

KB3541NT

Features

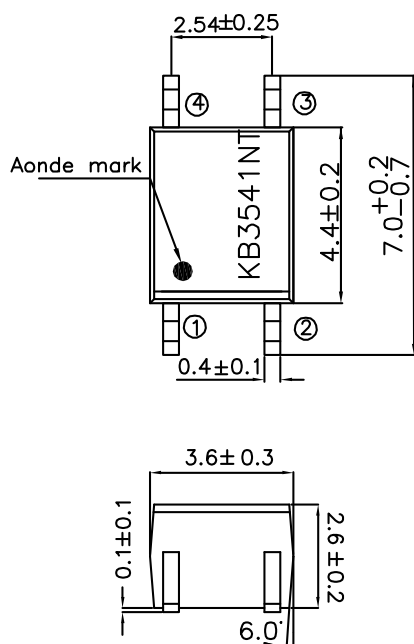
- 1.AC inputs
- 2.High current transfer ratio
- 3.Opaque type, mini-flat package
- 4.Subminiature type (The volume is smaller than that of our conventional DIP type by as far as 30%)
- 5.Isolation voltage between input and output Viso:3750Vrms
- 6.Employs double transfer mold technology
- 7.Recognized by UL and CUL, file NO.E225308.
- 8.Package:1000Pcs/Reel.
- 9.RoHS Compliant.

Applications

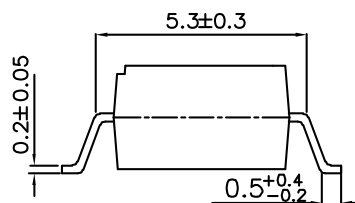
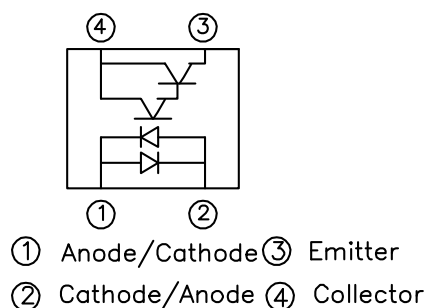
- 1.Hybrid substrates that require high density mounting
- 2.Programmable controllers

*PACKAGE DIMENSIONS (UNIT:mm)

SMD Type



Internal connection diagram



UNIT : MM[INCH]
TOLERANCE : $\pm 0.5[\pm 0.02]$ UNLESS OTHERWISE NOTED.

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

Parameter		Symbol	Rating	Unit
Input	Forward current	I _F	±50	mA
	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		P _{tot}	170	mW
*1 Isolation voltage		V _{iso}	3750	V _{rms}
Operating temperature		T _{opr}	-30 to +100	°C
Storage temperature		T _{stg}	-40 to +125	°C
*2 Soldering temperature		T _{sol}	260	°C

*1 40 to 60%RH, AC for1 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
Output	Collector dark current		I _{CEO}	V _{ce} =20V 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 characteristics	Current transfer ration		CTR	I _F =± 1mA V _{ce} =5V	450	1600	7400	%
	Collector-emitter saturation voltage		V _{CE (sat)}	I _F =± 20mA I _C =1mA	-	0.8	1.0	V
	Response time	Rise time	t _r	V _{ce} =2V I _C =2mA R _L =100Ω	-	60	300	uS
		Fall time	t _r		-	53	250	uS

