIAGRAM [mm]



## PRODUCT MARKING

Pin1	○
Marking	Company Logo
	Product Model

## RECOMMENDED LAND PATTERN [mm]



# RBE-024 ◊ Flyback Transformer

10W ◊ SMD ◊ 1.5kVDC Isolation



**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	1-3	11 typ.	μH
Turns Ratio	n	N1:N2:N3:N4	1:0.71:0.5:1	
DC Resistance 1	R <sub>DC1</sub>	1-3, N2	0.12 max.	Ω
DC Resistance 2	R <sub>DC2</sub>	2-4, N3	0.28 max.	Ω
DC Resistance 3	R <sub>DC3</sub>	5-7, N1	0.29 max.	Ω
DC Resistance 4	R <sub>DC4</sub>	6-8, N4	0.39 max.	Ω
Interwinding Capacitance	C <sub>vw</sub>	1-8	30 max.	pF
Leakage Inductance	L <sub>s</sub>	1-3	0.38 max.	μH
Isolation Test Voltage	V <sub>T</sub>	N2,3:N1,4/60s/1mA	1500	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	Bobbin	E41429
2	Wire	E253843
3	Tape	E165111
4	Glue	E218090

**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 <sub>IN</sub>	18-36	VDC
Output Voltage 1	V <sub>OUT1</sub>	24	VDC
Output Current 1	I <sub>OUT1</sub>	420	mA
Switching Frequency	f <sub>switch</sub>	330	kHz

