Kingbright

PHOTOCOUPLER

Part Number: KB355NT

Features

1.High current transfer ratio.

2.Opaque type, mini-flat package.

3.Subminiature type (The volume is smaller than that of our conventional DIP type by as far as 30%).

4.Isolation voltage between input and output Viso:3750Vrms.

5.Employs double transfer mold technology.

6.Recognized by UL and CUL, file NO.E225308.

7.Approved by VDE 0884 Teil2(NO:40017614).

8.Moisture Sensitivity Level : Level 4.

9..Package : 1000Pcs / Reel.

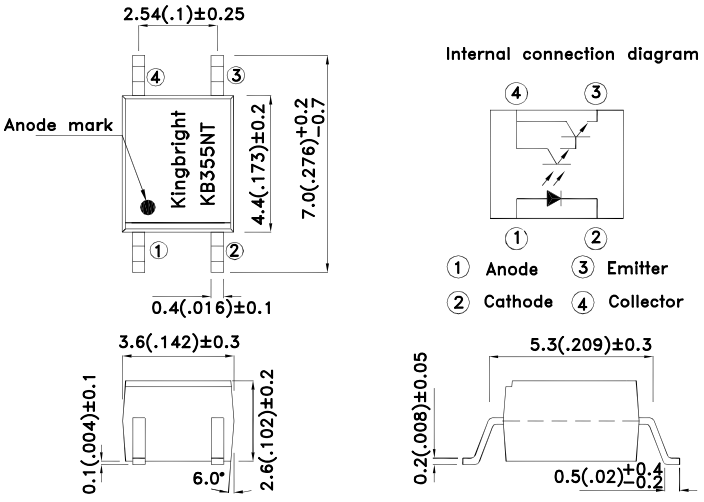
10.RoHS Compliant.

Applications

1.Hybrid substrates that require high density mounting.

2.Programmable controllers.

***PACKAGE DIMENSIONS (UNIT:mm)**
SMD Type



UNIT : MM[INCH]
TOLERANCE : ±0.5[±0.02] UNLESS OTHERWISE NOTED.

***Absolute Maximum Ratings (TA=25°C)**

	Parameter	Symbol	Rating	Unit
Input	Forward current	I_F	50	mA
	Reverse voltage	V_R	6	V
	Power dissipation	P	70	mW
Output	Collector-emitter voltage	V_{CEO}	35	V
	Emitter-collector voltage	V_{ECO}	6	V
	Collector current	I_C	80	mA
	Collector power dissipation	P_C	150	mW
Total power dissipation		Ptot	170	mW
*1 Isolation voltage		Viso	3750	Vrms
Operating temperature		Topr	-30 to +100	°C
Storage temperature		Tstg	-40 to +125	°C
*2 Soldering temperature		Tsol	260	°C

*1 40 to 60% RH,AC for 1 minute.

*2 For 10 seconds.

***Electro-optical Characteristics**

	Parameter		Symbol	Conditions	Min.	Typ.	Max.	Unit
Input	Forward voltage		V_F	I_F=20mA	-	1.2	1.4	V
	Peak forward voltage		V_{FM}	I_{FM}=0.5A	-	-	3.0	V
	Reverse current		I_R	V_R=4V	-	-	10	uA
Output	Collector dark current		I_{CEO}	V_{CE}=10V,I_F=0	-	-	10^{-6}	A
	Collector-emitter breakdown voltage		BV_{CEO}	I_C=0.1mA,I_F=0	35	-	-	V
	Emitter-collector breakdown voltage		BV_{ECO}	I_E=10uA,I_F=0	6	-	-	V
Transfer Charac-teristics	Current transfer ratio		CTR	I_F=1mA,V_{CE}=2V	600	1600	7500	%
	Collector-emitter saturation voltage		$V_{CE(sat)}$	I_F=20mA,I_C=1mA	-	0.8	1.0	V
	Response time	Rise time	Tr	V_{CE}=2V,I_C=2mA R_L=100Ω	-	60	300	uS
		Fall time	Tf		-	53	250	uS

