Technical Data Sheet

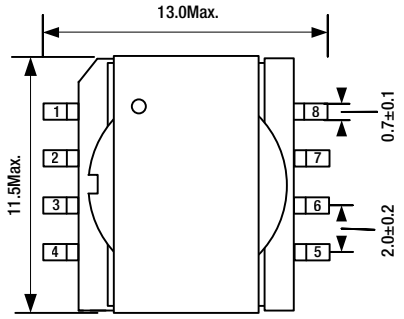
RBE-023 ◊ Flyback Transformer

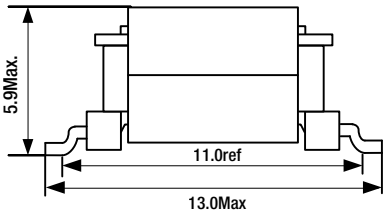
10W ◊ SMD ◊ 1.5kVDC Isolation

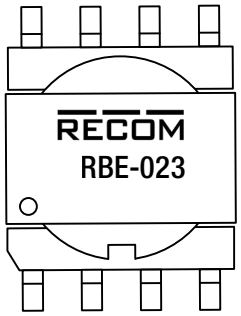
FEATURES

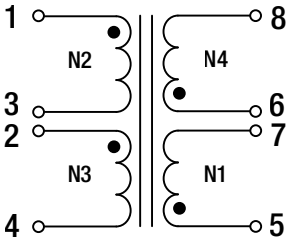
- Small-sized isolation transformer
- SMD surface mount installation
- Isolation voltage: 1500VDC/1minute
- Operating temperature: -40~125°C
- Maximum product dimensions: 13.0mm × 11.5mm × 5.9mm

DIMENSIONS AND SCHEMATIC DIAGRAM [mm]







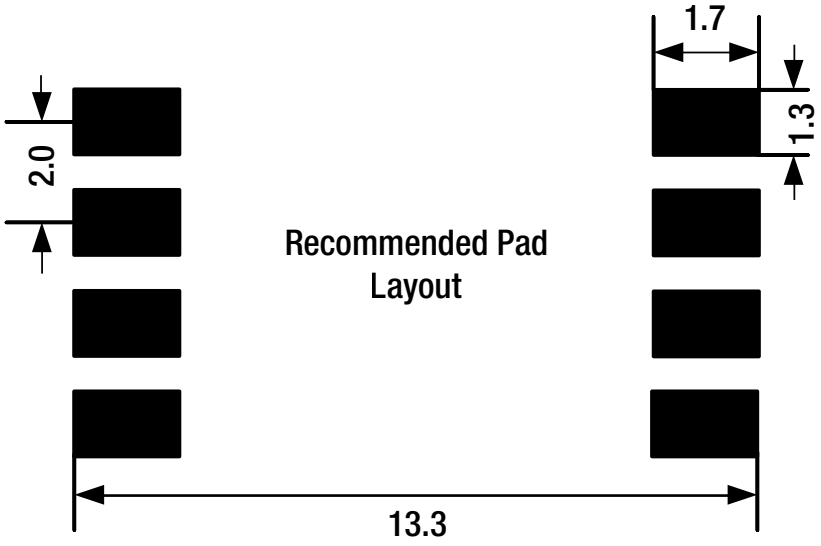


“ ● ” Denotes the starting position

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.

