Technical Data Sheet

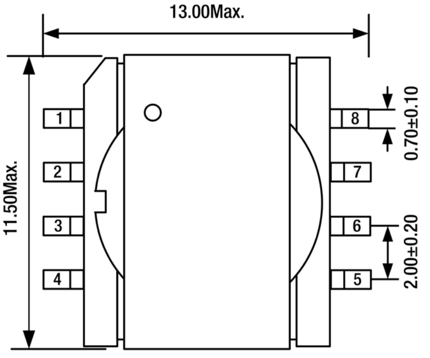
RBE-029

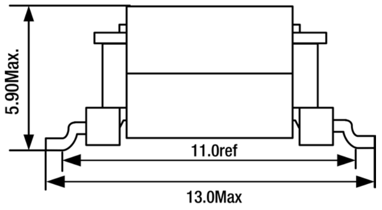
Flyback Isolation Transformer

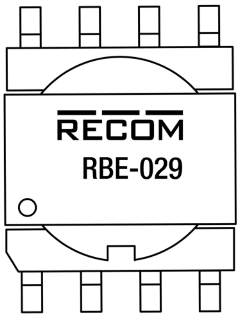
PRODUCT FEATURES

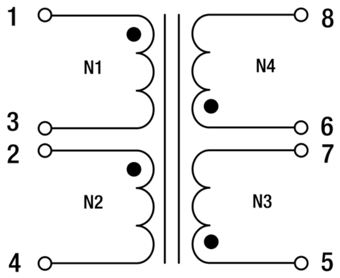
- Small-Sized Isolation Transformer
- SMD Surface Mount Installation
- Isolation Voltage: 1500VDC/1minute
- Storage Temperature: -40~125°C
- Operating Temperature (Ambient Temperature + Temperature Rise): -40~125°C
- Reflow Soldering Temperature: Peak Temperature ≤245°C (10s)
- Number of Reflow Soldering Cycles: Recommended not exceed 2 times
- Maximum Product Volume (MAX): 13.0mm × 11.5mm × 5.9mm

DIMENSIONS AND SCHEMATIC DIAGRAM [mm]







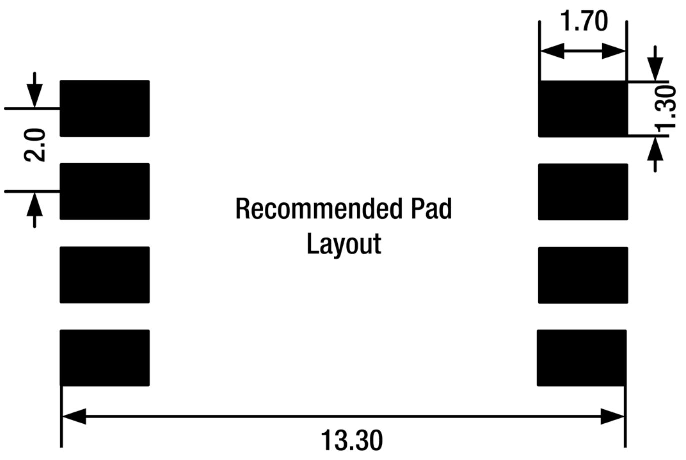


" ● " Denotes the starting position

PRODUCT MARKING

Pin1	○
Marking	Company Logo
	Product Model

RECOMMENDED LAND PATTERN [mm]



ELECTRICAL PROPERTIES

Properties		Test Conditions	Value	Unit	Tol.
Inductance	L	1-3	7.04	µH	Typ
Turns Ratio	n	N1:N2:N3:N4	1:1.25:1.5:1.5		
DC Resistance 1	R_{DC1}	1-3	0.09	Ω	Max
DC Resistance 2	R_{DC2}	2-4	0.63	Ω	Max
DC Resistance 3	R_{DC3}	5-7	0.20	Ω	Max
DC Resistance 4	R_{DC4}	6-8	0.21	Ω	Max
Leakage Inductance	L_S	1-3	0.25	uH	Max
Insulation Test Voltage	V_T	N1,2 : N3,4/60s/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