Fig. 1 Current Transfer vs. Forward Current

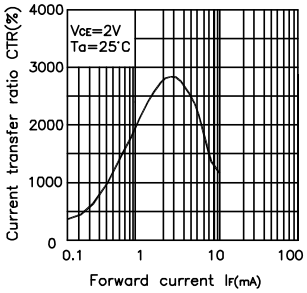


Fig. 2 Forward Current vs. Forward voltage

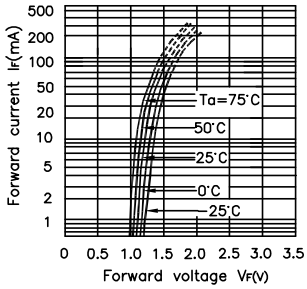


Fig. 3 Collector Current vs. Collector-emitter Voltage

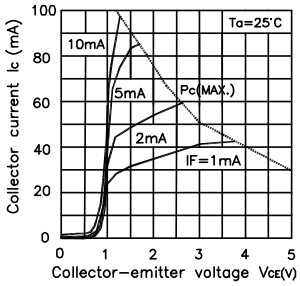


Fig. 4 Forward Current vs. Ambient Temperature

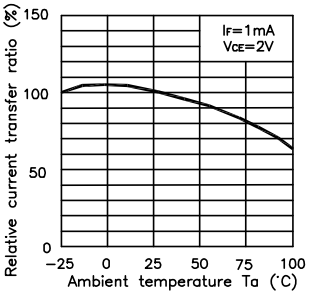


Fig. 5 Collector-emitter Saturation Voltage vs. Ambient Temperature

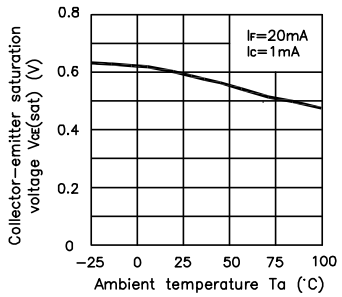


Fig. 6 Response Time vs. Load Resistance

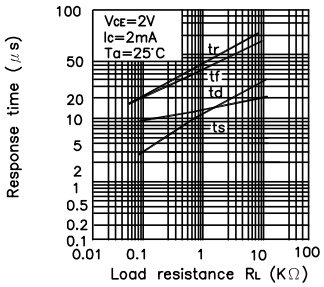


Fig. 7 Collector-emitter Saturation Voltage vs. Forward Current

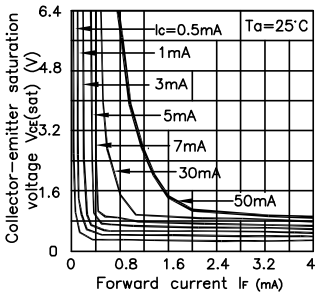
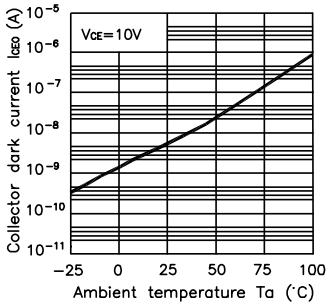
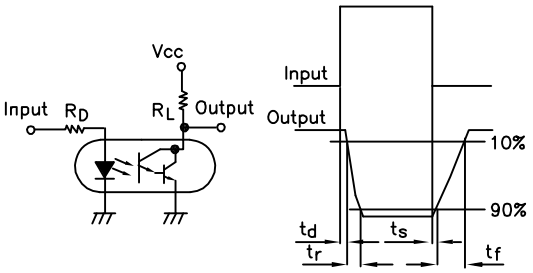


Fig. 8 Collector Dark Current vs. Ambient Temperature



Test Circuit for Response Time



* NOTES ON HANDLING

1.Recommended soldering conditions (Dip soldering)

(1) Dip soldering

Temperature	260 or below (molten solder temperature)
Time	Less than 10 seconds.
Cycle	One cycle allowed to be dipped in solder including plastic nold portion.
Flux	Rosin flux containing small amount of chlorine (The flux with a maximum chlorine content of 0.2 Wt % is recommended.)

(2) Cautions

Fluxes

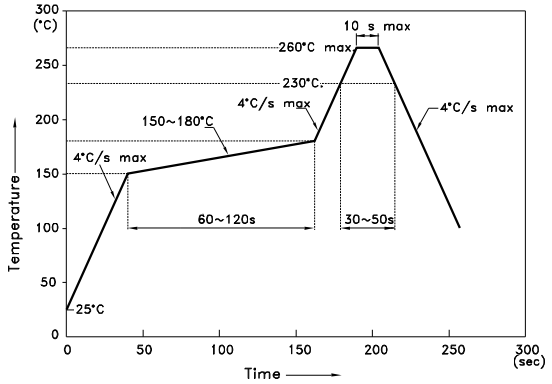
Avoid removing the residual flux with freon-based and chlorine-based cleaning solvent.