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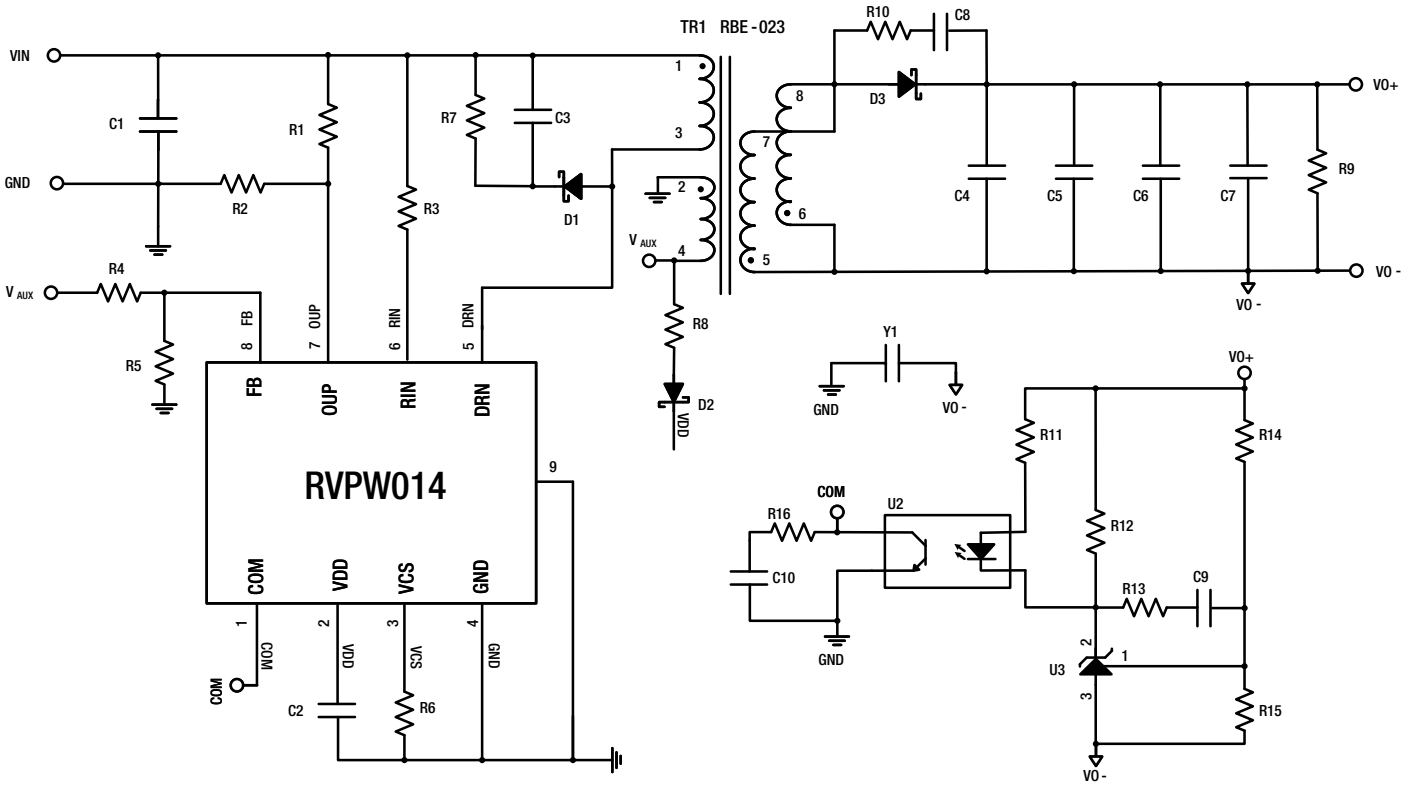
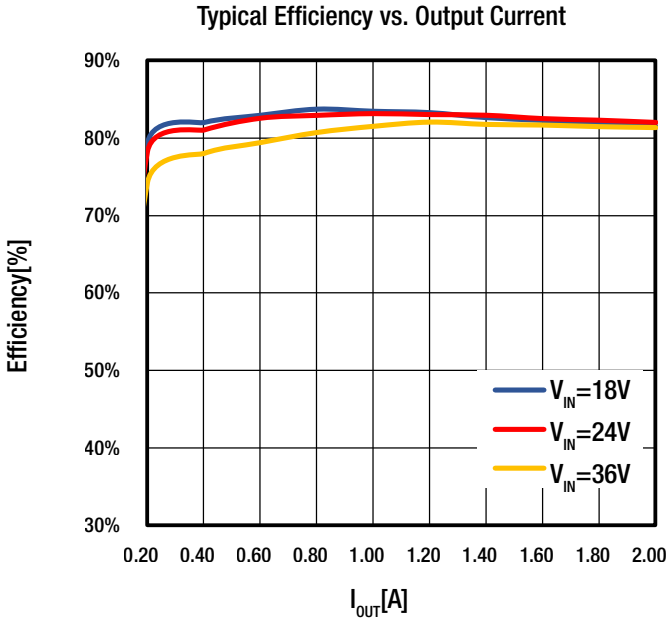
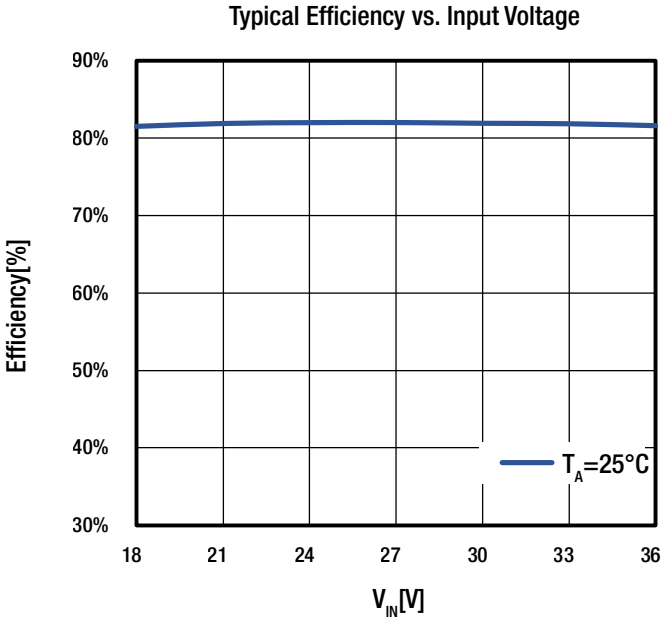
REFERENCE CIRCUIT DIAGRAM



