

Technical Data Sheet

RBE-023 ♦ Flyback Transformer

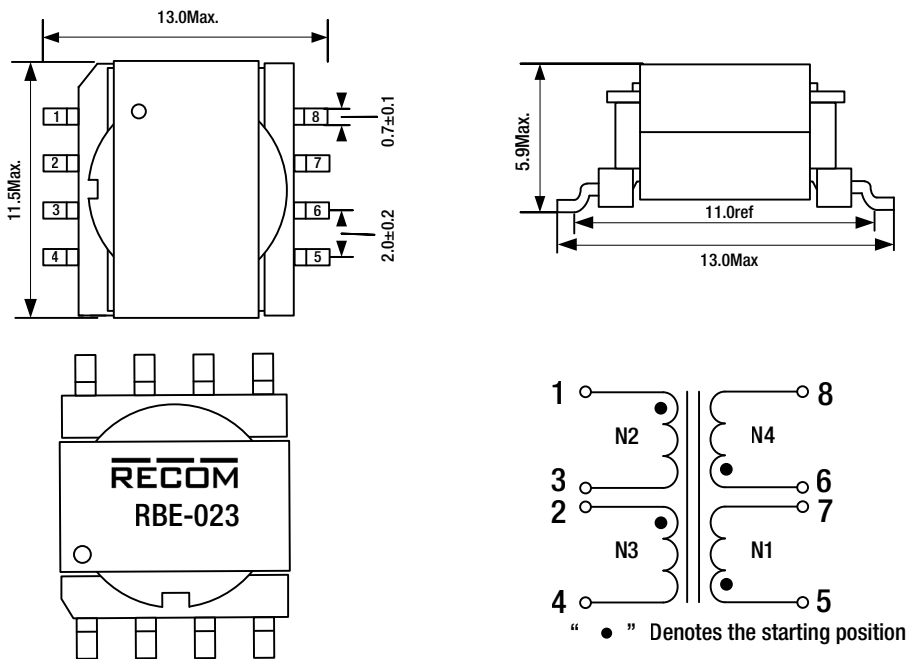
10W ♦ SMD ♦ 1.5kVDC Isolation



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

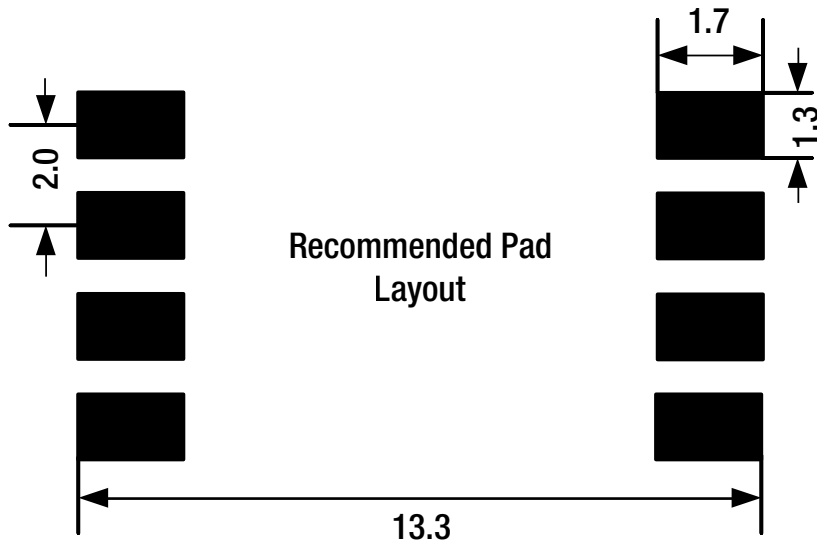
DIMENSIONS AND SCHEMATIC DIAGRAM [mm]



PRODUCT MARKING

Pin1	○
Marking	Company Logo
	Product Model

RECOMMENDED LAND PATTERN [mm]



