

### KBT011

PRELIMINARY SPEC

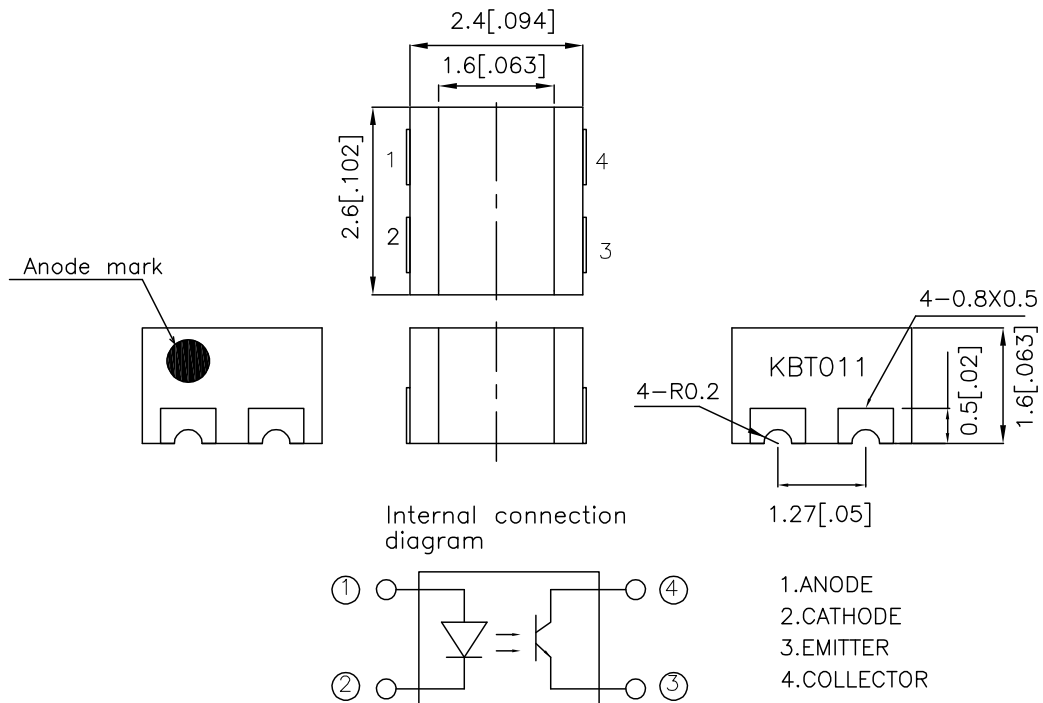
#### Features

1. Opaque, mini-flat package.
2. Subminiature type.
3. Isolation voltage: 2000 Vrms.
4. High reliability.
5. Rohs compliant.

#### Applications

1. motor-control circuits.
2. computer terminals.
3. system appliances, measuring instruments.
4. programmable logic controller.
5. signal transmission between circuit of different potentials and impedances.

#### Package Dimensions



UNIT : MM[INCH]

TOLERANCE : ±0.2[0.008] UNLESS OTHERWISE NOTED.

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

Parameter		Symbol	Rating	Unit
Input	Forward Current	I <sub>F</sub>	30	mA
	Reverse Voltage	V <sub>R</sub>	6	V
	Power dissipation	P	35	mW
Output	Collector-Emitter Voltage	V <sub>CEO</sub>	35	V
	Emitter-Collector Voltage	V <sub>ECO</sub>	6	V
	Collector Current	I <sub>C</sub>	30	mA
	Collector Power Dissipation	P <sub>C</sub>	150	mW
Total Power Dissipation		P <sub>tot</sub>	170	mW
*1 Isolation Voltage		Viso	2000	Vrms
Operating Temperature		Topr	-30 to +85	°C
Storage Temperature		Tstg	-40 to +100	°C
*2 Soldering Temperature		Tsol	260	°C

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

\*2 For 10 seconds.

#### \*Electro-optical Characteristics(Ta=25°C)

Parameter		Symbol	Conditions	Min.	TYP.	Max.	Unit	
Input	Forward Voltage	V <sub>F</sub>	I <sub>F</sub> =20mA	-	1.2	1.4	V	
	Peak Forward Voltage	V <sub>FM</sub>	I <sub>FM</sub> =0.5A	-	-	3.0	V	
	Reverse Current	I <sub>R</sub>	V <sub>R</sub> =4V	-	-	10	μA	
Output	Collector dark current	I <sub>CEO</sub>	V <sub>CE</sub> =20V, I <sub>F</sub> =0mA	-	-	10 <sup>-7</sup>	A	
Transfer characteristics	*1 Current transfer ratio		CTR	I <sub>F</sub> =5mA, V <sub>CE</sub> =5V	50	-	300	%
	Collector-emitter saturation voltage		V <sub>CE(sat)</sub>	I <sub>F</sub> =20mA, I <sub>C</sub> =1mA	-	-	0.2	V
	Response time	Rise time	tr	V <sub>CE</sub> =2V I <sub>C</sub> =2mA R <sub>L</sub> =100Ω	-	4	18	μs
		Fall time	tf		-	3	18	μs

\*1 Classification table of current transfer ratio is shown below.

