

# KSB1151

## Feature

- Low Collector-Emitter Saturation Voltage
- Large Collector Current
- High Power Dissipation :  $P_C=1.3W$  ( $T_a=25^\circ C$ )
- Complement to KSD 1691



## PNP Epitaxial Silicon Transistor

### Absolute Maximum Ratings $T_C=25^\circ C$ unless otherwise noted

Symbol	Parameter	Value	Units
$V_{CBO}$	Collector-Base Voltage	- 60	V
$V_{CEO}$	Collector-Emitter Voltage	- 60	V
$V_{EBO}$	Emitter-Base Voltage	- 7	V
$I_C$	Collector Current (DC)	- 5	A
$I_{CP}$	*Collector Current (Pulse)	- 8	A
$I_B$	Base Current	- 1	A
$P_C$	Collector Dissipation ( $T_a=25^\circ C$ )	1.3	W
	Collector Dissipation ( $T_C=25^\circ C$ )	20	W
$T_J$	Junction Temperature	150	$^\circ C$
$T_{STG}$	Storage Temperature	- 55 ~ 150	$^\circ C$

\*  $PW \leq 10ms$ , Duty Cycle  $\leq 50\%$

### Electrical Characteristics $T_C=25^\circ C$ unless otherwise noted

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
$I_{CBO}$	Collector Cut-off Current	$V_{CB} = - 50V, I_E = 0$			- 10	$\mu A$
$I_{EBO}$	Emitter Cut-off Current	$V_{EB} = - 7V, I_C = 0$			- 10	$\mu A$
$h_{FE1}$	* DC Current Gain	$V_{CE} = - 1V, I_C = - 0.1A$	60	200	400	
$h_{FE2}$		$V_{CE} = - 1V, I_C = - 2A$	100			
$h_{FE3}$		$V_{CE} = - 2V, I_C = - 5A$	50			
$V_{CE(sat)}$	* Collector-Emitter Saturation Voltage	$I_C = - 2A, I_B = - 0.2A$		- 0.14	- 0.3	V
$V_{BE(sat)}$	* Base-Emitter Saturation Voltage	$I_C = - 2A, I_B = - 0.2A$		- 0.9	- 1.2	V
$t_{ON}$	Turn On Time	$V_{CC} = - 10V, I_C = - 2A$ $I_{B1} = - I_{B2} = 0.2A$ $RL = 5\Omega$		0.15	1	$\mu s$
$t_{STG}$	Storage Time			0.78	2.5	$\mu s$
$t_F$	Fall Time			0.18	1	$\mu s$