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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	1-3	11 typ.	μH
Turns Ratio	n	N1:N2:N3:N4	1:1.67:1:1	
DC Resistance 1	R _{DC1}	1-3, N2	0.09 max.	Ω
DC Resistance 2	R _{DC2}	2-4, N3	0.33 max.	Ω
DC Resistance 3	R _{DC3}	5-7, N1	0.065 max.	Ω
DC Resistance 4	R _{DC4}	6-8, N4	0.083 max.	Ω
Interwinding Capacitance	C _{ww}	1-8	30 max.	pF
Leakage Inductance	L _s	1-3	0.38 max.	μH
Isolation Test Voltage	V _T	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 _{IN}	18-36	VDC
Output Voltage 1	V _{OUT1}	5	VDC
Output Current 1	I _{OUT1}	2000	mA
Switching Frequency	f _{switch}	330	kHz

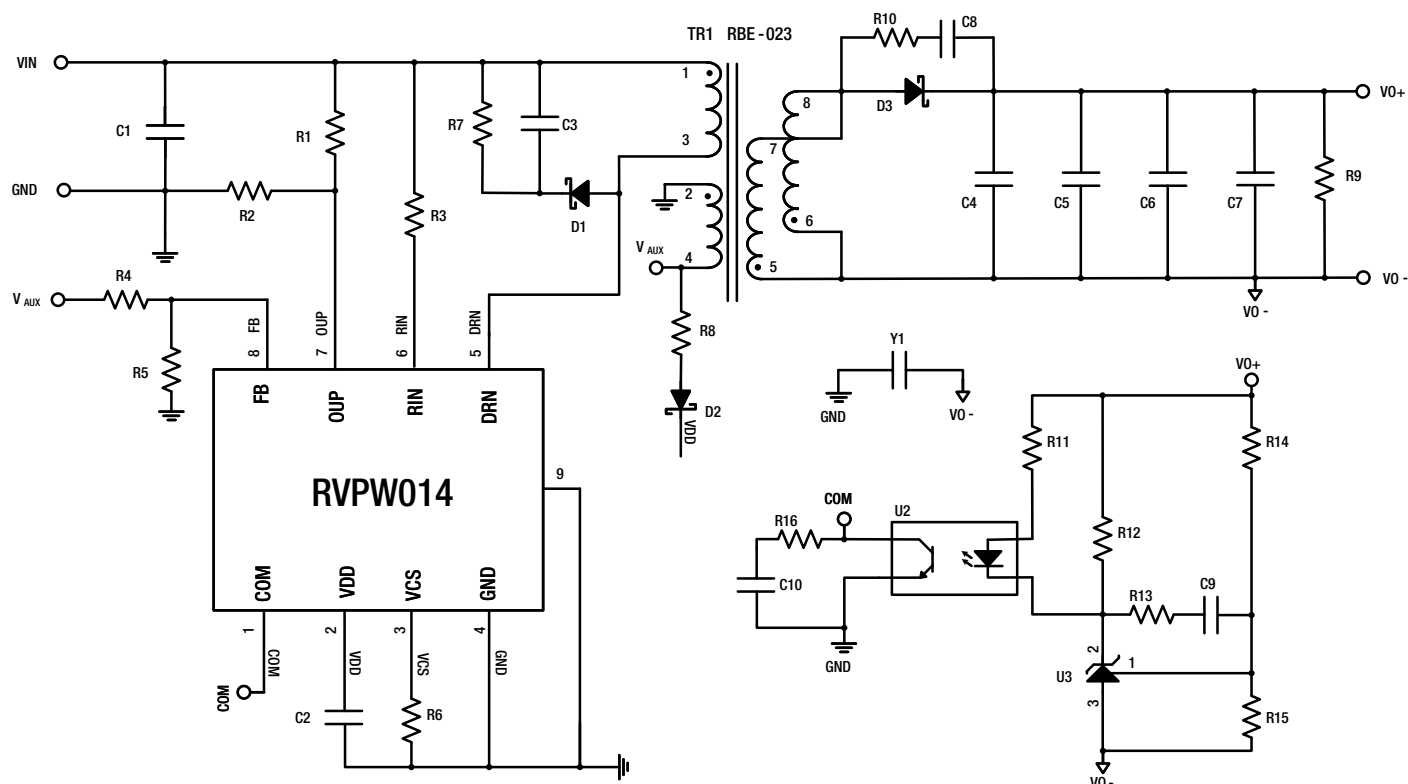
Input: N2

Output 1: N1/N4

Auxiliary: N3

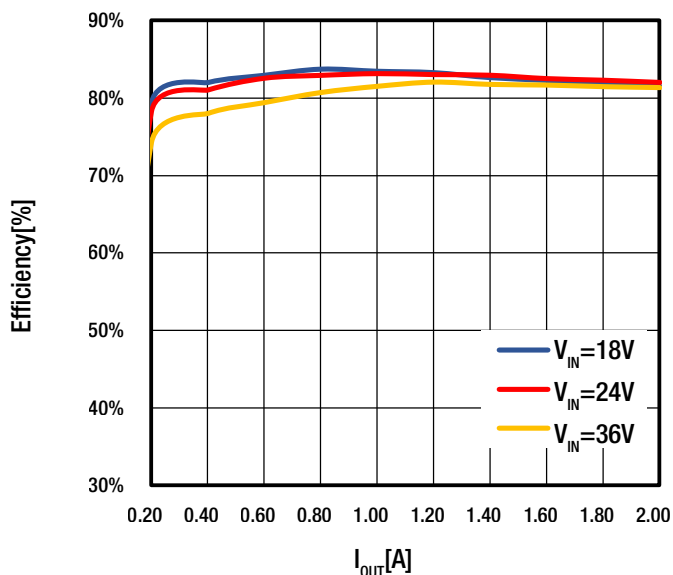
Table and graph show a typical application. Values may vary by application.

REFERENCE CIRCUIT DIAGRAM

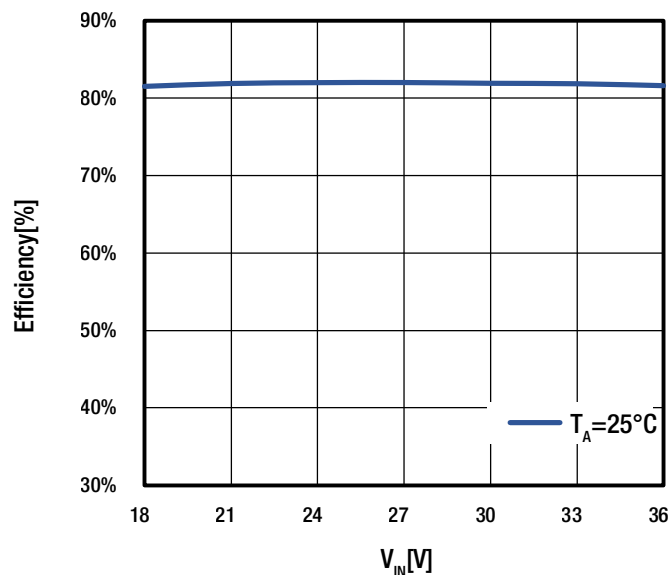


Typical Curve:

