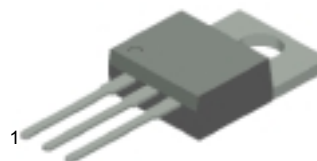


KSE13006/13007

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 Transistor

Absolute Maximum Ratings $T_C=25^\circ\text{C}$ unless otherwise noted

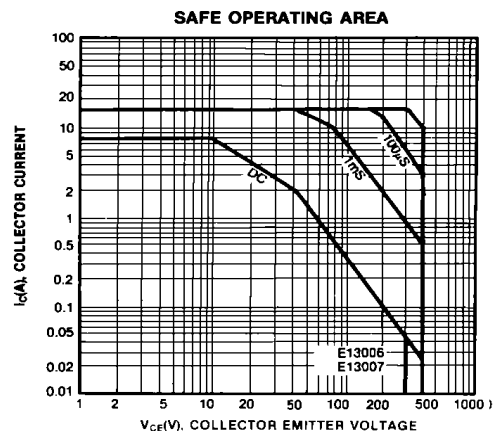
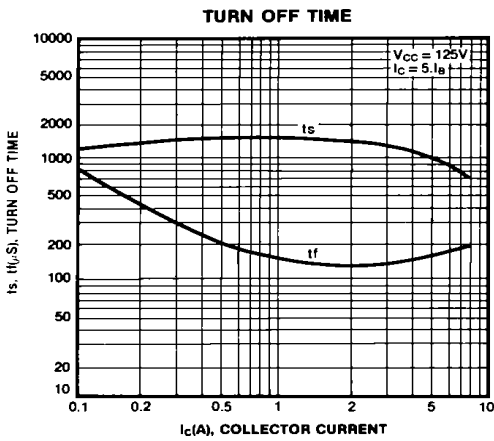
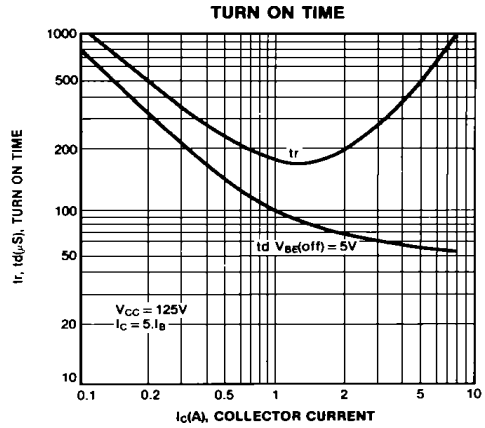
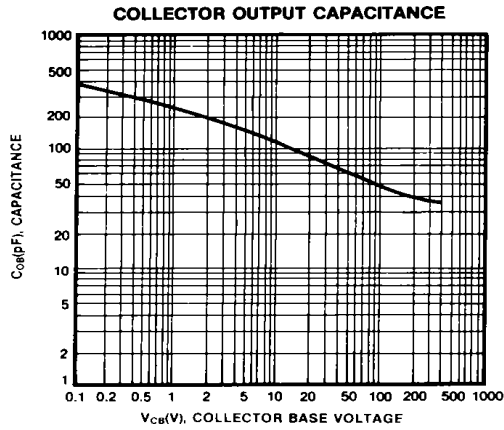
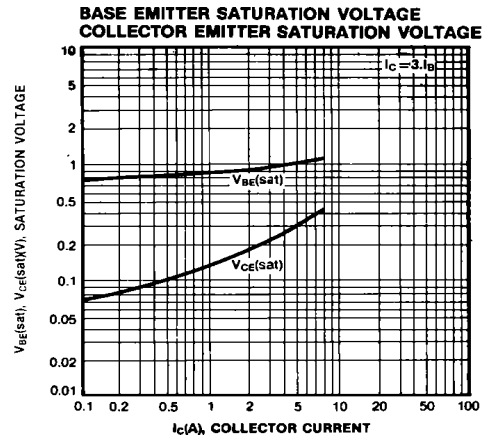
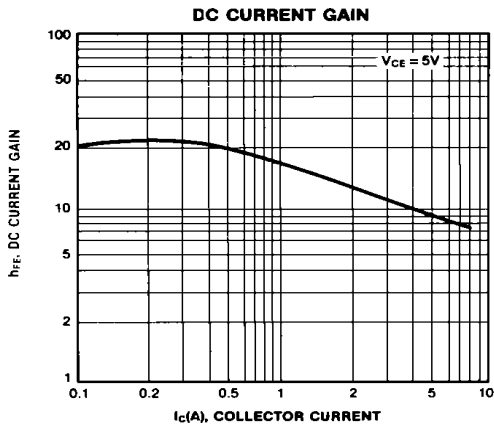
Symbol	Parameter	Value	Units
V_{CBO}	Collector-Base Voltage	: KSE13006	600
		: KSE13007	700
V_{CEO}	Collector-Emitter Voltage	: KSE13006	300
		: KSE13007	400
V_{EBO}	Emitter- Base Voltage	9	V
I_C	Collector Current (DC)	8	A
I_{CP}	Collector Current (Pulse)	16	A
I_B	Base Current	4	A
P_C	Collector Dissipation ($T_C=25^\circ\text{C}$)	80	W
T_J	Junction Temperature	150	$^\circ\text{C}$
T_{STG}	Storage Temperature	- 65 ~ 150	$^\circ\text{C}$