Fig. 1 Current Transfer Ratio vs. Forward Current

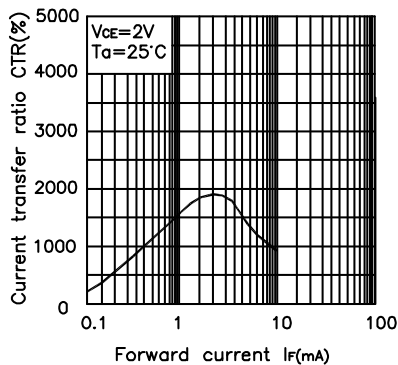


Fig. 2 Forward Current vs. Forward Voltage

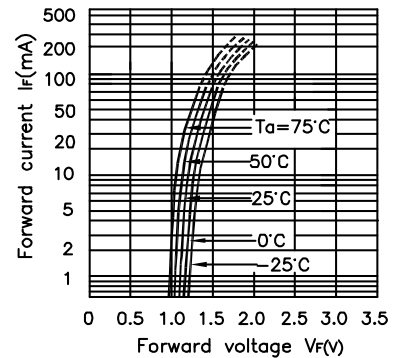


Fig. 3 Collector Current vs. Collector-emitter Voltage

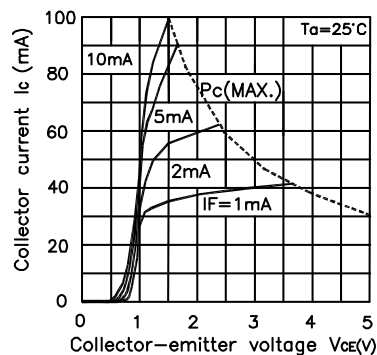


Fig. 4 Relative Current Transfer Ratio vs. Ambient Temperature

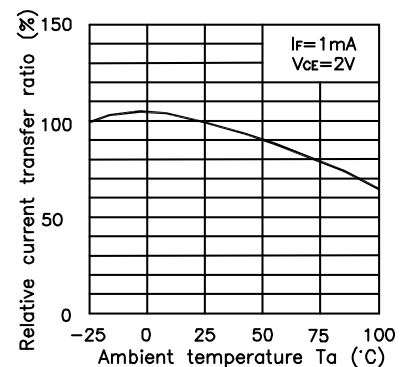


Fig. 5 Collector-emitter Saturation Voltage vs. Ambient Temperature

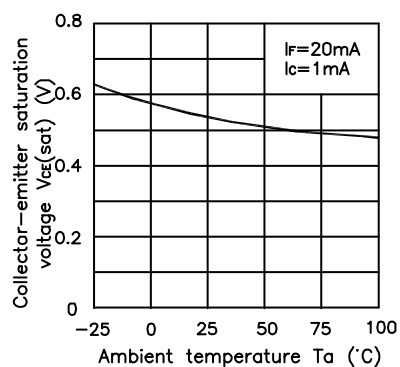
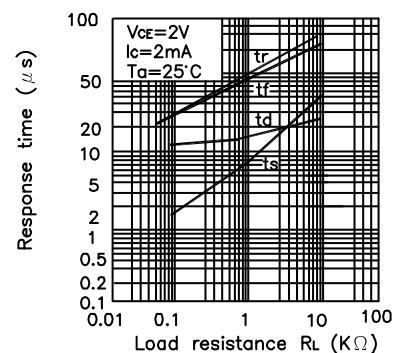


Fig. 6 Response Time vs. Load Resistance



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

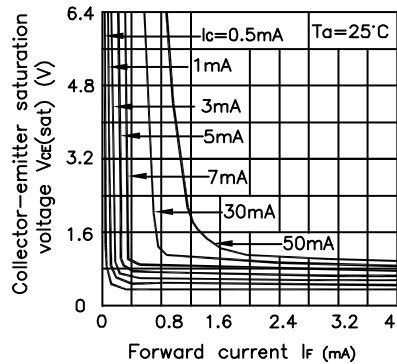
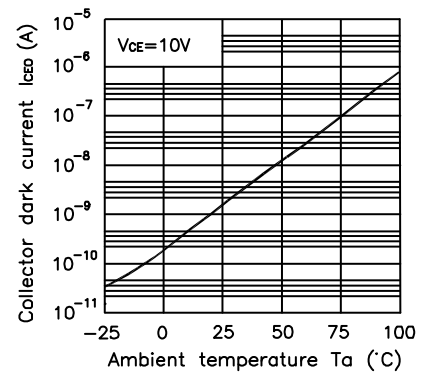
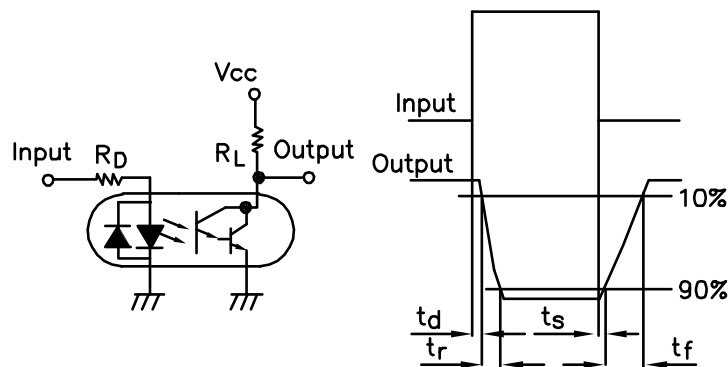


Fig. 8 Collector Dark Current vs. Ambient Temperature



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 mold 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.