Typical Efficiency vs. Output Current



Typical Efficiency vs. Input Voltage

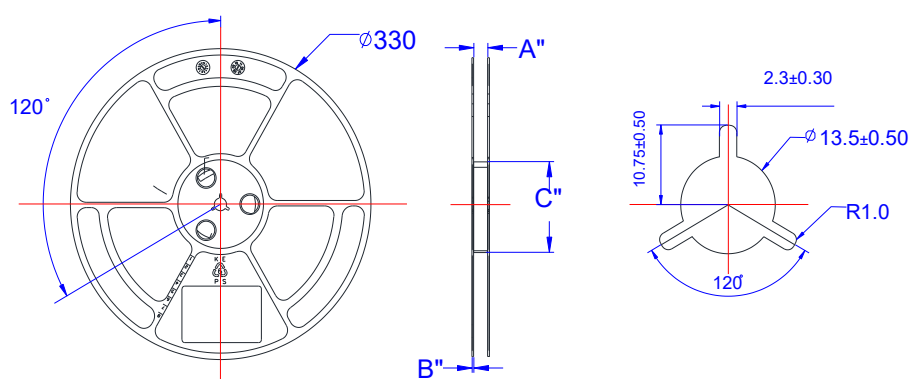
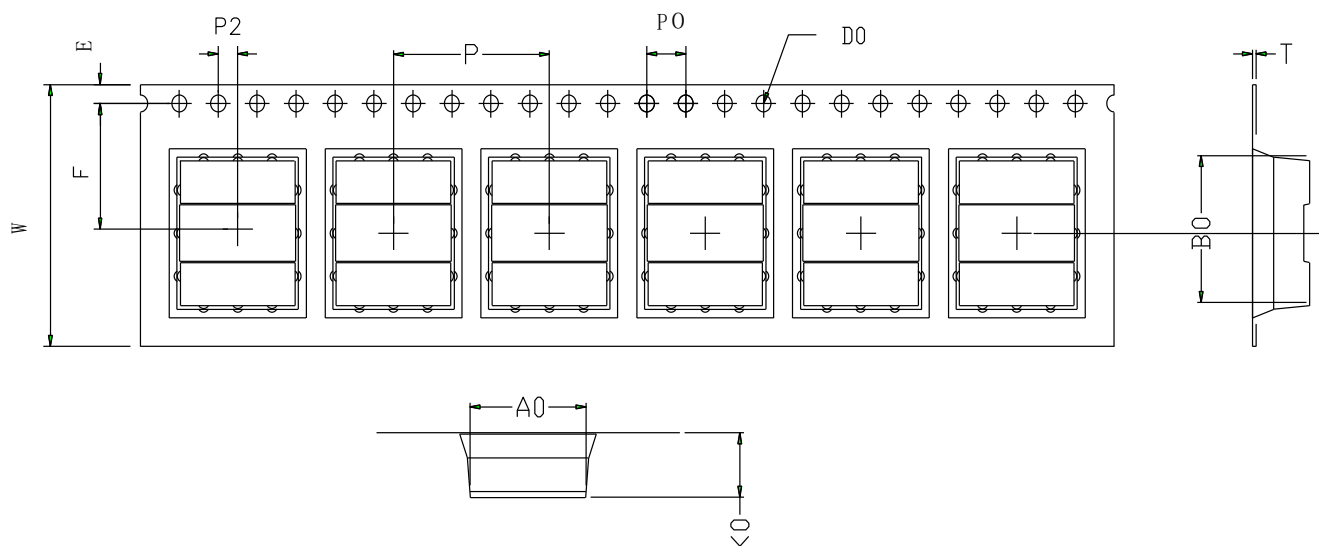