2.Cautions regarding noise

Be aware that power is suddenly into the component any surge current may cause damage happen,

even if the voltage is within the absolute maximum ratings.

Reflow Soldering Profile For Lead-free SMT Process.



NOTES:
1. We recommend the reflow temperature 245°C(+/-5°C).The maximum soldering temperature should be limited to 260°C.
2. Don't cause stress to the epoxy resin while it is exposed to high temperature.
3. Number of reflow process shall be 2 times or less.

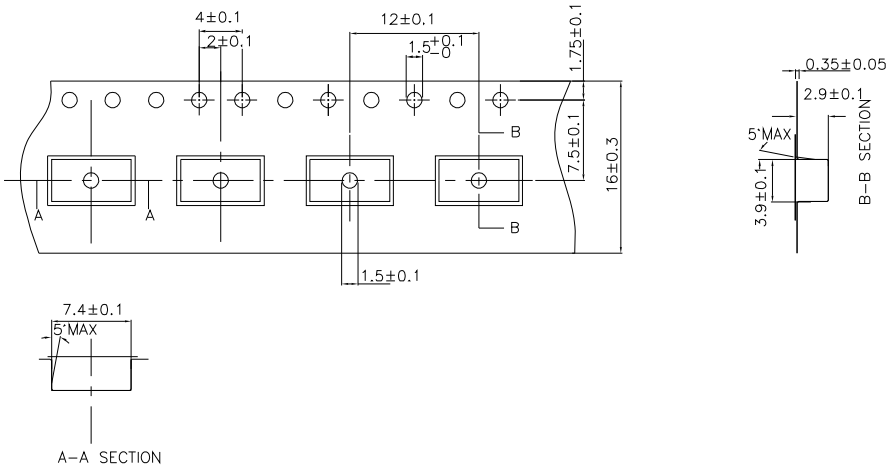
CAUTION

Within this device there exists GaAs (Gallium Arsenide) material which is a harmful substance if ingested. GaAs dust and fumes are toxic. Do not break, cut or pulverize the product, or use chemicals to dissolve them.

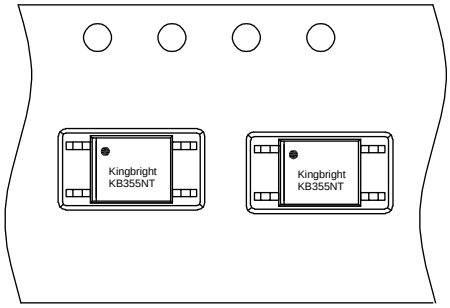
RESTRICTIONS ON PRODUCT USE

- The information in this document is subject to change without notice. Before using this document, please confirm that this is the latest version. Not all devices / types available in every country.
- We are mention about our product quality stablity, semiconductor devices in general can malfunction or fail due to their inherent electrical sensitivity and vulnerability to physical stress. It is the responsibility of the buyer, when utilizing KINGBRIGHT products, to observe standards of safety, and to a avoid situations in which a malfunction or failure of a KINGBRIGHT product could cause loss of human life, bodily injury or damage to property. In developing your designs, please ensure that KINGBRIGHT products are used within specified operating ranges as set forth in the most recent products specifications.

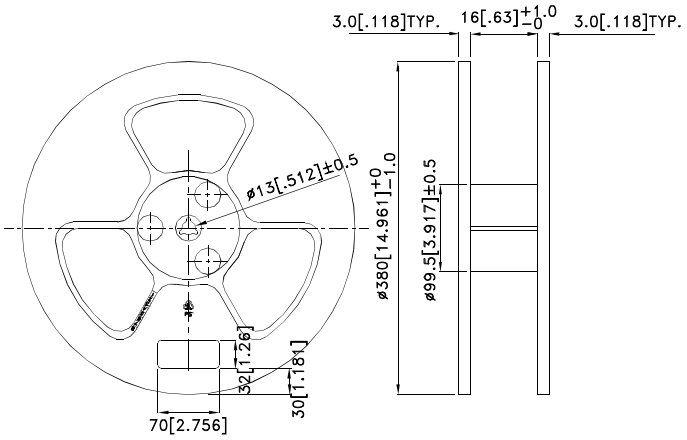
Outline and Dimension (Tape)
(Units : mm)



