

## HSB100-8

### Silicon Controlled Rectifier

#### FEATURES

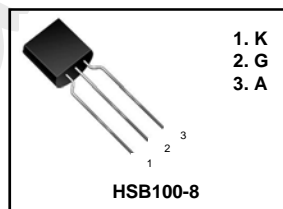
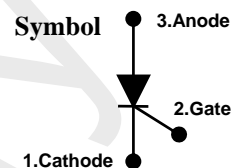
- ❑ Repetitive Peak Off-State Voltage: 600V
- ❑ R.M.S On-state Current ( $I_{T(RMS)}=0.8A$ )
- ❑ Average On-state Current ( $I_{T(AV)}=0.5A$ )
- ❑ Low On-State Voltage ( $1.2V_{Typ}@I_{TM}$ )

#### General Description

PNPN Devices designed for high volume, line-powered consumer applications such as relay and lamp driver, small motor controls, gate drivers for larger thyristors and sensing and detection circuits. Supplied in and inexpensive plastic TO-92 package which is readily adaptable for use in automatic insertion equipment.

$$V_{DRM} = 600 V$$

$$I_{T(RMS)} = 0.8A$$



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

Symbol	Parameter	Value	Units
$V_{DRM}$	Repetitive Peak Off-State Voltage	600	V
$I_{T(RMS)}$	R.M.S On-State Current (All conduction angles)	0.8	A
$I_{T(AV)}$	Average On-State Current (Half Sine Wave : $T_C=74^\circ C$ )	0.5	A
$I_{TSM}$	Surge On-State Current (1/2 Cycle, 60Hz, Peak, Non Repetitive)	10	A
$I^2t$	Circuit Fusing Considerations ( $t=8.3mS$ )	0.415	A <sup>2</sup> s
$P_{GM}$	Forward Peak Gate Power Dissipation ( $T_a=25^\circ C$ )	0.1	W
$P_{G(AV)}$	Forward Average Gate Power Dissipation ( $T_a=25^\circ C$ , $t=8.3mS$ )	0.01	W
$V_{RGM}$	Reverse Peak Gate Voltage	5	V
$I_{FGM}$	Forward Peak Gate Current	1	A
$T_{STG}$	Storage Temperature Range	-40 to +125	°C
$T_j$	Operating Junction Temperature	-40 to +125	°C

### Electrical Characteristics (T<sub>a</sub>=25°C)

Symbol	Parameter	Test Conditions	Min	Typ	Max	Units
I <sub>GT</sub>	Gate Trigger Current <sup>(1)</sup>	V <sub>AK</sub> =7V, R <sub>L</sub> =100Ω			200	uA
V <sub>GT</sub>	Gate Trigger Voltage <sup>(1)</sup>	V <sub>AK</sub> =7V, R <sub>L</sub> =100Ω, T <sub>a</sub> =25°C V <sub>AK</sub> =7V, R <sub>L</sub> =100Ω, T <sub>a</sub> =-40°C			0.8 1.2	V V
V <sub>GD</sub>	Non Trigger Gate Voltage	V <sub>AK</sub> =12V(DC), R <sub>L</sub> =100Ω, T <sub>C</sub> =125°C	0.2			V
I <sub>H</sub>	Holding Current	V <sub>AK</sub> =12V, Gate open, Initiating current=50mA, T <sub>a</sub> =25°C T <sub>a</sub> =-40°C		2 2	5 10	mA mA
I <sub>DRM</sub>	Repetitive Peak Off-State Current	V <sub>AK</sub> =V <sub>DRM</sub> OR V <sub>RRM</sub> , T <sub>C</sub> =25°C V <sub>AK</sub> =V <sub>DRM</sub> OR V <sub>RRM</sub> , T <sub>C</sub> =125°C			10 200	uA uA
V <sub>TM</sub>	Peak On-State Voltage <sup>(2)</sup>	I <sub>TM</sub> =1A, Peak		1.2	1.7	V

<sup>(1)</sup> R<sub>GK</sub> Current is not included in measurement

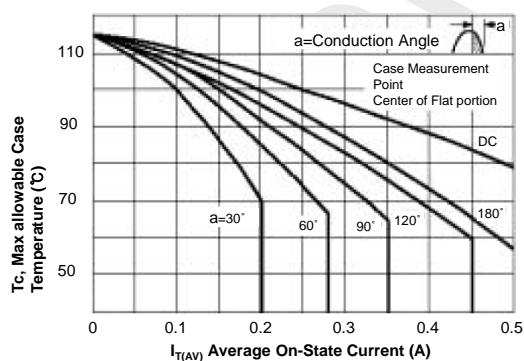
<sup>(2)</sup> Forward current applied for 1ms maximum duration, duty cycle ≤ 1%

### Thermal Characteristics

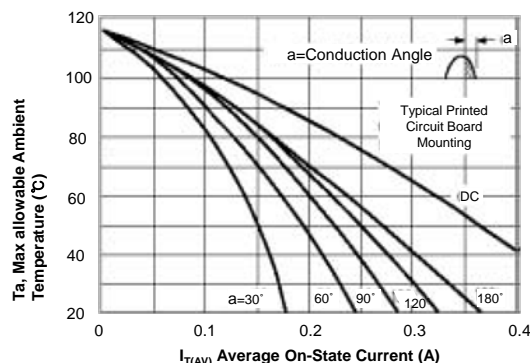
Symbol	Parameter	Test Conditions	Min	Typ	Max	Units
R <sub>TH(J-C)</sub>	Thermal Resistance	Junction to Case			1.3	°C/W
R <sub>TH(J-A)</sub>	Thermal Resistance	Junction to Ambient		60		°C/W

