

### KSE13009L

## **High Voltage Switch Mode Applications**

- High Speed Switching
- Suitable for Switching Regulator and Motor Control



### **NPN 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	700	V
V <sub>CEO</sub>	Collector-Emitter Voltage	400	V
V <sub>EBO</sub>	Emitter-Base Voltage	9	V
I <sub>C</sub>	Collector Current (DC)	12	А
I <sub>CP</sub>	Collector Current (Pulse)	24	А
I <sub>B</sub>	Base Current	6	А
P <sub>C</sub>	Collector Dissipation (T <sub>C</sub> =25°C)	130	W
T <sub>J</sub>	Junction Temperature	150	°C
T <sub>STG</sub>	Storage Temperature	- 65 ~ 150	°C

## Electrical Characteristics $\rm T_{C}{=}25^{\circ}C$ unless otherwise noted

Symbol	Parameter	Test Condition	Min.	Тур.	Max.	Units
V <sub>CEO</sub> (sus)	Collector-Emitter Sustaining Voltage	$I_C = 10 \text{mA}, I_B = 0$	400			V
I <sub>EBO</sub>	Emitter Cut-off Current	$V_{EB} = 7V, I_{C} = 0$			1	mA
h <sub>FE</sub>	DC Current Gain	$V_{CE} = 5V, I_{C} = 5A$	8		40	
		$V_{CE} = 5V, I_{C} = 8A$	6		30	
V <sub>CE</sub> (sat)	Collector-Emitter Saturation Voltage	$I_{C} = 5A, I_{B} = 1A$			1	V
		$I_C = 8A, I_B = 1.6A$			1.5	V
		$I_{C} = 12A, I_{B} = 3A$			3	V
V <sub>BE</sub> (sat)	Base-Emitter Saturation Voltage	I <sub>C</sub> = 5A, I <sub>B</sub> = 1A			1.2	V
		$I_C = 8A, I_B = 1.6A$			1.6	V
C <sub>ob</sub>	Output Capacitance	V <sub>CB</sub> = 10V , f = 0.1MHz		180		pF
f <sub>T</sub>	Current Gain Bandwidth Product	$V_{CE} = 10V, I_{C} = 0.5A$	4			MHz
t <sub>ON</sub>	Turn ON Time	$V_{CC} = 125V, I_{C} = 8A$			1.1	μs
t <sub>STG</sub>	Storage Time	$I_{B1} = -I_{B2} = 1.6A$			3	μs
t <sub>F</sub>	Fall Time	$R_L = 15,6\Omega$			0.7	μs

<sup>\*</sup> Pulse test: PW≤300μs, Duty cycle≤2% Pulse

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# **Typical Characteristics**

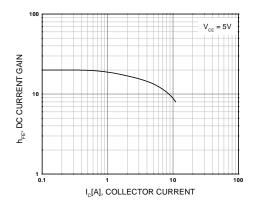


Figure 1. DC current Gain

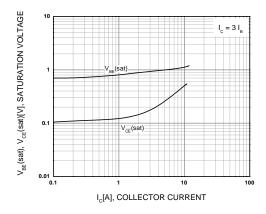


Figure 2. Base-Emitter Saturation Voltage Collector-Emitter Saturation Voltage

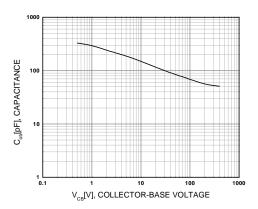


Figure 3. Collector Output Capacitance

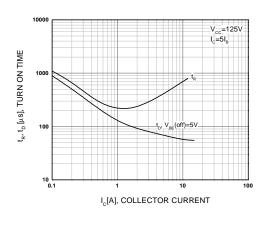


Figure 4. Turn On Time

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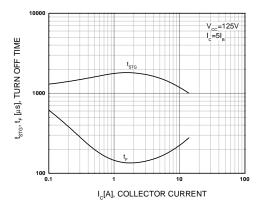
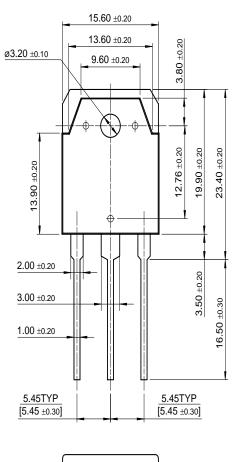
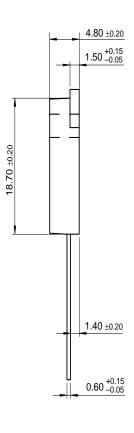


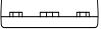
Figure 5. Turn Off Time

# **Package Demensions**

## TO-3P







Dimensions in Millimeters

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