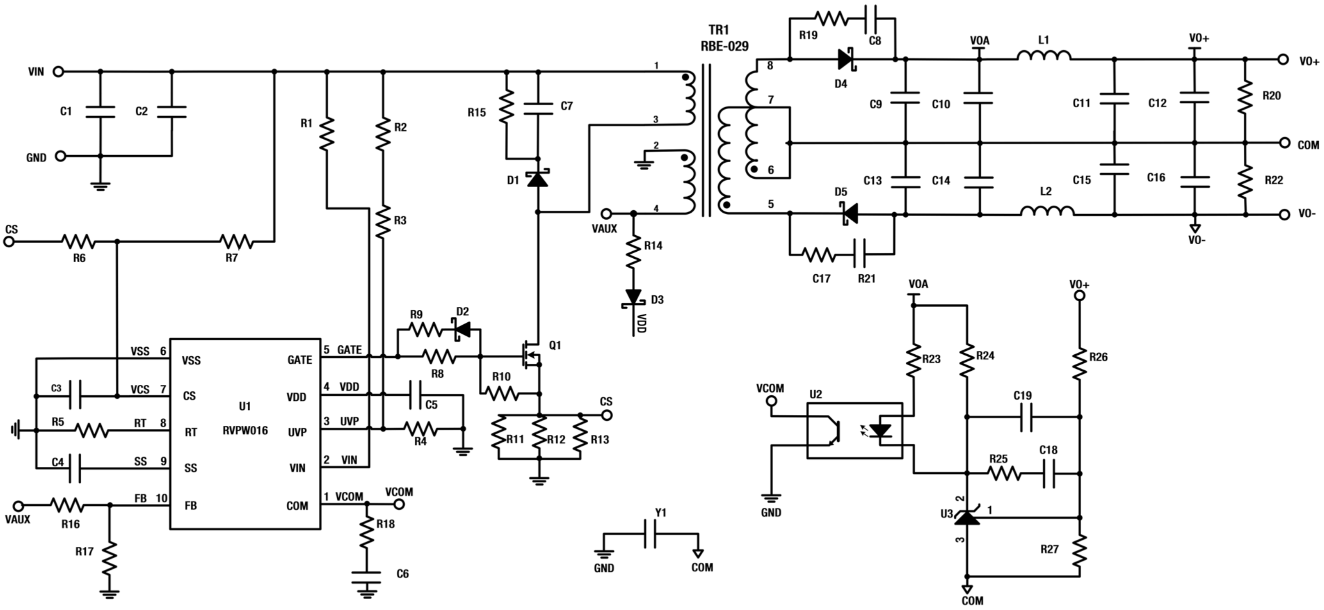
RoHS Approval	Compliant [2011/65/EU&2015/863]
REACH Approval	Conform or declared [(EC)1907/2006]
Halogen Free	Conform [EN 14582:2016]

TYPICAL APPLICATION

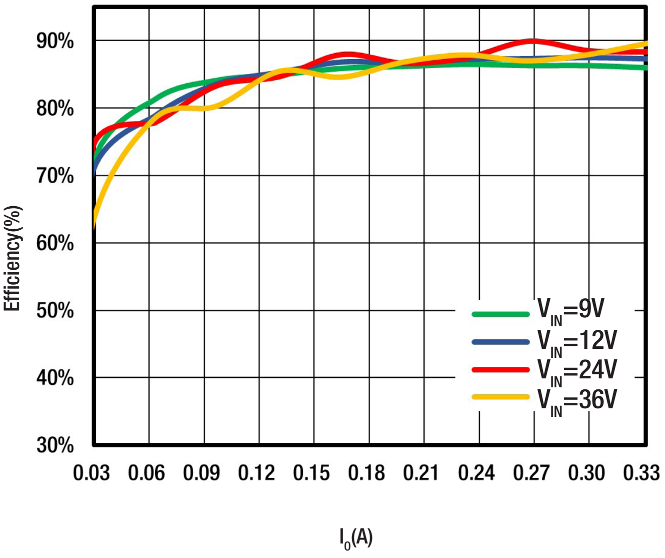
Input Voltage	V_{IN}	9-36	V(DC)
Output Voltage 1	V_{OUT1}	15	V(DC)
Output Current 1	I_{OUT1}	340	mA
Output Voltage 2	V_{OUT2}	-15	V(DC)
Output Current 2	I_{OUT2}	-340	mA
Switching Frequency	f_{switch}	330	kHz

Input: N1
Output 1: N4
Output 2: N3
Table and graph show a typical application. Values may vary by application.

