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**Feature**

- Low Collector-Emitter Saturation Voltage & Large Collector Current
- High Power Dissipation:  $P_C = 1.3W$  ( $T_a=25^\circ C$ )
- Complementary to KSB1151



**NPN 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 (DC)	1	A
$P_C$	Collector Dissipation ( $T_a=25^\circ C$ )	1.3	W
$P_C$	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	$\mu A$
$h_{FE1}$ $h_{FE2}$ $h_{FE3}$	*DC Current Gain	$V_{CE} = 1V, I_C = 0.1A$ $V_{CE} = 1V, I_C = 2A$ $V_{CE} = 1V, I_C = 5A$	60 100 50		400	
$V_{CE(sat)}$	*Collector-Emitter Saturation Voltage	$I_C = 2A, I_B = 0.2A$		0.1	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	$V_{CC} = 10V, I_C = 2A$ $I_{B1} = - I_{B2} = 0.2A$ $R_L = 5\Omega$		0.2	1	$\mu s$
$t_{STG}$	Storage Time			1.1	2.5	$\mu s$
$t_F$	Fall Time			0.2	1	$\mu s$

\* Pulse test:  $PW \leq 50\mu s$ , duty Cycle  $\leq 2\%$  Pulsed

**$h_{FE}$  Classification**

Classification	O	Y	G
$h_{FE 2}$	100 ~ 200	160 ~ 320	200 ~ 400

# Typical Characteristics

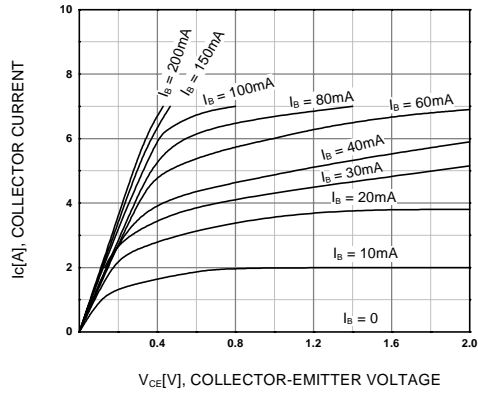


Figure 1. Static Characteristic

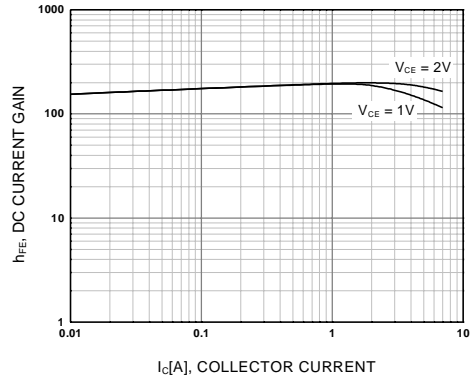


Figure 2. DC current Gain

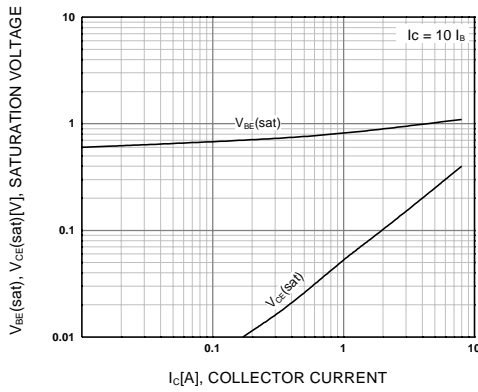


Figure 3. Collector-Emitter Saturation Voltage  
Base-Emitter Saturation Voltage

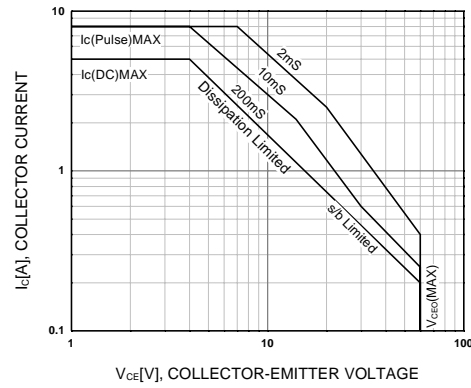


Figure 4. Forward Bias Safe Operating Area

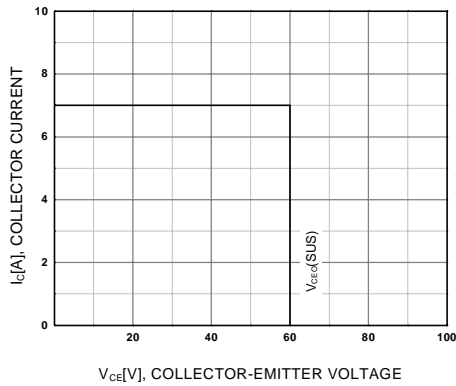


Figure 5. Reverse Bias Safe Operating Area

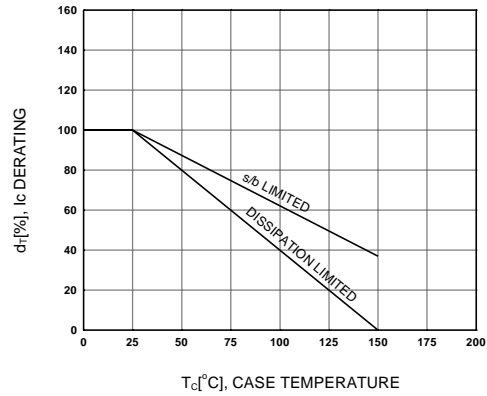


Figure 6. Derating Curve of Safe Operating Areas

### Typical Characteristics (Continued)

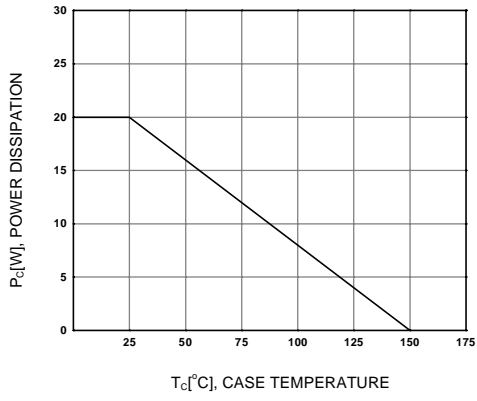


Figure 7. Power Derating

# Package Dimensions

KSD1691

## TO-126



Dimensions in Millimeters

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