Typical Curve:





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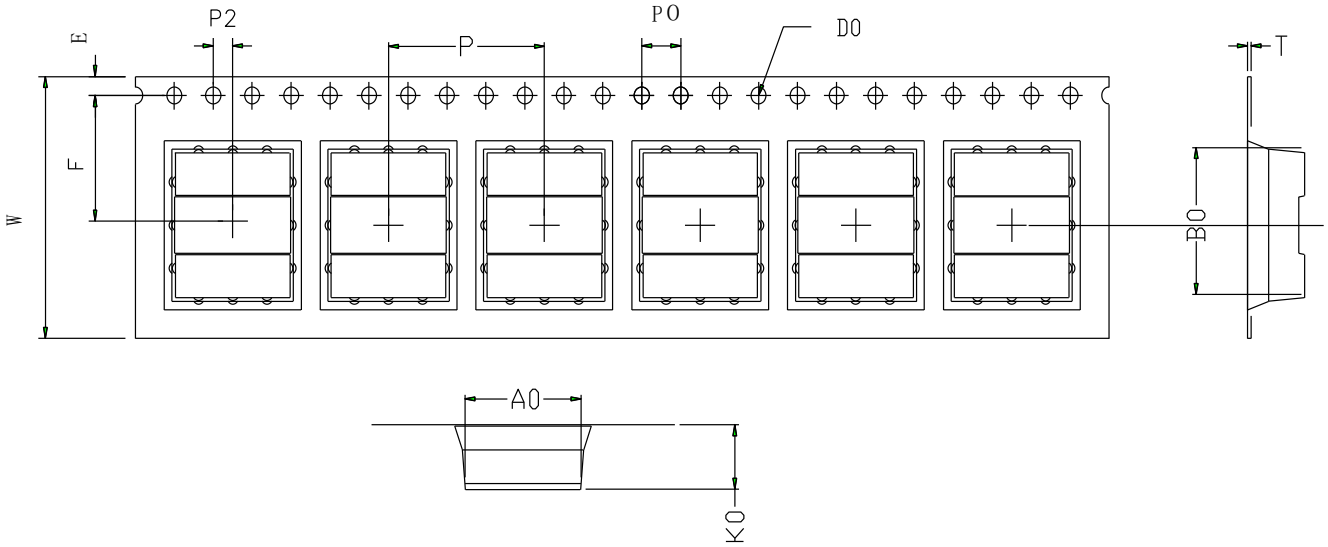
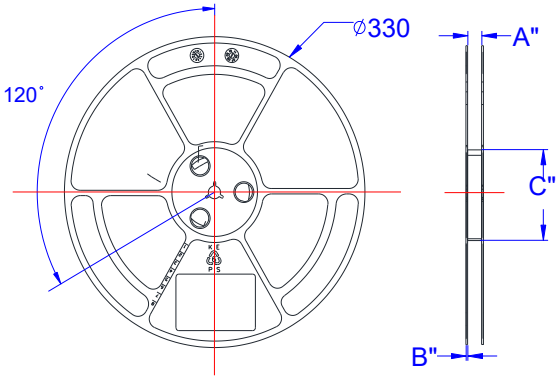
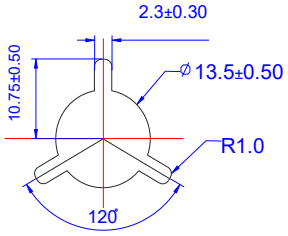
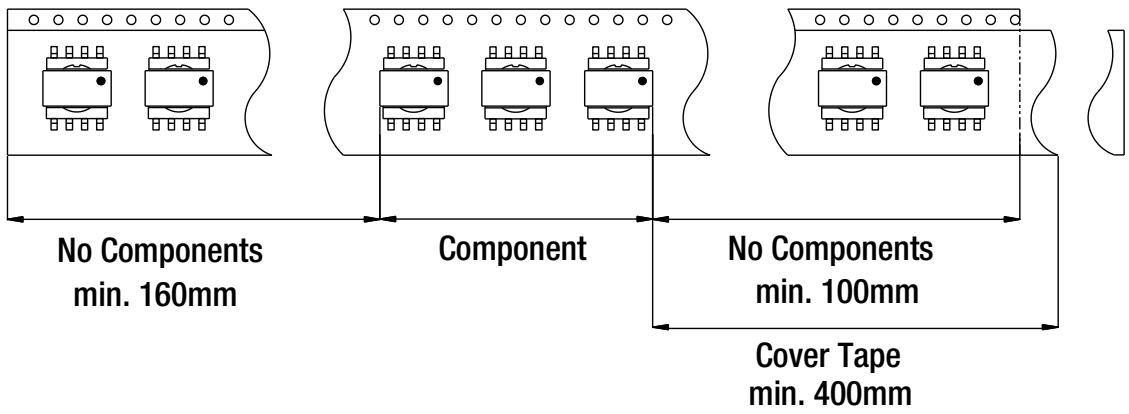
PACKAGING SPECIFICATION - TAPE & REEL [mm]													
ITRM	W	A0	B0	K0	K1	P	F	E	D0	D1	P0	P2	T
DIM	24.00	11.50	13.10	6.10	--	16.00	11.50	1.75	1.50	--	4.00	2.00	0.40
TOLE	+0.30 -0.30	+0.15 -0.15	+0.15 -0.15	+0.10 -0.10	+0.10 -0.10	+0.10 -0.10	+0.10 -0.10	+0.10 -0.10	+0.10 -0.00	+0.10 -0.00	+0.10 -0.10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