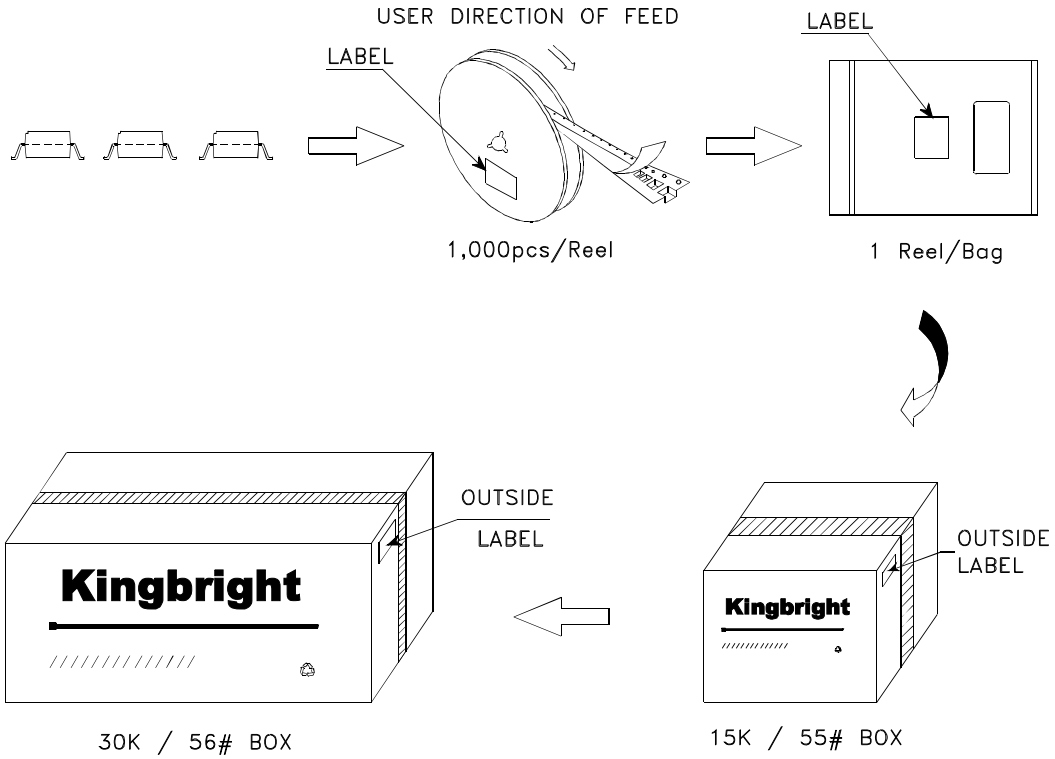
Tape Direction

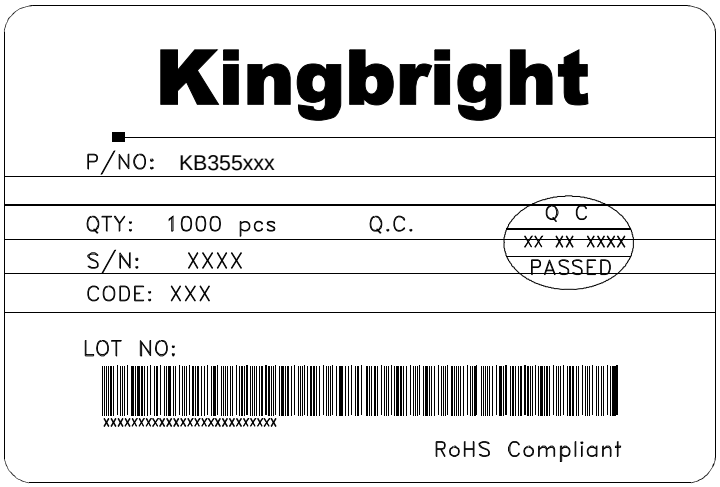


Outline and Dimension (Reel)



Packing:1000pcs/reel


USER DIRECTION OF FEED
LABEL
LABEL
1,000pcs/Reel
1 Reel/Bag
OUTSIDE
LABEL
Kingbright
30K / 56# BOX
OUTSIDE
LABEL
Kingbright
15K / 55# BOX


Kingbright
P/NO: KB355xxx
QTY: 1000 pcs
Q.C.
Q C
xx xx xxxx
PASSED
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RoHS Compliant