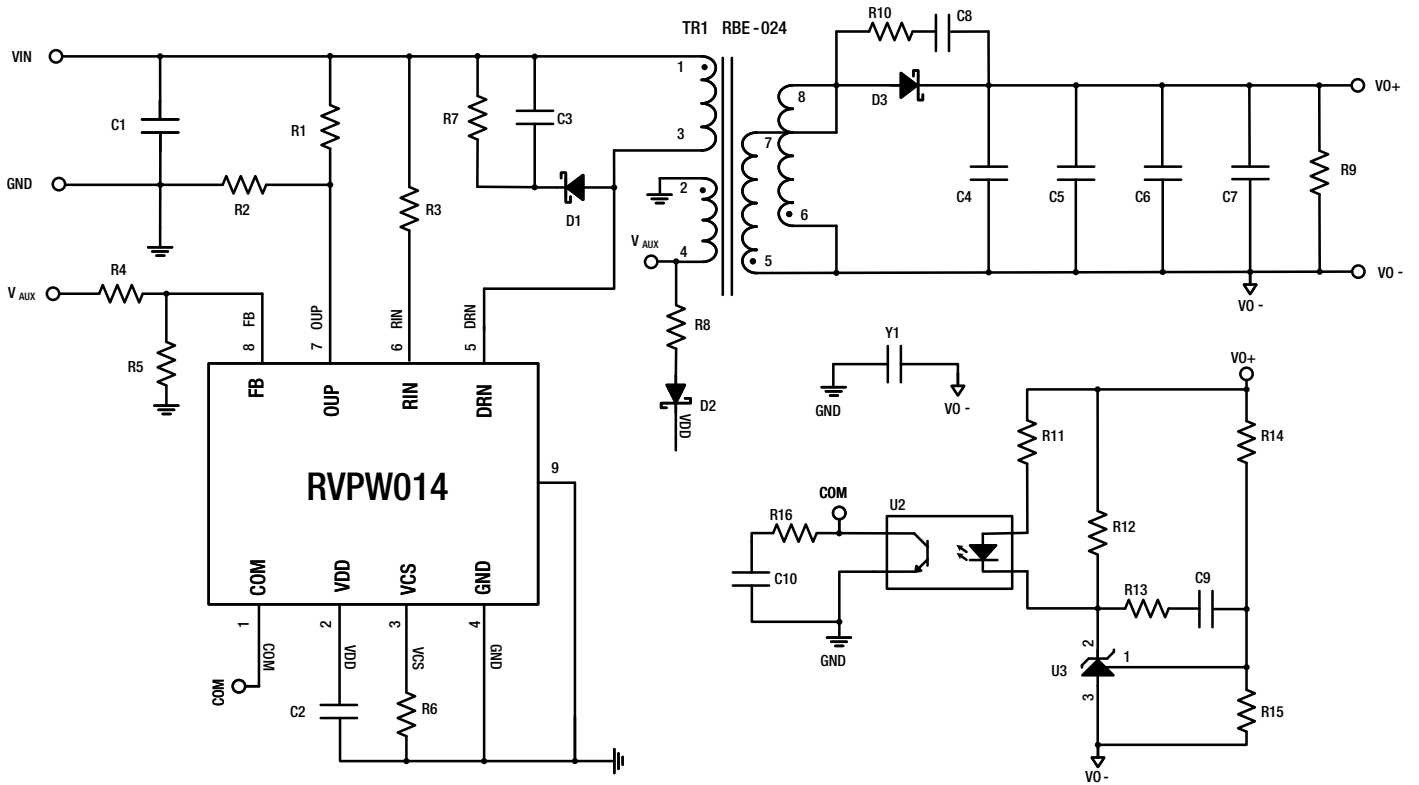
Input: N2

Output 1: N1/N4

Auxiliary: N3

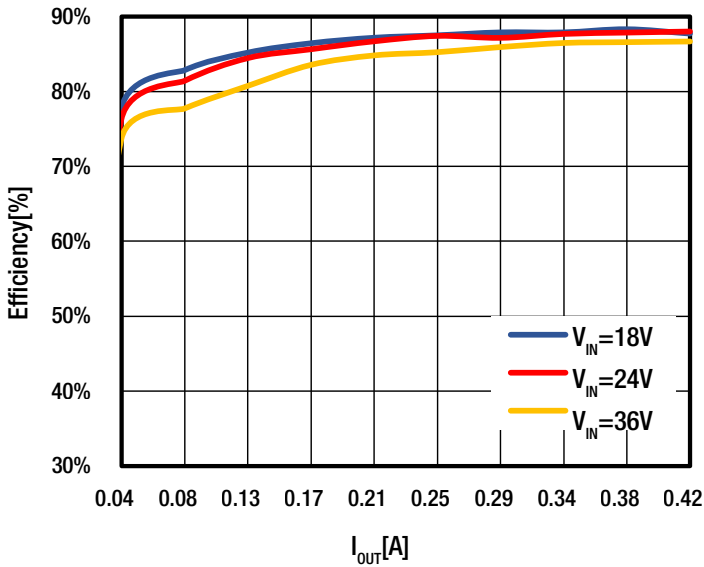
Table and graph show a typical application. Values may vary by application.

### REFERENCE CIRCUIT DIAGRAM

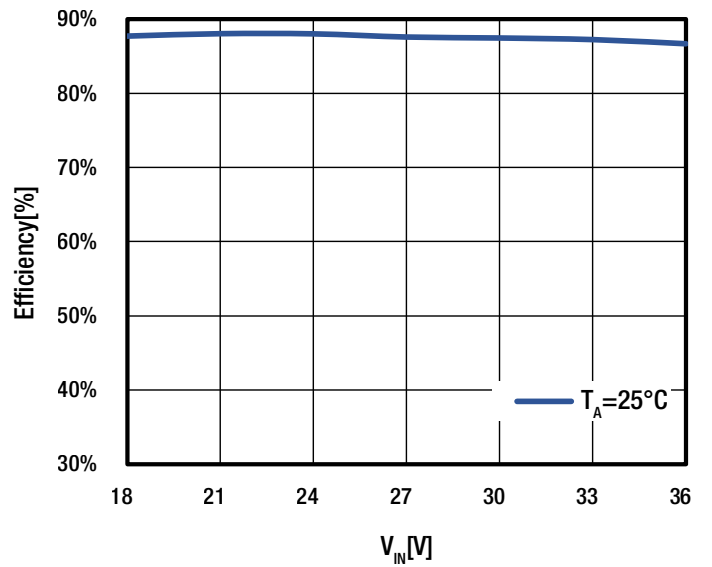


Typical Curve:

