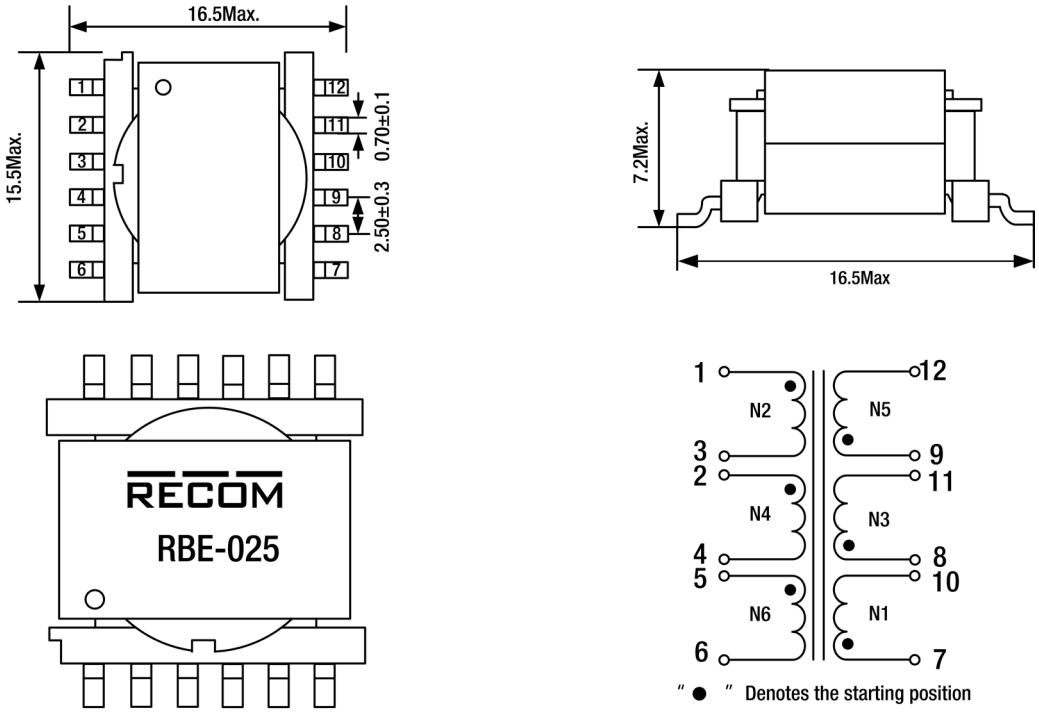
RBE-025

Flyback Isolation Transformer

PRODUCT FEATURES

- Small-Sized Isolation Transformer
- SMD Surface Mount Installation
- Isolation Voltage: 1500VDC
- Storage Temperature: -40~125°C
- Operating Temperature (Ambient Temperature + Temperature Rise): -40~125°C
- Reflow Soldering Temperature: Peak Temperature ≤245°C (10s)
- Reflow Soldering Cycles: Recommended ≤ 2 Cycles
- Maximum Product Dimensions (MAX): 16.50mm × 15.5mm × 7.2mm

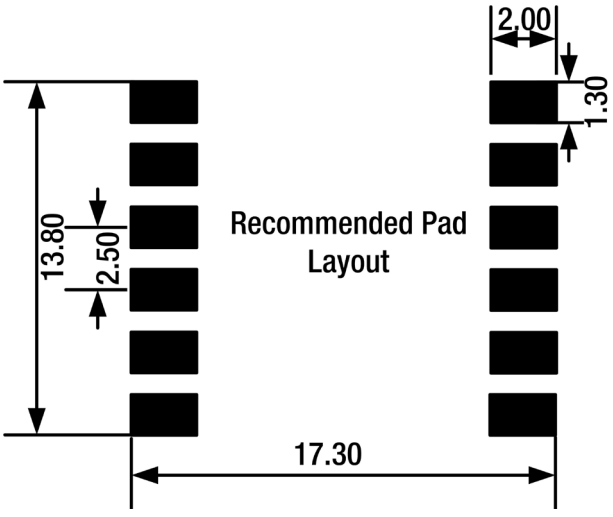
DIMENSIONS AND SCHEMATIC DIAGRAM [mm]



PRODUCT MARKING

Pin1	◯
Marking	Company Logo
	Product Model

RECOMMENDED LAND PATTERN [mm]



