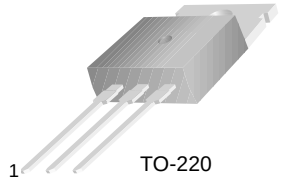
FAIRCHILD
SEMICONDUCTOR®

KSE13008/13009

High Voltage Switch Mode Application

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



TO-220

1.Base 2.Collector 3.Emitter

NPN Silicon Transisor

Absolute Maximum Ratings T_C=25°C unless otherwise noted

Symbol	Parameter	Value	Units
V_{CBO}	Collector-Base Voltage		
	: KSE13008	600	V
	: KSE13009	700	V
V_{CEO}	Collector-Emitter Voltage		
	: KSE13008	300	V
	: KSE13009	400	V
V_{EBO}	Emitter-Base Voltage	9	V
I_C	Collector Current (DC)	12	A
I_{CP}	Collector Current (Pulse)	24	A
I_B	Base Current	6	A
P_C	Collector Dissipation (T_C=25°C)	100	W
T_J	Junction Temperature	150	°C
T_{STG}	Storage Temperature	- 65 ~ 150	°C

Electrical Characteristics T_C=25°C unless otherwise noted

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
V_{CEO}(sus)	Collector-Emitter Sustaining Voltage					
	: KSE13008	I_C = 10mA, I_B = 0	300			V
	: KSE13009		400			V
I_{EBO}	Emitter Cut-off Current	V_{EB} = 9V, I_C = 0			1	mA
h_{FE}	* DC Current Gain	V_{CE} = 5V, I_C = 5A	8		40	
		V_{CE} = 5V, I_C = 8A	6		30	
V_{CE}(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_{BE} (sat)	* Base-Emitter Saturation Voltage	I_C = 5A, I_B = 1A			1.2	V
		I_C = 8A, I_B = 1.6A			1.6	V
C_{ob}	Output Capacitance	V_{CB} = 10V, f = 0.1MHz		180		pF
f_T	Current Gain Bandwidth Product	V_{CE} = 10V, I_C = 0.5A	4			MHz
t_{ON}	Turn On Time	V_{CC} = 125V, I_C = 8A			1.1	µs
t_{STG}	Storage Time	I_{B1} = - I_{B2} = 1.6A			3	µs
t_F	Fall Time	R_L = 15,6Ω			0.7	µs