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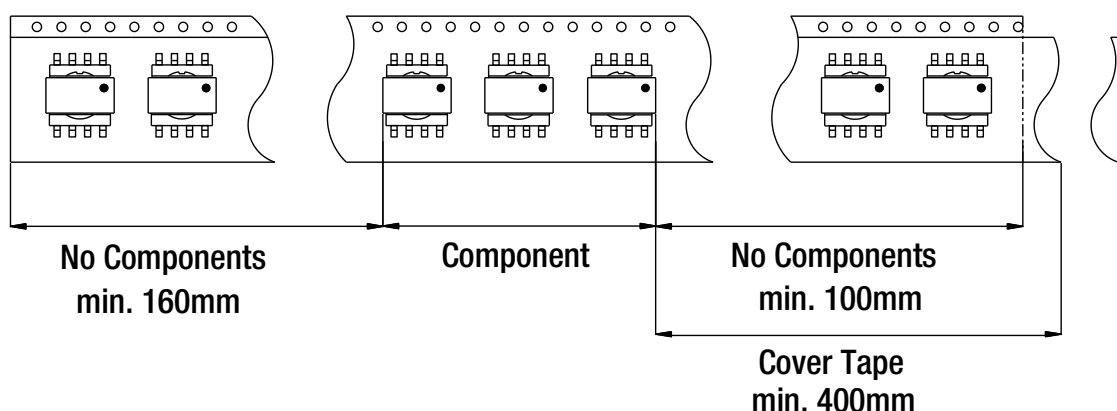
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PACKAGING SPECIFICATION - TAPE & REEL [mm]

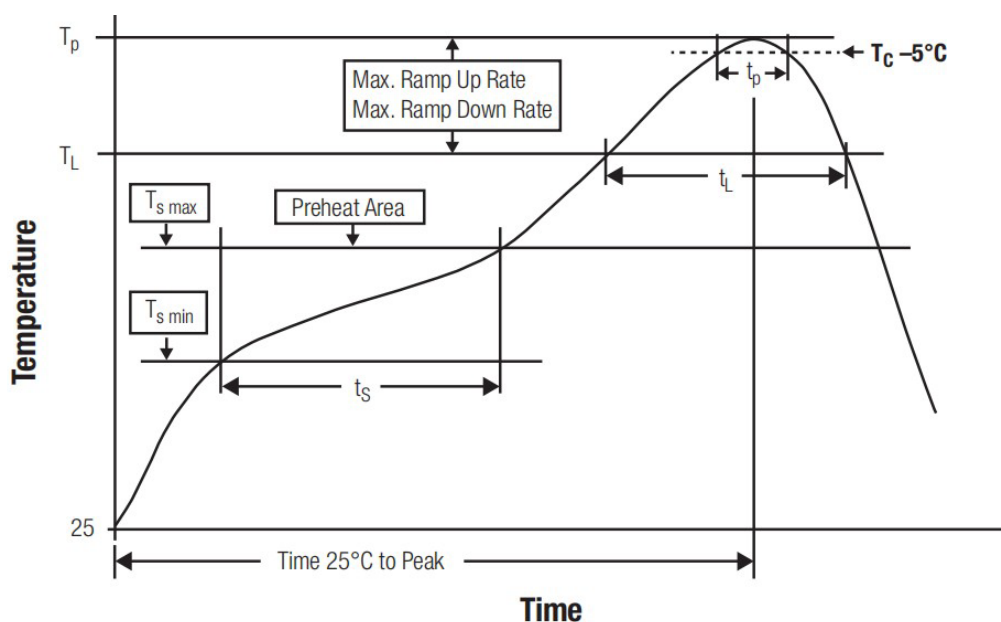
ITRM	W	A0	B0	K0	K1	P	F	E	D0	D1	P0	P2	T
DIM	24.00	11.50	13.10	6.10	--	16.00	11.50	1.75	1.50	--	4.00	2.00	0.40
TOLE	+0.30 -0.30	+0.15 -0.15	+0.15 -0.15	+0.10 -0.10	+0.10 -0.10	+0.10 -0.10	+0.10 -0.10	+0.10 -0.10	+0.10 -0.00	+0.10 -0.00	+0.10 -0.10	+0.15 -0.15	+0.05 -0.05



		✓			
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	$T_{s\ min}$	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 $\leq 245^\circ C$ (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)
RBE-023-WB5S-R	RBE-023	1.3g	Tape & Reel	500pcs
RBE-023-WB5S-CT	RBE-023	1.3g	Moisture Barrier Bag	5pcs

*Marking Code

RBE-023—— Product Code

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