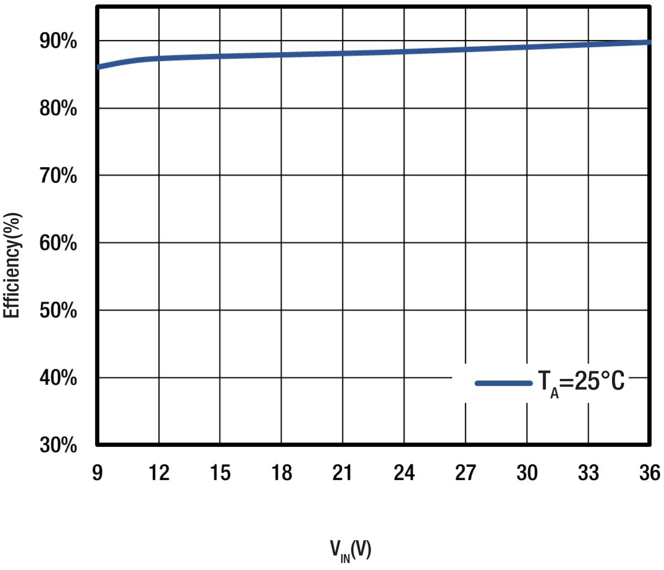
REFERENCE CIRCUIT DIAGRAM



Typical Curve:



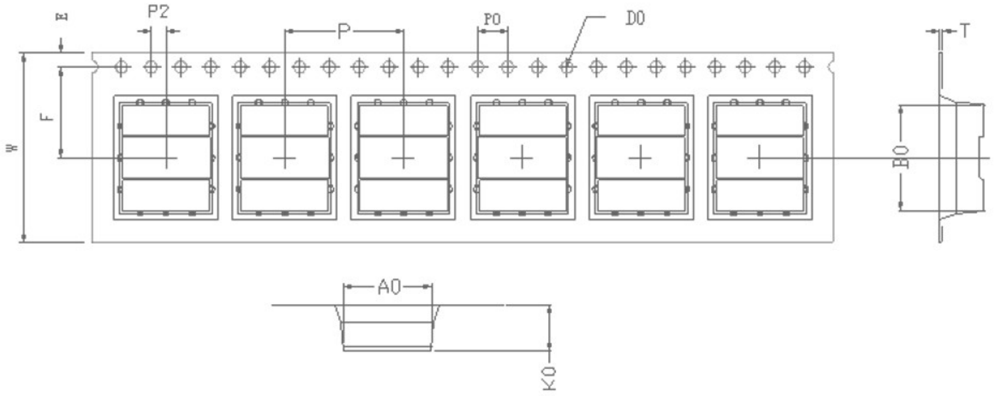
Typical Efficiency vs. Output Current Curve