ELECTRICAL PROPERTIES

Properties		Test Conditions	Value	Unit	Tol.
Inductance	L	1-3	6.86	µH	Typ.
Turns Ratio	n	N1:N2:N3:N4:N5:N6	1:1.75:1:1.75:1:2.25		
DC Resistance 1	R_{DC1}	1-3	0.060	Ω	Max
DC Resistance 2	R_{DC2}	2-4	0.075	Ω	Max
DC Resistance 3	R_{DC3}	5-6	0.52	Ω	Max
DC Resistance 4	R_{DC4}	7-10	0.035	Ω	Max
DC Resistance 5	R_{DC5}	8-11	0.040	Ω	Max
DC Resistance 6	R_{DC6}	9-12	0.045	Ω	Max
Interwinding Capacitance	C_{ww}	1-8	30	pF	Max
Leakage Inductance	L_S	1-3	0.5	uH	Max
Insulation Test Voltage	V_T	N2,4,6 : N1,3,5/60s/1mA	1500	V(DC)	1min.

GENERAL INFORMATION

Operating Temperature	-40~125°C
Storage Conditions (in original packaging)	<40°C/<75%RH
Moisture Sensitivity Level (MSL)	1
Electrical Specifications @ 25°C unless otherwise noted	

MATERIAL CERTIFICATION

ITEM		UL NO
1	BOBBIN	E41429
2	WIRE	E253843
3	TAPE	E165111
4	GLUE	E218090

CERTIFICATION

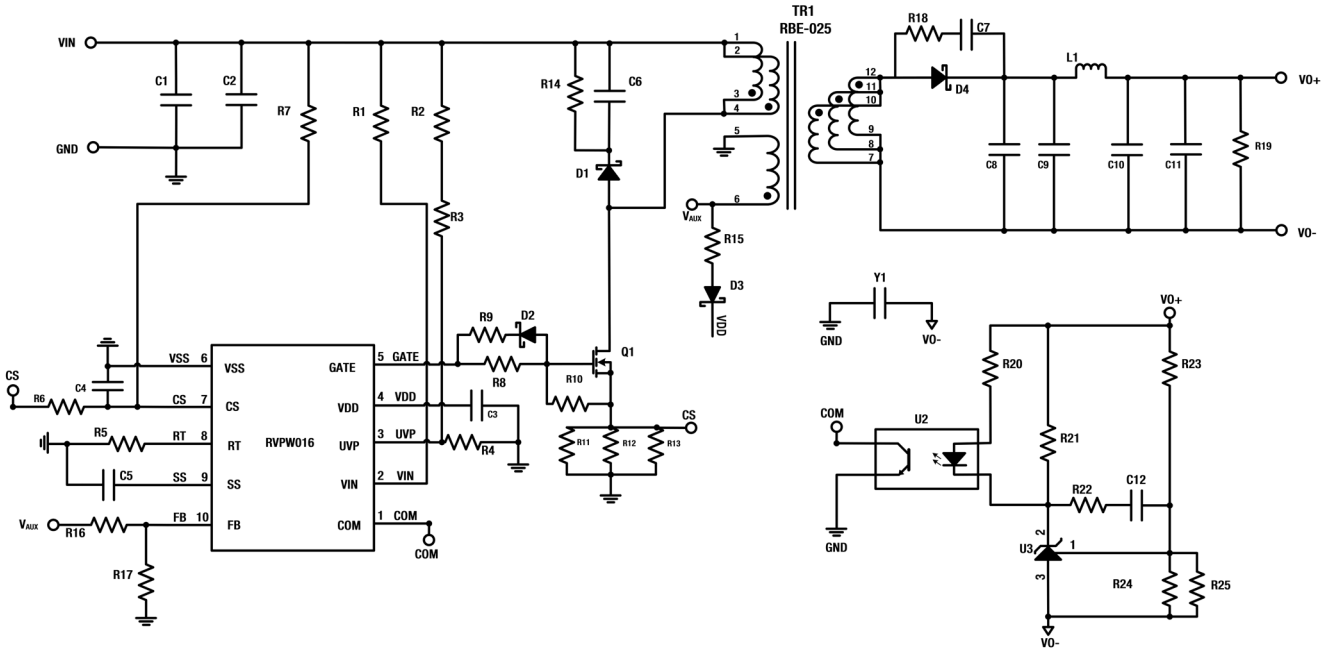
RoHS Approval	Compliant [2011/65/EU&2015/863]
REACH Approval	Conform or declared [(EC)1907/2006]
Halogen Free	Conform [EN 14582:2016]