Electrical Characteristics $T_C=25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
BV_{CEO}	Collector- Emitter Breakdown Voltage	$I_C = 10\text{mA}, I_B = 0$: KSE13006	300		V
			: KSE13007	400		V
I_{EBO}	Emitter Cut-off Current	$V_{EB} = 9\text{V}, I_C = 0$			1	mA
h_{FE}	*DC Current Gain	$V_{CE} = 5\text{V}, I_C = 2\text{A}$ $V_{CE} = 5\text{V}, I_C = 5\text{A}$	8		60	
			5		30	
$V_{CE(sat)}$	*Collector-Emitter Saturation Voltage	$I_C = 2\text{A}, I_B = 0.4\text{A}$ $I_C = 5\text{A}, I_B = 1\text{A}$ $I_C = 8\text{A}, I_B = 2\text{A}$			1	V
					2	V
					3	V
$V_{BE(sat)}$	*Base-Emitter Saturation Voltage	$I_C = 2\text{A}, I_B = 0.4\text{A}$ $I_C = 5\text{A}, I_B = 1\text{A}$			1.2	V
					1.6	V
C_{ob}	Output Capacitance	$V_{CB} = 10\text{V}, f = 0.1\text{MHz}$		110		pF
f_T	Current Gain Bandwidth Product	$V_{CE} = 10\text{V}, I_C = 0.5\text{A}$	4			MHz
t_{ON}	Turn ON Time	$V_{CC} = 125\text{V}, I_C = 5\text{A}$ $I_{B1} = -I_{B2} = 1\text{A}$ $R_L = 50\Omega$			1.6	μs
t_S	Storage Time				3	μs
t_F	Fall Time				0.7	μs

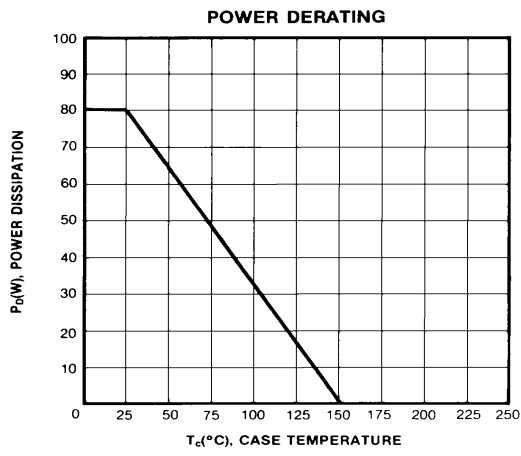
* Pulse test: $PW \leq 300\mu\text{s}$, Duty cycle $\leq 2\%$

Typical Characteristics



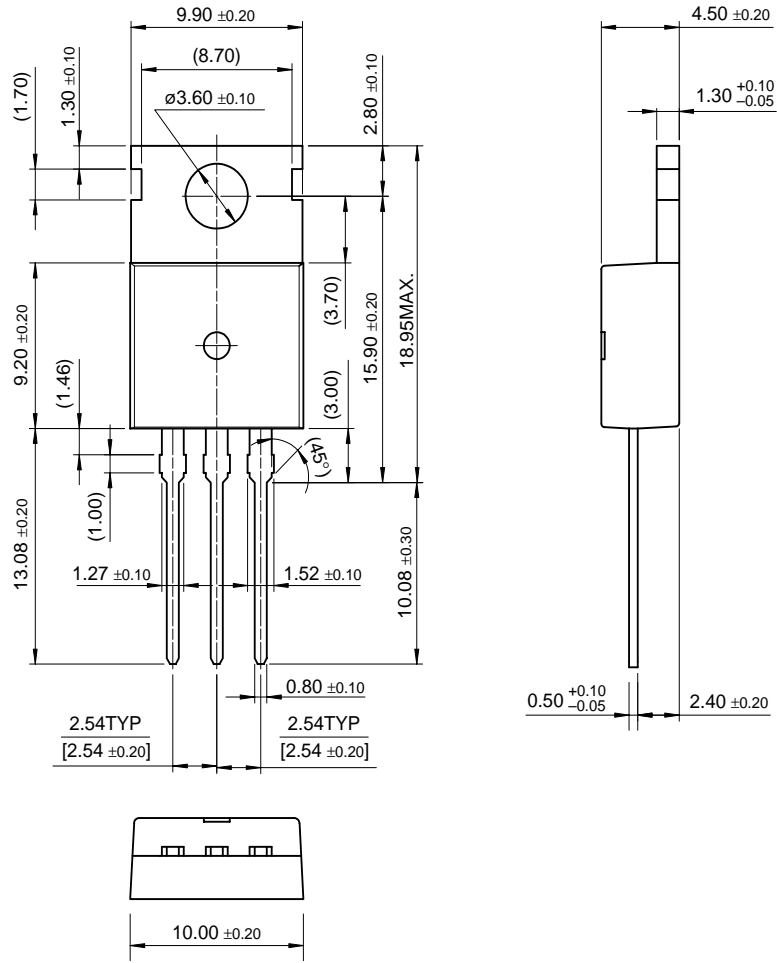
Typical Characteristics (continued)

KSE13006/13007



Package Dimensions

TO-220



KSE13006/13007

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