* Pulse test: PW≤300µs, Duty cycle≤2%

Typical Characteristics

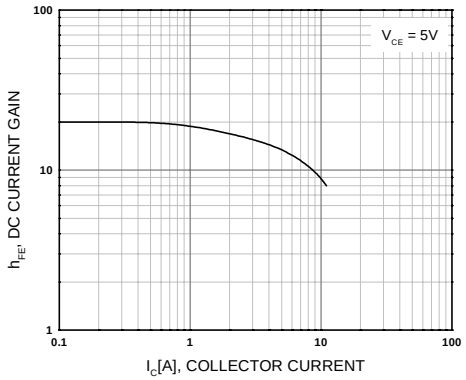


Figure 1. DC current Gain

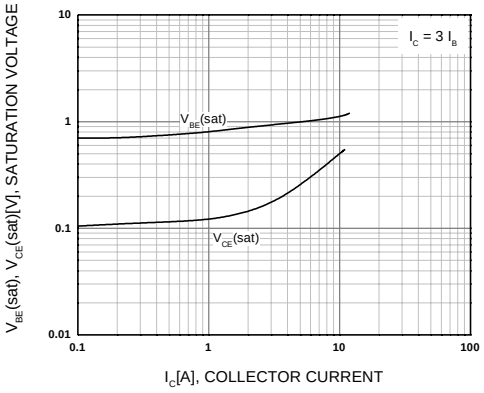


Figure 2. Base-Emitter Saturation Voltage Collector-Emitter Saturation Voltage

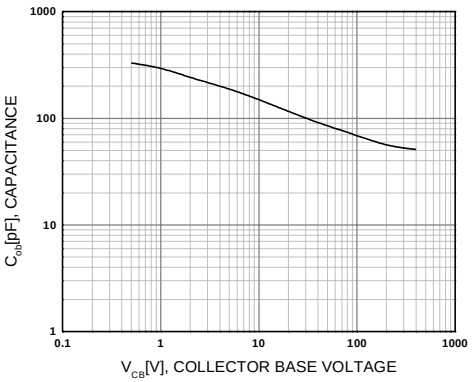


Figure 3. Collector Output Capacitance

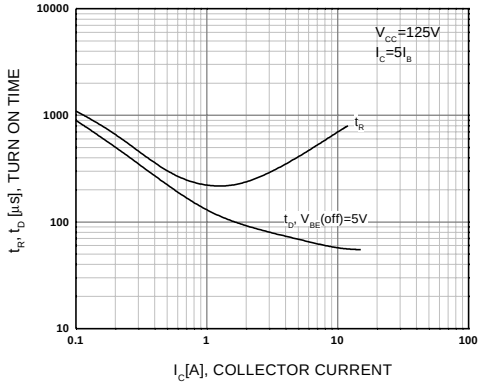


Figure 4. Turn On Time

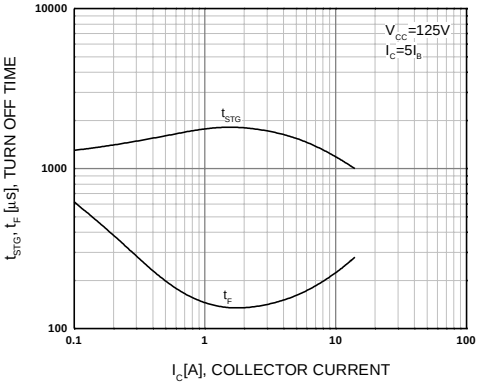


Figure 5. Turn Off Time

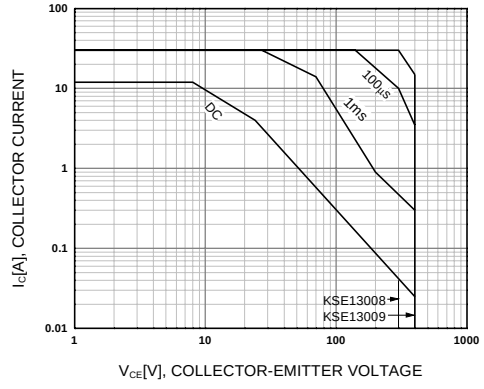


Figure 6. Safe Operating Area

Typical Characteristics (Continued)

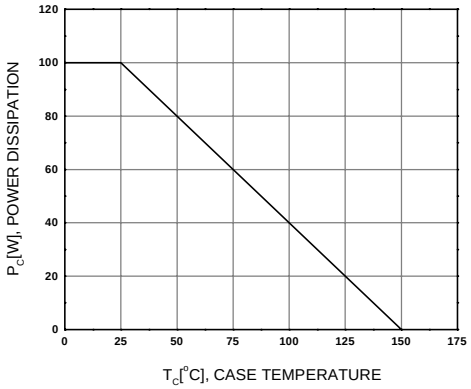
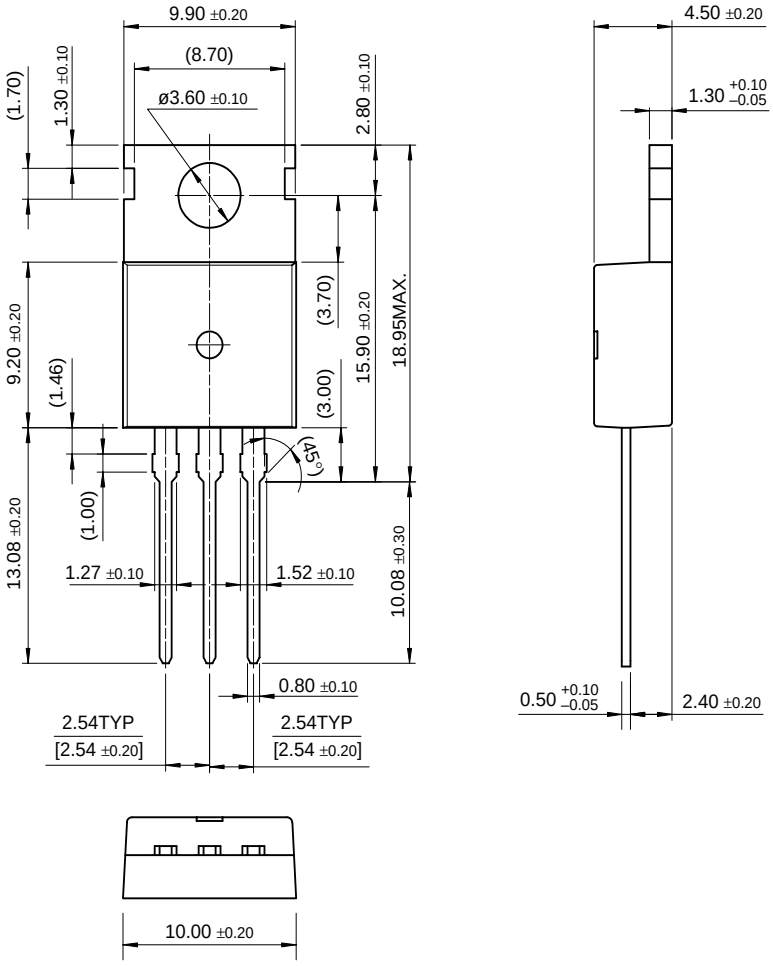


Figure 7. DC current Gain

Package Demensions

TO-220



Dimensions in Millimeters

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