TYPICAL APPLICATION

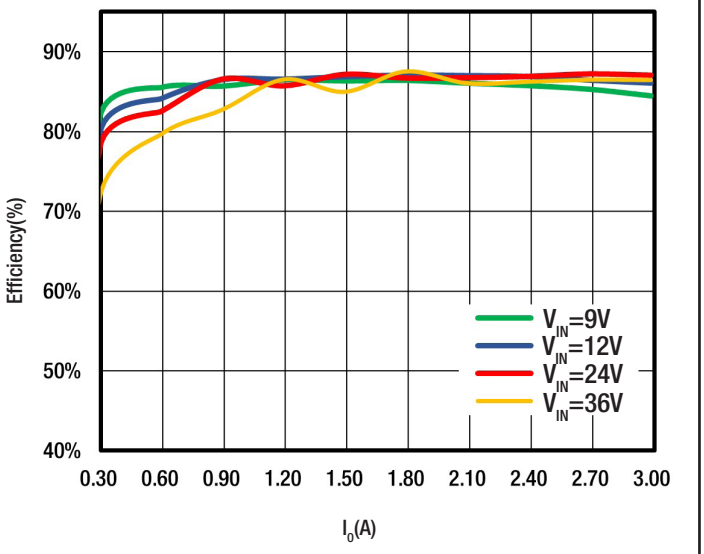
Input Voltage	V_{IN}	9-36	V(DC)
Output Voltage 1	V_{OUT1}	5	V(DC)
Output Current 1	I_{OUT1}	3000	mA
Switching Frequency	f_{switch}	330	kHz

Input: N2/N4
Output 1: N1/N3/N5
Table and graph show a typical application. Values may vary by application.

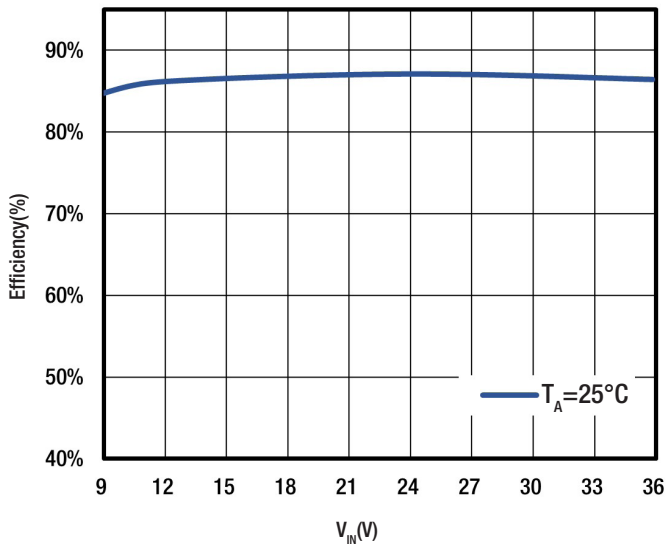
REFERENCE CIRCUIT DIAGRAM



Typical Curve:



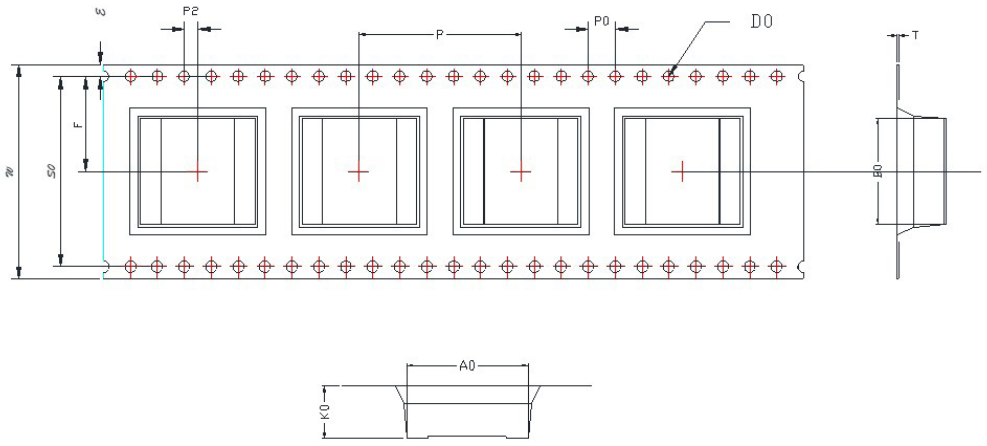
Typical Efficiency vs. Output Current Curve



