

HSB100-8

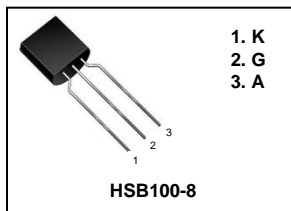
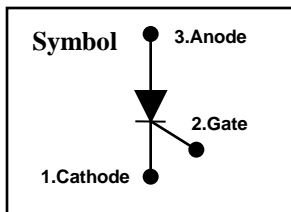
Silicon Controlled Rectifier

$$V_{DRM} = 600 \text{ V}$$

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

FEATURES

- ❑ Repetitive Peak Off-State Voltage: 600V
- ❑ R.M.S On-state Current ($I_{T(RMS)}=0.8\text{A}$)
- ❑ Average On-state Current ($I_{T(AV)}=0.5\text{A}$)
- ❑ 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.

Absolute Maximum Ratings ($T_a=25^\circ\text{C}$)

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 : $T_C=74^\circ\text{C}$)	0.5	A
I_{TSM}	Surge On-State Current (1/2 Cycle, 60Hz, Peak, Non Repetitive)	10	A
I^2t	Circuit Fusing Considerations ($t=8.3\text{mS}$)	0.415	A^2s
P_{GM}	Forward Peak Gate Power Dissipation ($T_a=25^\circ\text{C}$)	0.1	W
$P_{G(AV)}$	Forward Average Gate Power Dissipation ($T_a=25^\circ\text{C}$, $t=8.3\text{mS}$)	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	$^\circ\text{C}$
T_j	Operating Junction Temperature	-40 to +125	$^\circ\text{C}$

Electrical Characteristics (T_a=25 °C)

Symbol	Parameter	Test Conditions	Min	Typ	Max	Units
I _{GT}	Gate Trigger Current ⁽¹⁾	V _{AK} =7V, R _L =100Ω			200	uA
V _{GT}	Gate Trigger Voltage ⁽¹⁾	V _{AK} =7V, R _L =100Ω, T _a =25 °C V _{AK} =7V, R _L =100Ω, T _a =-40 °C			0.8 1.2	V V
V _{GD}	Non Trigger Gate Voltage	V _{AK} =12V(DC), R _L =100Ω, T _C =125 °C	0.2			V
I _H	Holding Current	V _{AK} =12V, Gate open, Initiating current=50mA, T _a =25 °C T _a =-40 °C		2 2	5 10	mA mA
I _{DRM}	Repetitive Peak Off-State Current	V _{AK} =V _{DRM} OF V _{RRM} , T _C =25 °C V _{AK} =V _{DRM} OF V _{RRM} , T _C =125 °C			10 200	uA uA
V _{TM}	Peak On-State Voltage ⁽²⁾	I _{TM} =1A, Peak		1.2	1.7	V