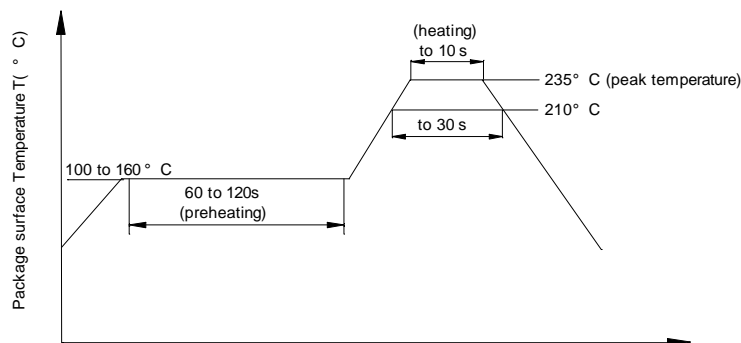
NOTES ON HANDLING

1.Recommended soldering conditions

(1).Infrared reflow soldering

- Peak reflow temperature 235 ° C or below(package surface temperature)
- Time of temperature higher than 210 ° C 30 seconds or less
- Number of reflows Three
- Flux Rosin flux containing small amount of chlorine(The flux with a maximum chlorine content of 0.2Wt % is recommended.)

Recommended Temperature Profile of infrared Reflow



CAUTION

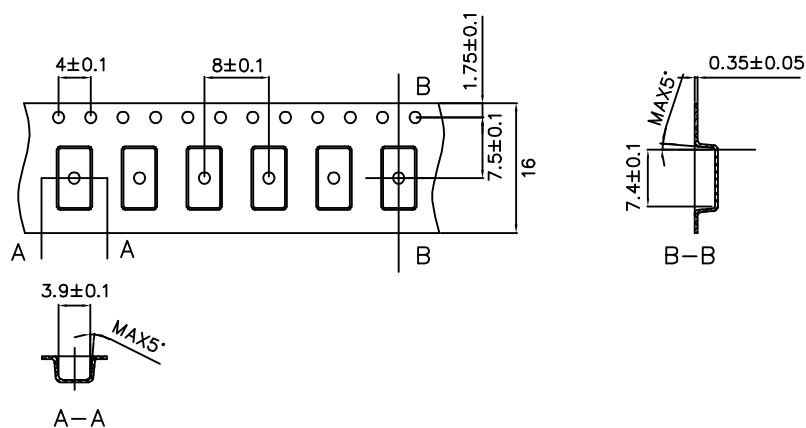
Within this device there exists GaAs (Gallium Arsenide) material which is a harmful substance if ingested.

GaAs dust and fumes are toxic. Do not break, cut or pulverize the product, or use chemicals to dissolve them.

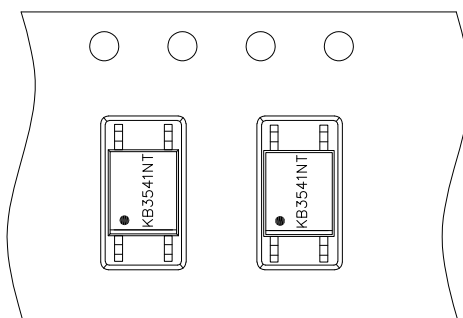
RESTRICTIONS ON PRODUCT USE

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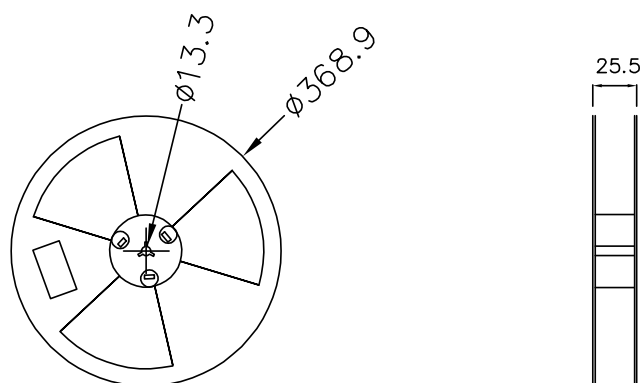
Outline and Dimension(Tape) (Units : mm)



Tape Direction



Outline and Dimension(Reel)



Packing:1000pcs/reel