Typical Efficiency vs. Output Current



Typical Efficiency vs. Input Voltage

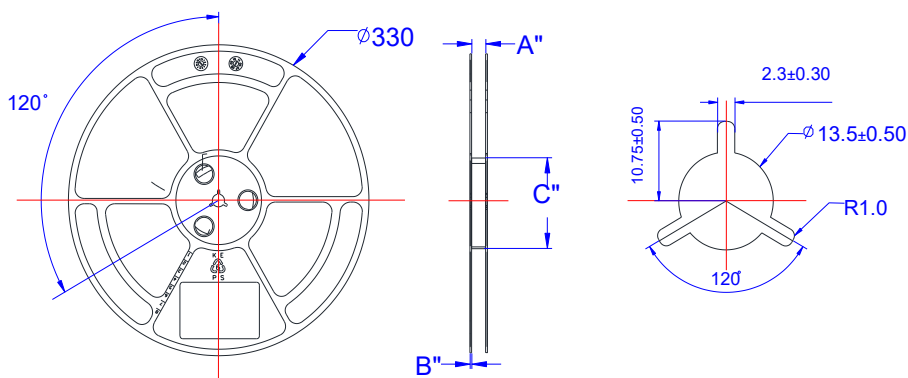
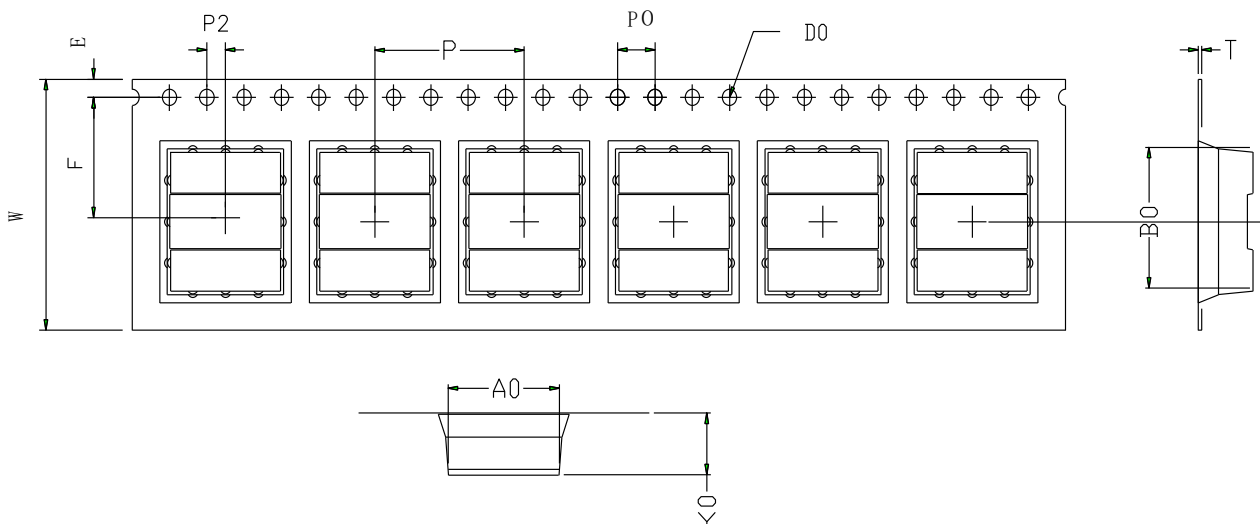


