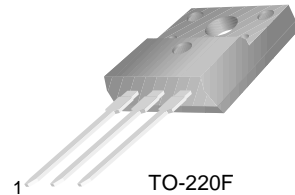


KSE13007F

KSE13007F

High Voltage Switch Mode Application

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



TO-220F
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	700	V
V_{CEO}	Collector- Emitter Voltage	400	V
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 ($T_C=25^\circ\text{C}$)	40	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-Base Breakdown Voltage	$I_C = 10\text{mA}, I_B = 0$	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 5		60 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 2 3	V V 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 1.6	V 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_{STG}	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

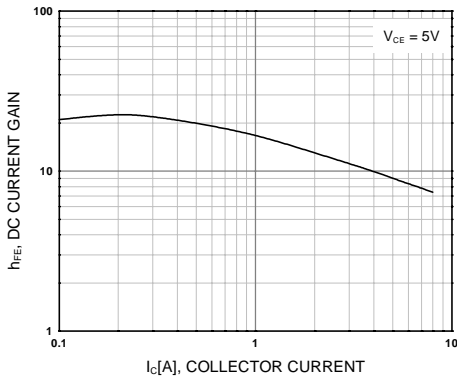


Figure 1. DC current Gain

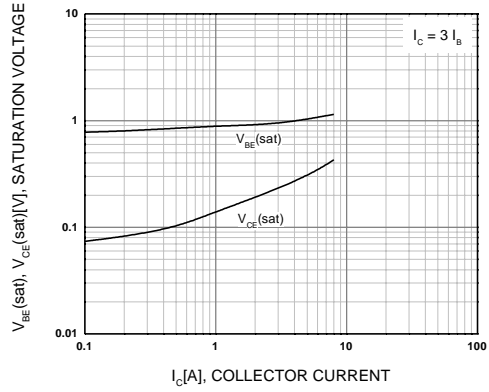


Figure 2. Base-Emitter Saturation Voltage
Collector-Emitter Saturation Voltage

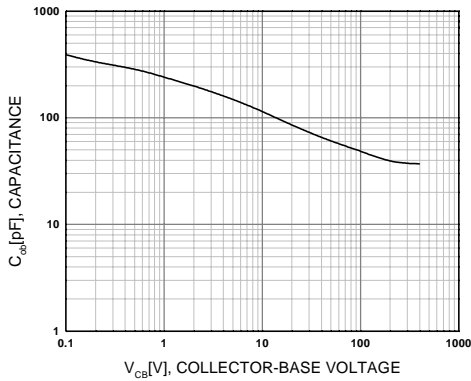


Figure 3. Collector Output Capacitance

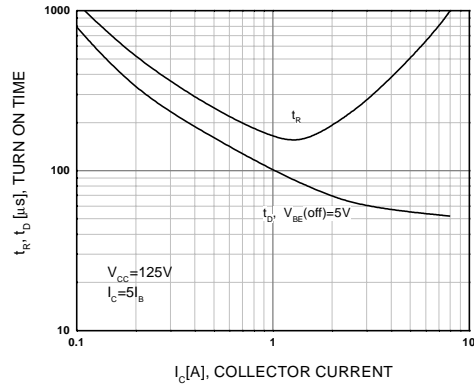


Figure 4. Turn On Time

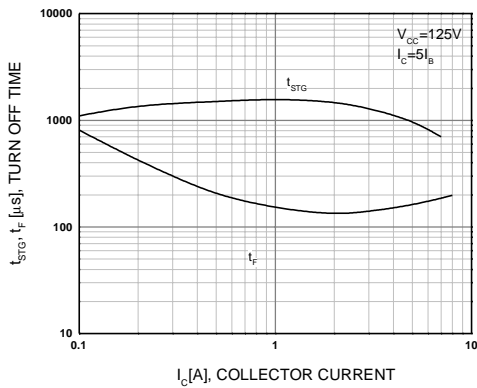


Figure 5. Turn Off Time

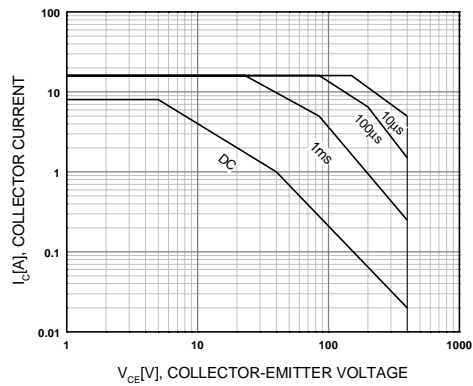


Figure 6. Safe Operating Area

Typical Characteristics (Continued)