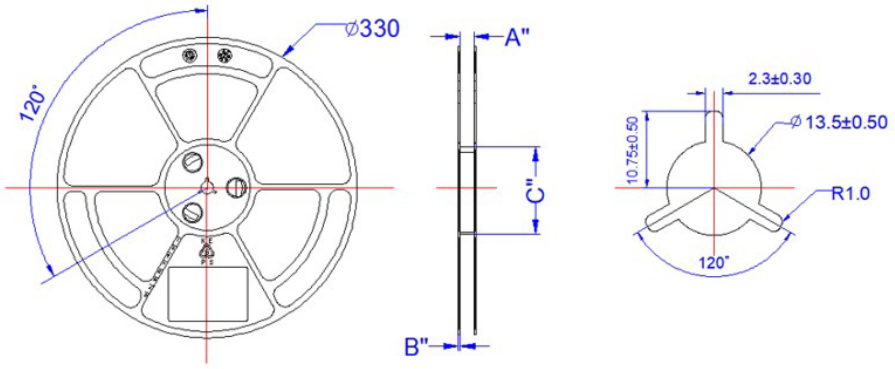
Typical Efficiency vs. Input Voltage

PACKAGING SPECIFICATION - TAPE [mm]

ITRM	W	A0	B0	K0	K1	P	F	E	S0	D0	P0	P2	T
DIM	32.00	--	--	7.40	--	24.00	14.20	1.75	28.40	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

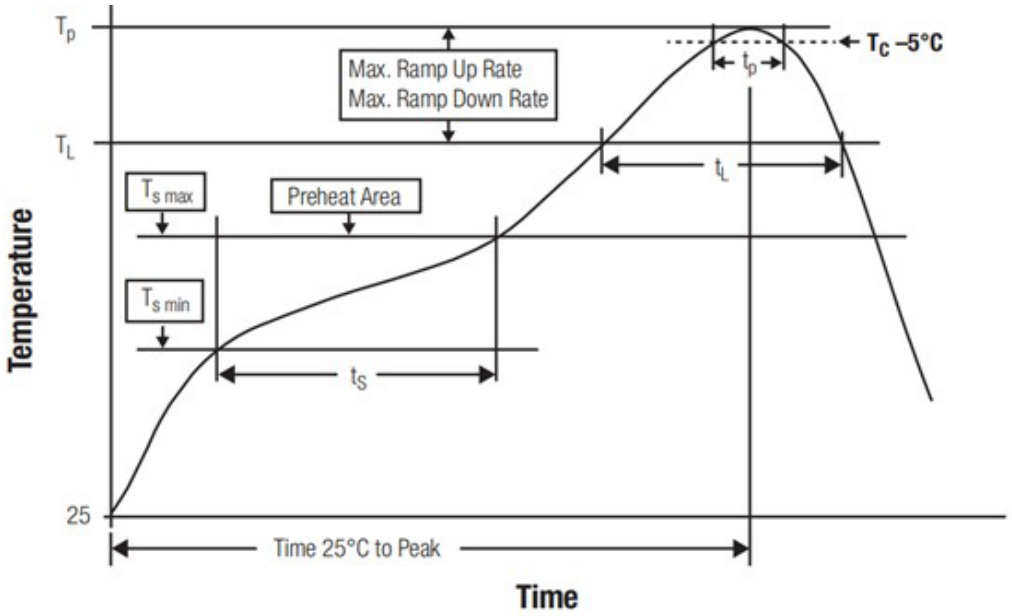


Reel [mm]



			✓		
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

CLASSIFICATION REFLOW PROFILE FOR SMT COMPONENTS



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 (TP to TL)		6°C/second max.
Time 25°C to peak temperature		5 minutes max.

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 I Package Thickness < 1.6 mm	260 °C	260 °C	260 °C
PB-Free Assembly I Package Thickness 1.6 mm - 2.5 mm	260 °C	250 °C	245 °C
PB-Free Assembly I 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-025-UB5S-R	RBE-025	3.01g	Tape & Reel	300pcs

*Marking Code
RBE025—— Product Code