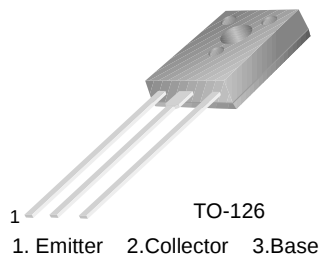


KSD1691

KSD1691

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	μA
I_{EBO}	Emitter Cut-off Current	$V_{EB} = 7V, I_C = 0$			10	μA
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	μs
t_{STG}	Storage Time			1.1	2.5	μs
t_F	Fall Time			0.2	1	μs

* 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

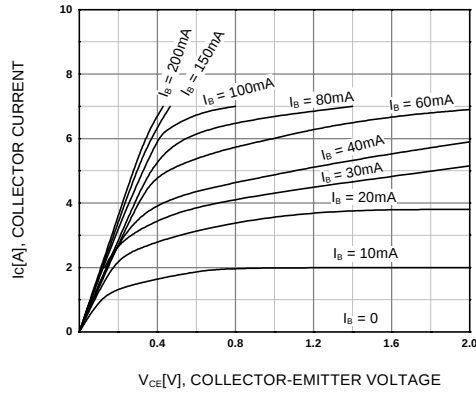


Figure 1. Static Characteristic

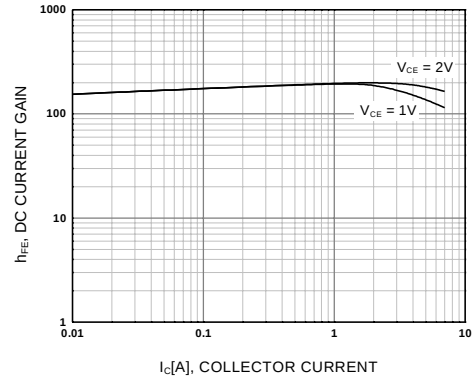


Figure 2. DC current Gain

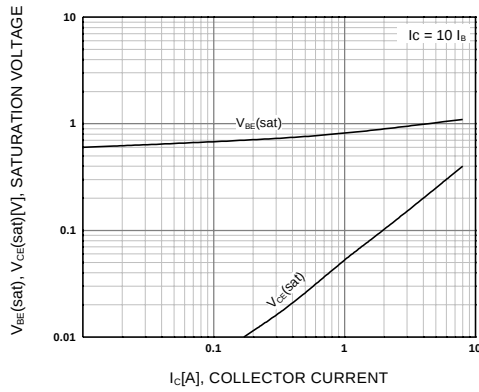


Figure 3. Collector-Emitter Saturation Voltage
Base-Emitter Saturation Voltage

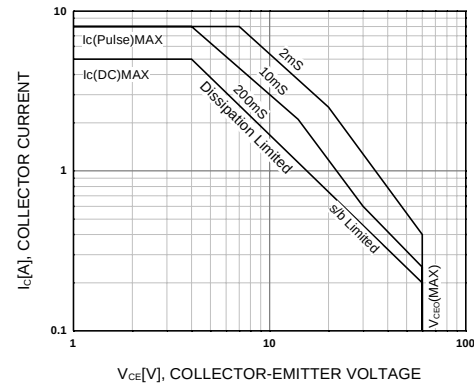


Figure 4. Forward Bias Safe Operating Area

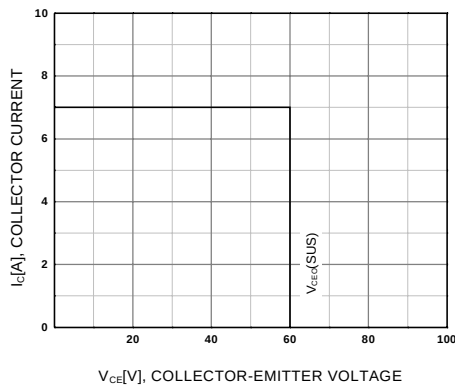


Figure 5. Reverse Bias Safe Operating Area

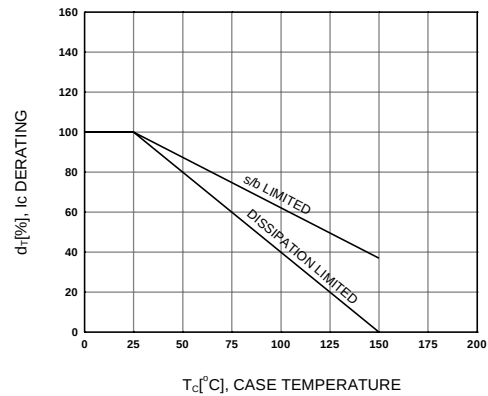


Figure 6. Derating Curve of Safe Operating Areas

Typical Characteristics (Continued)

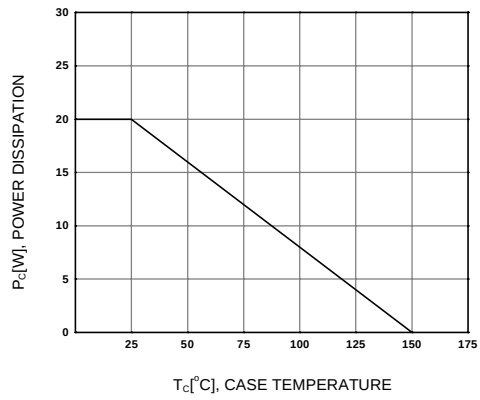


Figure 7. Power Derating

Technical drawing of a 10-pin D-sub connector. The drawing includes a front view (top), a side view (right), and a detail view of the pin (bottom). Dimensions are given in millimeters with tolerances.

Front View Dimensions:

- Overall width: 8.00 ± 0.30
- Overall height: 14.20 MAX
- Pin diameter: $\text{Ø}3.20 \pm 0.10$
- Pin spacing: 2.28 TYP [2.28 ± 0.20]
- Pin length: 13.06 ± 0.30
- Pin thickness: 0.75 ± 0.10
- Pin width: 1.60 ± 0.10
- Pin height: 0.75 ± 0.10

Side View Dimensions:

- Overall height: 11.00 ± 0.20
- Pin thickness: $0.50^{+0.10}_{-0.05}$
- Pin width: 1.75 ± 0.20
- Pin height: 1.00 (dimension line shown)
- Pin width: (0.50) (dimension line shown)

Detail View Dimensions:

- Pin diameter: $\text{Ø}3.20 \pm 0.10$
- Pin length: 13.06 ± 0.30
- Pin thickness: 0.75 ± 0.10
- Pin width: 1.60 ± 0.10
- Pin height: 0.75 ± 0.10

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