### Performance Curves

**Fig 1. HSB100-8 Current Derating (Reference : Case Temperature)**

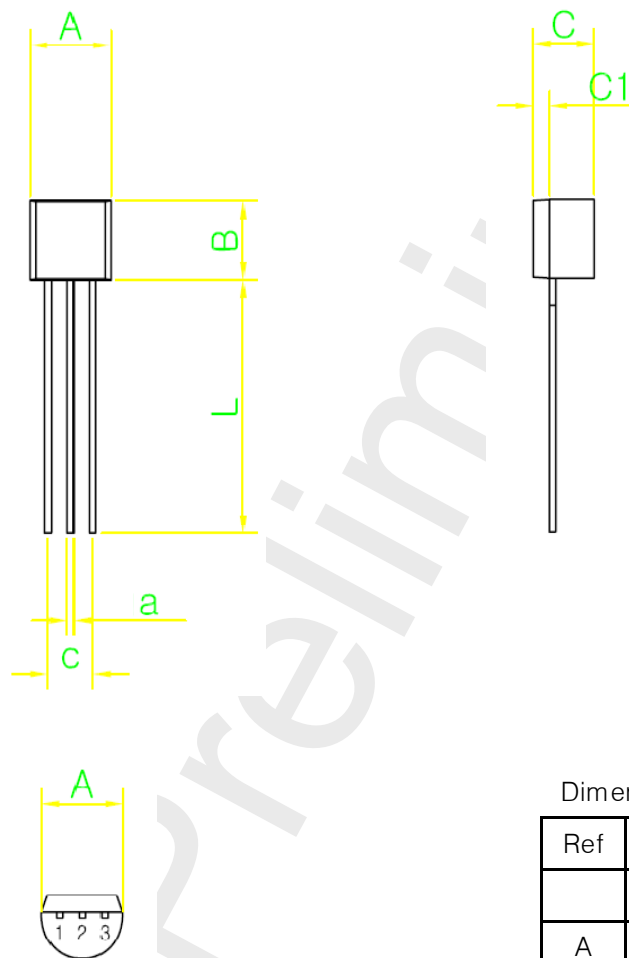


**Fig 2. HSB100-8 Current Derating (Reference : Ambient Temperature)**



Package Dimensions

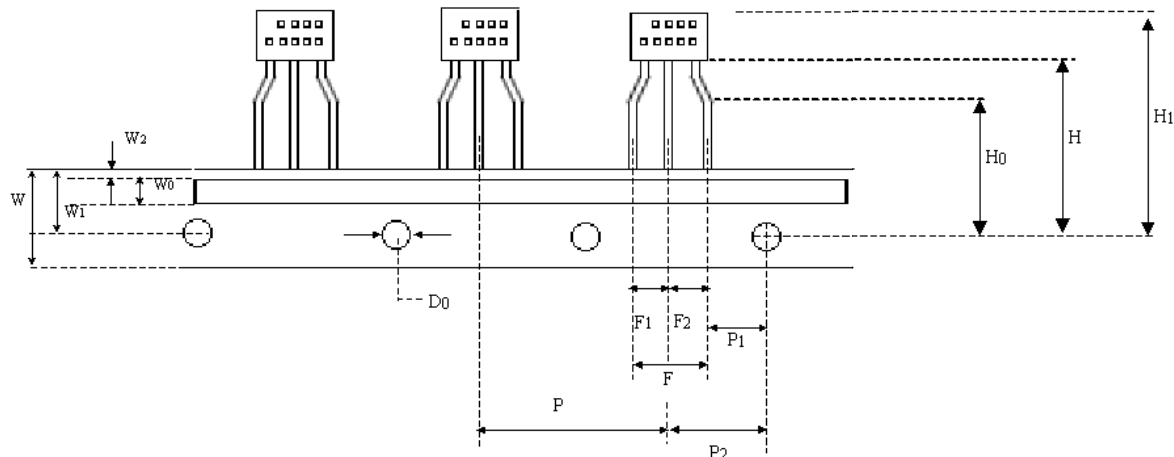
HSB100-8  
(TO-92)



Dimension Table

Ref	Dimension (mm)	
	Min	Max
A	4.43	4.83
B	4.43	4.83
C	3.46	3.96
C1	0.92	1.12
L	13.97	14.97
a	0.36	0.56
c	2.54(Typ)	

### Taping Dimensions



项目	说明	标准值
F1、F2	左右脚的中心线到中间脚的中心线的距离	2.5 +0.2, -0.1
F	左右脚的中心线之间的距离	5.0 +0.6, -0.2
P	相邻两只管的中间脚之间的距离	12.7 ±0.5
P1	孔中心到右脚的垂直距离	3.85 ±0.5
P2	孔中心到中间脚的垂直距离	6.35 ±0.5
H0	孔中心到成形处的垂直距离	16.0 ±0.5
H	孔中心到塑封体下缘的垂直距离	19.5 ±1
H1	孔中心到塑封体上缘的垂直距离	Max27
W0	热熔胶带宽度	6.0 ±0.5
W1	孔中心到线带上缘的距离	9.0 ±0.5
W	线带宽度	18.0 +1.0, -0.5
W2	热熔胶带和线带的高度之差	Max1.0
D0	孔径	4.0 ±0.2