$$CTR = \frac{I_C}{I_F} \times 100\%$$

Fig. 1 Forward Current vs. Forward Voltage

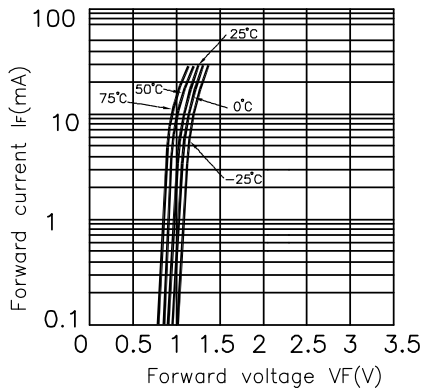


Fig. 2 Collector Transfer Ratio vs. Forward Current

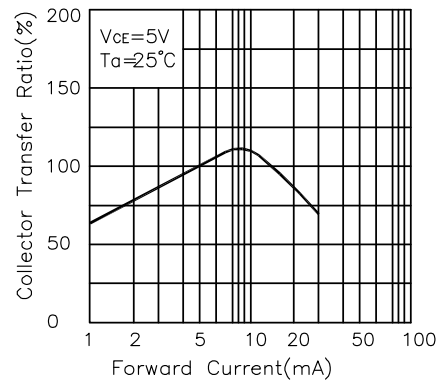


Fig. 3 Collector-emitter voltage vs. Collector Current

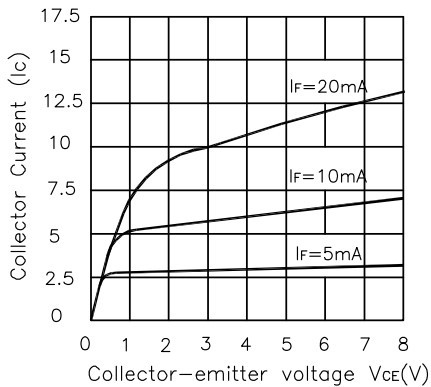


Fig. 4 Relative Current Transfer Ratio vs. Ambient Temperature

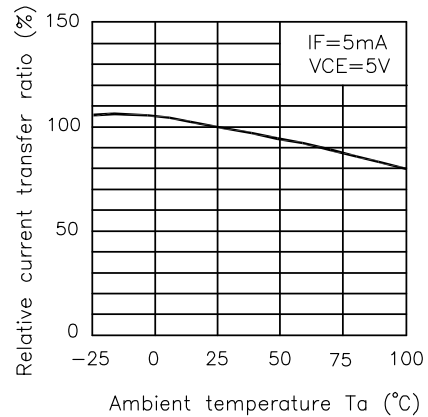
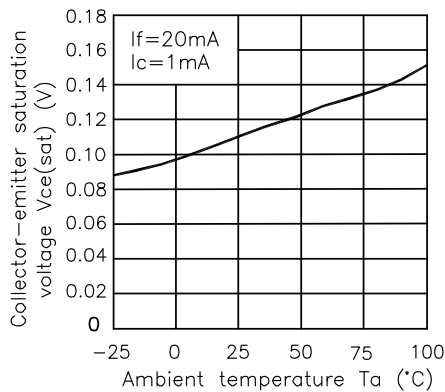


Fig.5 Collector-emitter Saturation Voltage VS. Ambient Temperature



### KBT011

Fig. 6 Forward Current vs. Ambient Temperature

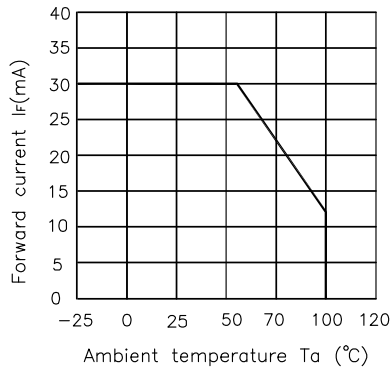


Fig. 7 Collector Power Dissipation vs. Ambient Temperature

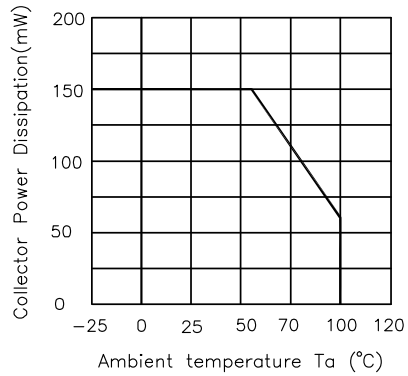
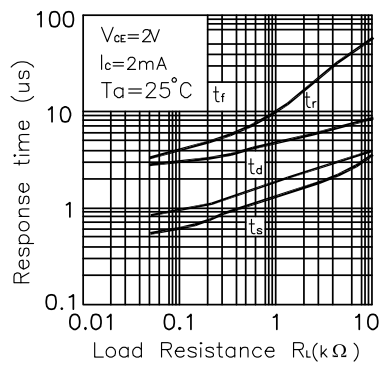


Fig.8 Response Time vs. Load Resistance



Test Circuit for Response Time

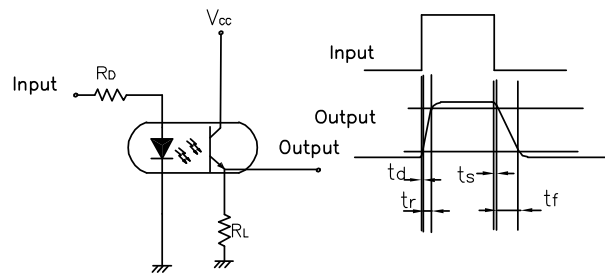


Fig.9 Collector-emitter Saturation Voltage VS. Forward Current