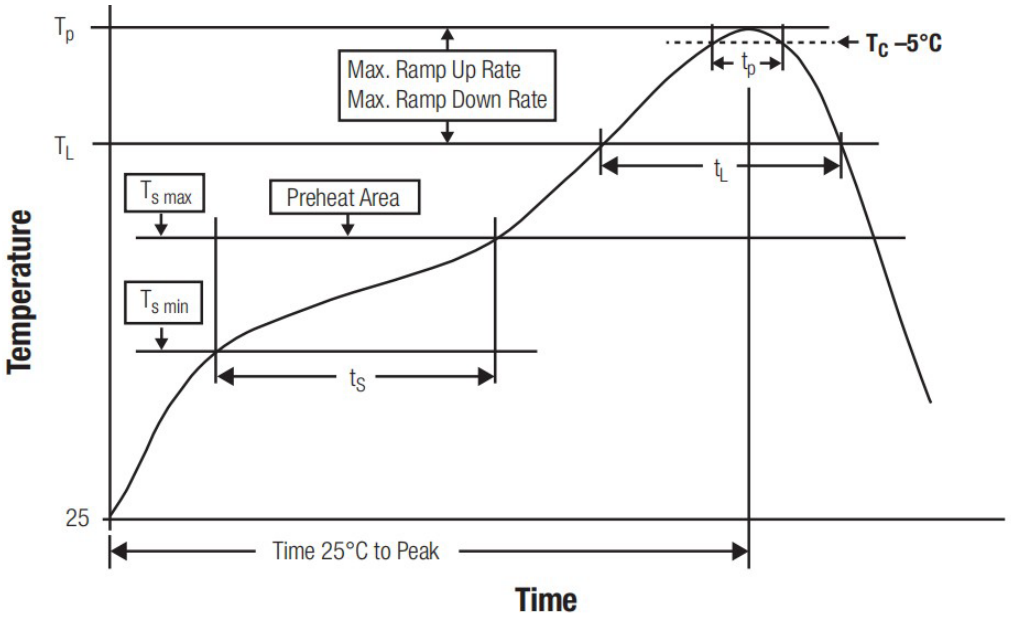




		✓			
SPEC	16	24	32	44	56
DIM A" ± 0.5	16.5	24.5	32.5	44.5	56.5
DIM B" ± 0.3	2.10	2.10	2.10	2.10	2.10
DIM C" ± 0.5	100	100	100	100	100



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 ≤245°C (10s)
Reflow Soldering Cycles		Recommended ≤ 2 Cycles

Refer to IPC/JEDEC J-STD-020F

PACKAGE CLASSIFICATION REFLOW TEMPERATURE (T_C)

Properties	Volume mm³ <350	Volume mm³ 350-2000	Volume mm³ >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

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

*Marking Code
RBE-023—— Product Code