# RBE-024 ◊ Flyback Transformer

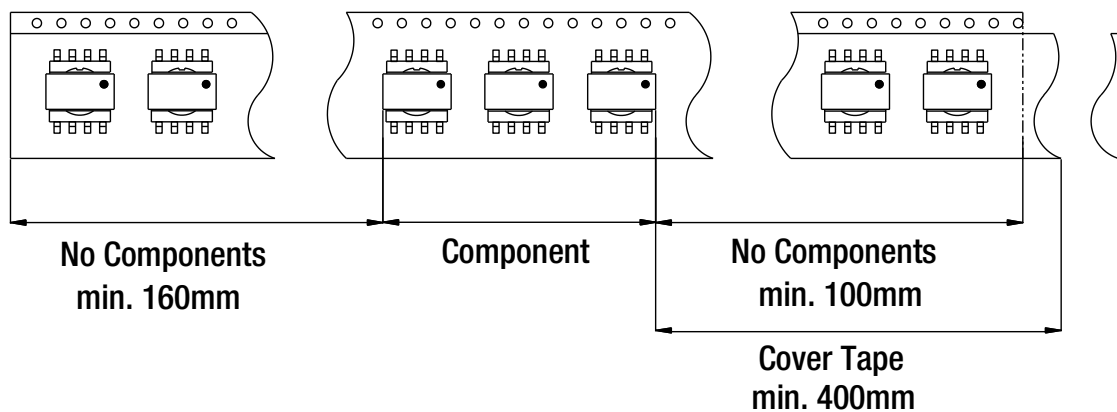
10W ◊ SMD ◊ 1.5kVDC Isolation

## PACKAGING SPECIFICATION - TAPE & REEL [mm]

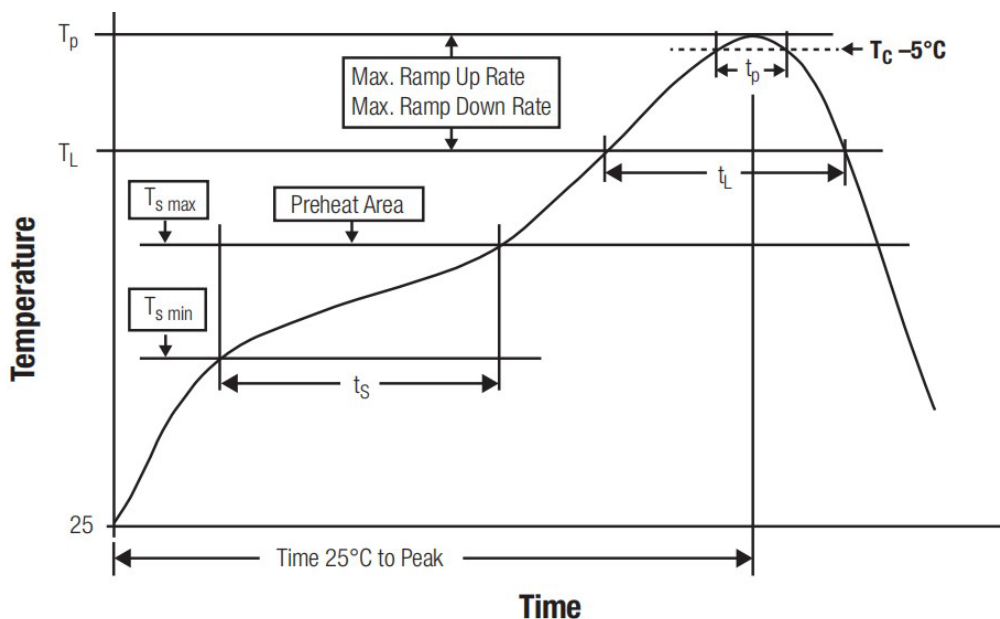
ITRM	W	A0	B0	K0	K1	P	F	E	D0	D1	P0	P2	T
DIM	24.00	11.50	13.10	6.10	--	16.00	11.50	1.75	1.50	--	4.00	2.00	0.40
TOLE	+0.30 -0.30	+0.15 -0.15	+0.15 -0.15	+0.10 -0.10	+0.10 -0.10	+0.10 -0.10	+0.10 -0.10	+0.10 -0.10	+0.10 -0.00	+0.10 -0.00	+0.10 -0.10	+0.15 -0.15	+0.05 -0.05



		✓			
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 (TP to TL)		6°C/second max.
Time 25°C to peak temperature		5 minutes max.
Reflow soldering temperature		Peak Temperature $\leq 245^\circ\text{C}$ (10s)
Reflow Soldering Cycles		Recommended $\leq 2$ 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

# RBE-024 ◊ Flyback Transformer

10W ◊ SMD ◊ 1.5kVDC Isolation



## ORDER INFORMATION

Order Code	Marking Code*	Weight (g/pcs)	Package Type	Quantity (pcs/Reel)
RBE-024-WBBS-R	RBE-024	1.4g	Tape & Reel	500pcs

\*Marking Code

RBE-024—— Product Code

The product information and specifications may be subject to changes even without prior written notice. The product has been designed for various applications; its suitability lies in the responsibility of each customer. The products are not authorized for use in safety-critical applications without RECOM's explicit written consent. A safety-critical application is an application where a failure may reasonably be expected to endanger or cause loss of life, inflict bodily harm or damage property. The applicant shall indemnify and hold harmless RECOM, its affiliated companies and its representatives against any damage claims in connection with the unauthorized use of RECOM products in such safety-critical applications.