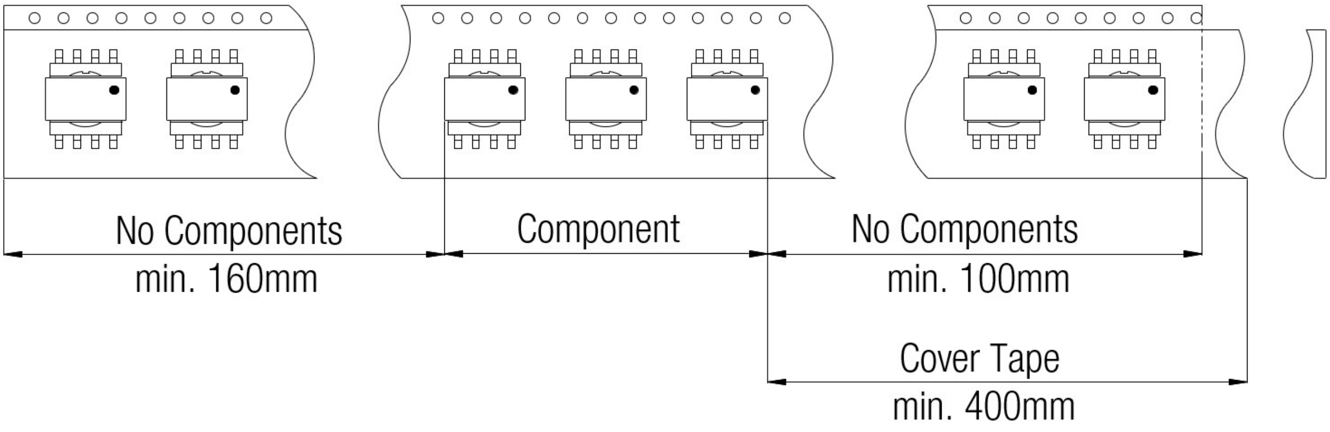
Typical Efficiency vs. Input Voltage

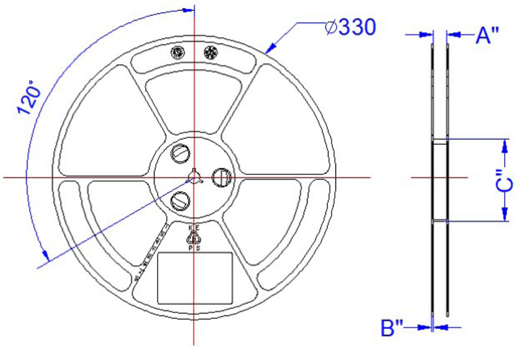
PACKAGING SPECIFICATION - TAPE [mm]

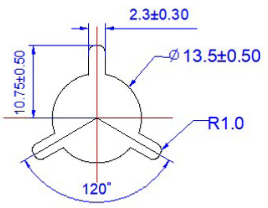
ITRM	W	A0	B0	K0	K1	P	F	E	D0	D1	P0	P2	T
DIM	24.00	11.50	13.10	6.10	--	16.00	11.50	1.75	1.50	--	4.00	2.00	0.40
TOLE	+0.30 -0.30	+0.15 -0.15	+0.15 -0.15	+0.10 -0.10	+0.10 -0.10	+0.10 -0.10	+0.10 -0.10	+0.10 -0.10	+0.10 -0.00	+0.10 -0.00	+0.10 -0.10	+0.15 -0.15	+0.05 -0.05



Reel [mm]

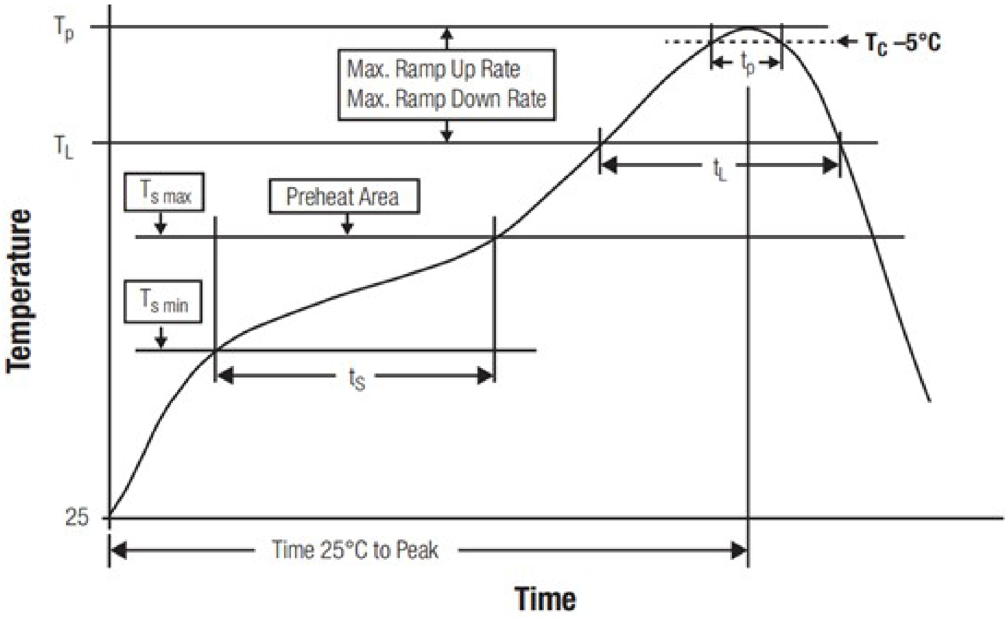






		✓			
SPEC	16	24	32	44	56
DIM A" ± 0.5	16.5	24.5	32.5	44.5	56.5
DIM B" ± 0.3	2.10	2.10	2.10	2.10	2.10
DIM C" ± 0.5	100	100	100	100	100

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 (T_P to T_L)		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 mm^3 <350	Volume mm^3 350-2000	Volume mm^3 >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-029-UBCC-R	RBE-029	1.42g	Tape & Reel	500pcs

*Marking Code
RBE-029—— Product Code