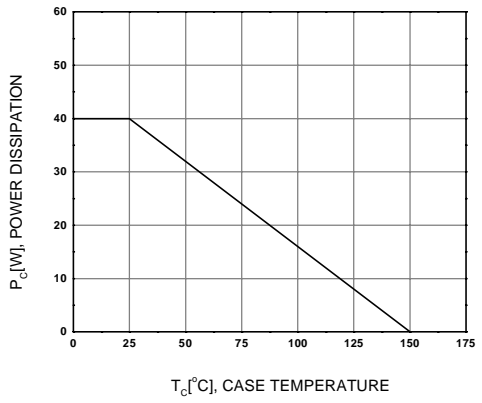
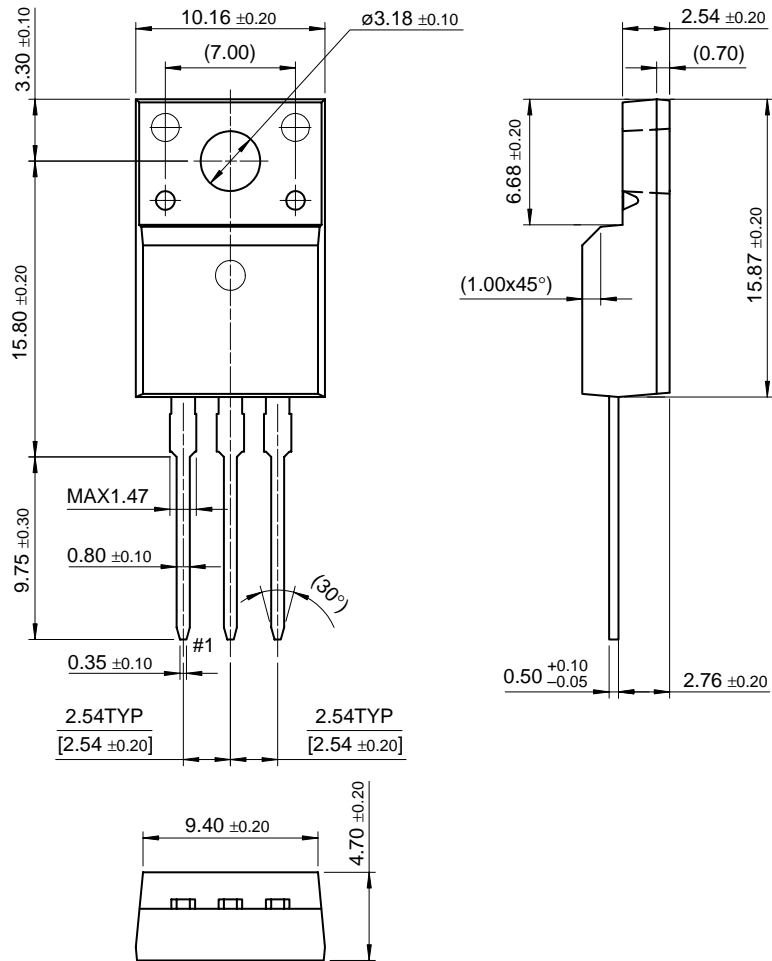


Figure 7. Power Derating

Package Dimensions

KSE13007F

TO-220F



Dimensions in Millimeters

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KSE13007F
NPN Silicon Transistor

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- Suitable for Switching Regulator and Motor Control

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Applications

High Voltage Switch Mode

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Product status/pricing/packaging

Product	Product status	Pricing*	Package type	Leads	Packing method
KSE13007FH3SM	Full Production	\$0.61	TO-220F	3	BULK
KSE13007FSM	Full Production	\$0.61	TO-220F	3	BULK
KSE13007FSMTU	Full Production	\$0.61	TO-220F	3	RAIL
KSE13007FH1SM	Full Production	\$0.61	TO-220F	3	BULK
KSE13007FH2SMTU	Full Production	\$0.61	TO-220F	3	RAIL
KSE13007FH2SM	Full Production	\$0.61	TO-220F	3	BULK
KSE13007FH1SMTU	Full Production	\$0.61	TO-220F	3	RAIL

* 1,000 piece Budgetary Pricing

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