

## KSD1691

### **Feature**

- Low Collector-Emtter Saturation Voltage & Large Collector Current
- High Power Dissipation: P<sub>C</sub> = 1.3W (T<sub>a</sub>=25°C)
   Complementary to KSB1151



# **NPN Epitaxial Silicon Transistor**

## Absolute Maximum Ratings T<sub>C</sub>=25°C unless otherwise noted

Symbol	Parameter	Value	Units
V <sub>CBO</sub>	Collector-Base Voltage	60	V
V <sub>CEO</sub>	Collector-Emitter Voltage	60	V
V <sub>EBO</sub>	Emitter-Base Voltage	7	V
I <sub>C</sub>	Collector Current (DC)	5	Α
I <sub>CP</sub>	*Collector Current (Pulse)	8	Α
I <sub>B</sub>	Base Current (DC)	1	Α
P <sub>C</sub>	Collector Dissipation (T <sub>a</sub> =25°C)	1.3	W
P <sub>C</sub>	Collector Dissipation (T <sub>C</sub> =25°C)	20	W
TJ	Junction Temperature	150	°C
T <sub>STG</sub>	Storage Temperature	- 55 ~ 150	°C

### \* PW≤10ms, duty Cycle≤50%

## Electrical Characteristics $T_C=25$ °C unless otherwise noted

Symbol	Parameter	Test Condition	Min.	Тур.	Max.	Units
I <sub>CBO</sub>	Collector Cut-off Current	$V_{CB} = 50V, I_{E} = 0$			10	μΑ
I <sub>EBO</sub>	Emitter Cut-off Current	$V_{EB} = 7V, I_{C} = 0$			10	μА
h <sub>FE1</sub> h <sub>FE2</sub> h <sub>FE3</sub>	*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 <sub>CE</sub> (sat)	*Collector-Emitter Saturation Voltage	$I_C = 2A, I_B = 0.2A$		0.1	0.3	V
V <sub>BE</sub> (sat)	*Base-Emitter Saturation Voltage	$I_C = 2A, I_B = 0.2A$		0.9	1.2	V
t <sub>ON</sub>	Turn ON Time	$V_{CC} = 10V, I_{C} = 2A$		0.2	1	μs
t <sub>STG</sub>	Storage Time	$I_{B1} = -I_{B2} = 0.2A$		1.1	2.5	μs
t <sub>F</sub>	Fall Time	$R_L = 5\Omega$		0.2	1	μs

<sup>\*</sup> Pulse test: PW≤50μs, duty Cycle≤2% Pulsed

## **h**<sub>FE</sub> Classificntion

Classification	0	Υ	G
h <sub>FE 2</sub>	100 ~ 200	160 ~ 320	200 ~ 400

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# **Typical Characteristics**

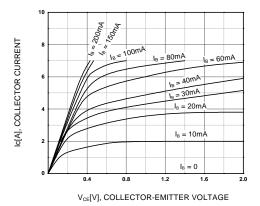


Figure 1. Static Characteristic

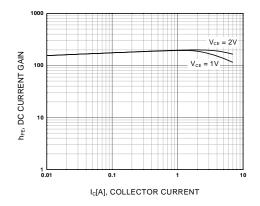


Figure 2. DC current Gain

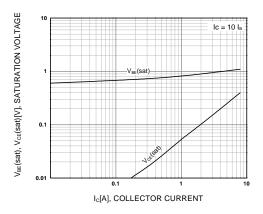


Figure 3. Collector-Emitter Saturation Voltage Base-Emitter Saturation Voltage

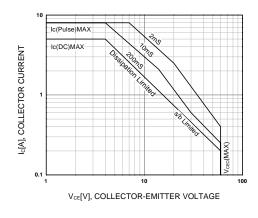


Figure 4. Forward Bias Safe Operating Area

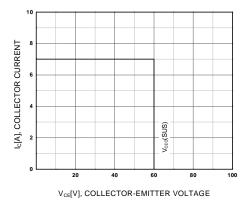


Figure 5. Reverse Bias Safe Operating Area

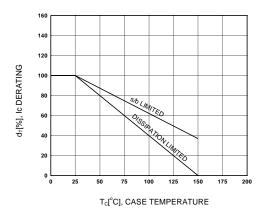


Figure 6. Derating Curve of Safe Operating Areas

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# Typical Characteristics (Continued)

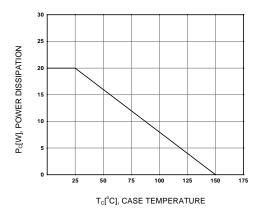
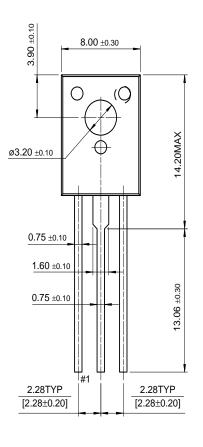


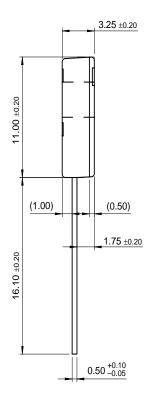
Figure 7. Power Derating

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# **Package Demensions**

TO-126





Dimensions in Millimeters

Downloaded from **Elcodis.com** electronic components distributor

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