\* Pulse test:  $PW \leq 350\mu s$ , Duty Cycle  $\leq 2\%$  Pulsed

## $h_{FE}$ Classification

Classification	O	Y	G
$h_{FE2}$	100 ~ 200	160 ~ 320	200 ~ 400

# Typical Characteristics

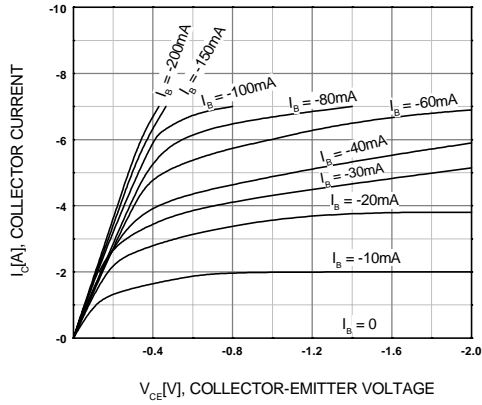


Figure 1. Static Characteristic

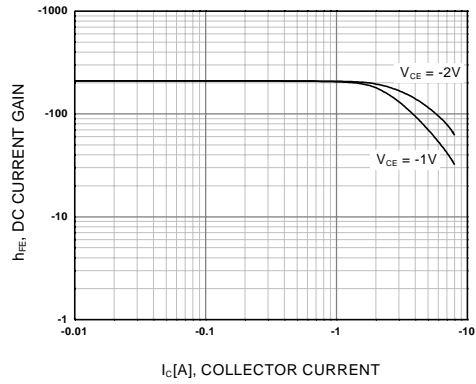


Figure 2. DC current Gain

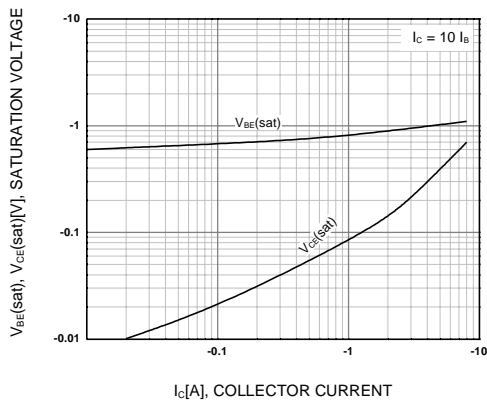


Figure 3. Collector-Emitter Saturation Voltage Base-Emitter Saturation Voltage

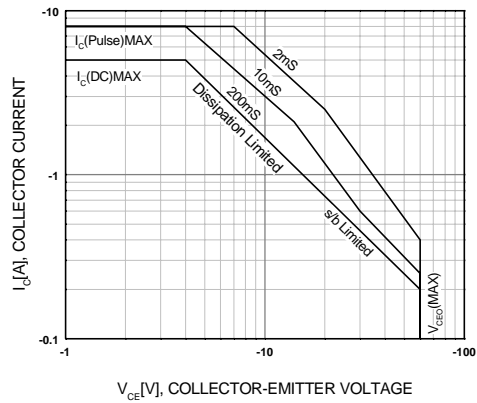


Figure 4. Forward Bias Operating Area

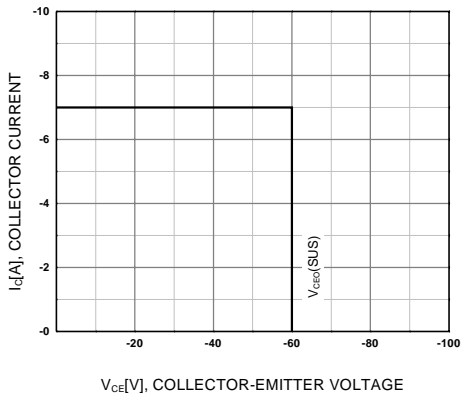


Figure 5. Reverse Bias Safe Operating Area

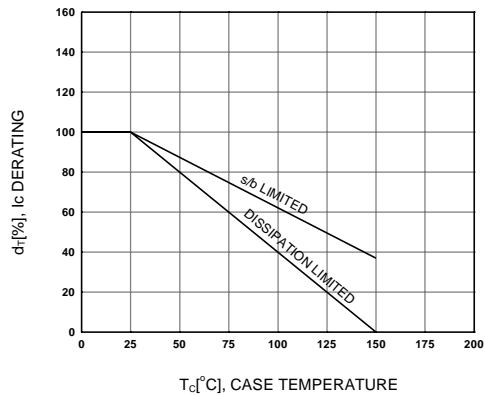


Figure 6. Derating Curve of Safe Operating Areas

### Typical Characteristics (Continued)

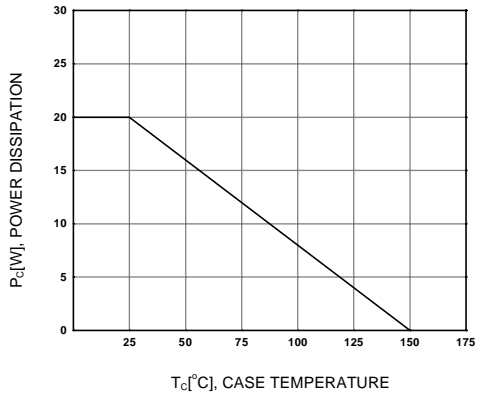


Figure 7. Power Derating

# Package Dimensions

KSB1151

## TO-126



Dimensions in Millimeters

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