

KSE13005F

NPN SILICON TRANSISTOR

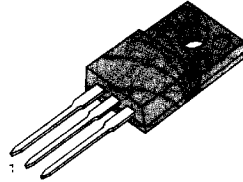
HIGH VOLTAGE SWITCH MODE APPLICATIONS

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

ABSOLUTE MAXIMUM RATINGS

Characteristic	Symbol	Rating	Unit
Collector Base Voltage	V_{CBO}	700	V
Collector Emitter Voltage	V_{CEO}	400	V
Emitter Base Voltage	V_{EBO}	9	V
Collector Current (DC)	I_C	4	A
Collector Current (Pulse)	I_C	8	A
Base Current	I_B	2	A
Collector Dissipation ($T_C=25^\circ\text{C}$)	P_C	30	W
Junction Temperature	T_J	150	$^\circ\text{C}$
Storage Temperature	T_{STG}	-65 ~ 150	$^\circ\text{C}$

TO-220F



1. Base 2. Collector 3. Emitter

ELECTRICAL CHARACTERISTICS ($T_C=25^\circ\text{C}$)

Characteristic	Symbol	Test Condition	Min	Typ	Max	Unit
* Collector- Base Breakdown Voltage	$V_{CEO(sus)}$	$I_C = 10\text{mA}, I_B = 0$	400			V
Emitter- Base Breakdown Voltage	I_{EBO}	$V_{EB} = 9\text{V}, I_C = 0$			1	mA
* DC Current Gain	h_{FE}	$V_{CE} = 5\text{V}, I_C = 1\text{A}$	10		60	
		$V_{CE} = 5\text{V}, I_C = 2\text{A}$	8		40	
* Collector Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 1\text{A}, I_B = 0.2\text{A}$			0.5	V
		$I_C = 2\text{A}, I_B = 0.5\text{A}$			0.6	V
		$I_C = 4\text{A}, I_B = 1\text{A}$			1	V
* Base Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = 1\text{A}, I_B = 0.2\text{A}$			1.2	V
		$I_C = 2\text{A}, I_B = 0.5\text{A}$			1.6	V
Output Capacitance	C_{OB}	$V_{CB} = 10\text{V}, f = 0.1\text{MHz}$		65		pF
Current Gain Bandwidth Product	f_T	$V_{CE} = 10\text{V}, I_C = 0.5\text{A}$	4			MHz
Turn On Time	t_{ON}	$V_{CC} = 125\text{V}, I_C = 2\text{A}$			0.8	μs
Storage Time	t_{STG}	$I_{B1} = -I_{B2} = 0.4\text{A}$			4	μs
Fall Time	t_F				0.9	μs

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