⁽¹⁾ R_{GK} Current is not included in measurement

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

Thermal Characteristics

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

Performance Curves

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

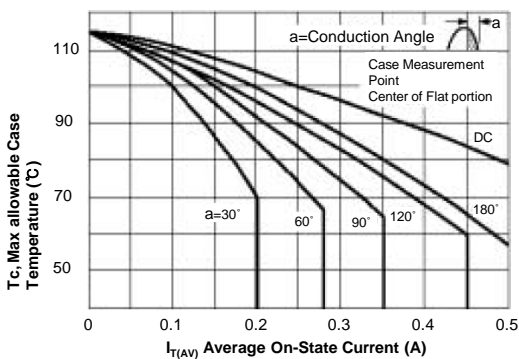
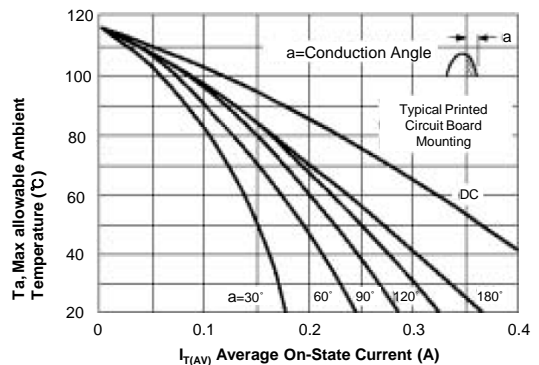
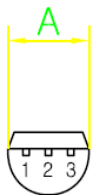
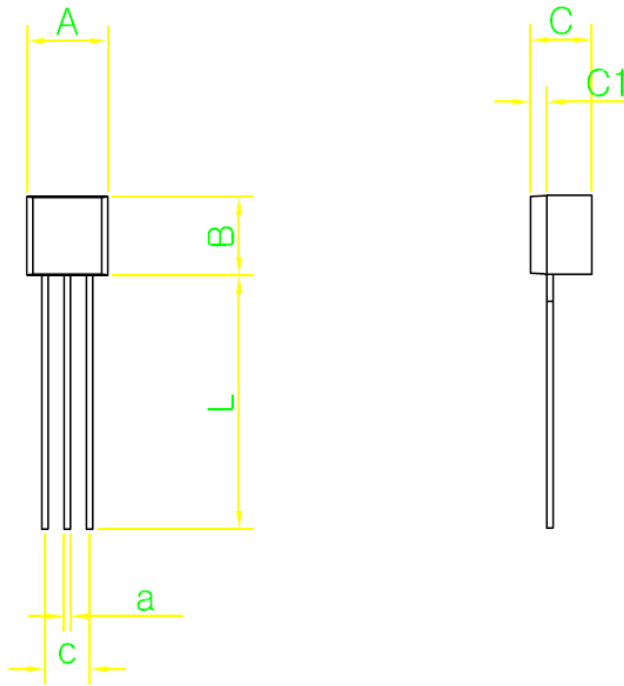


Fig 2. HSB100-8 Current Derating (Reference : Ambient Temperature)



Package Dimensions

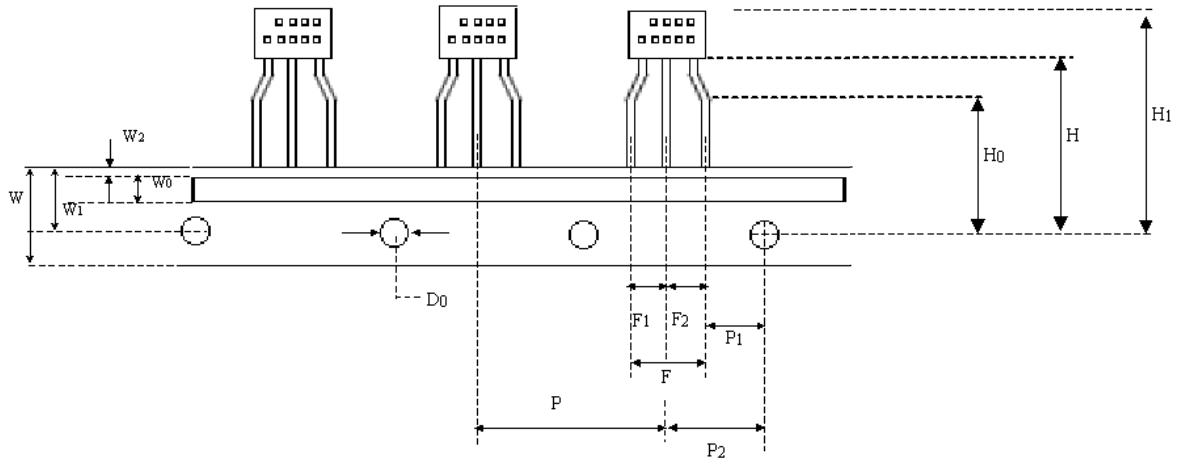
HSB100-8
(TO-92)



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