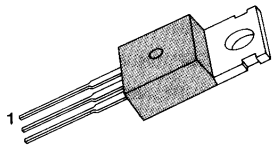
KSE13006/13007 NPN SILICON TRANSISTOR

HIGH VOLTAGE SWITCH MODE APPLICATION

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

TO-220



1.Base 2.Collector 3.Emitter

ABSOLUTE MAXIMUM RATINGS

Characteristic	Symbol	Rating	Unit
Collector Base Voltage : KSE13006	V_{CBO}	600	V
: KSE13007		700	V
Collector Emitter Voltage : KSE13006	V_{CEO}	300	V
: KSE13007		400	V
Emitter Base Voltage	V_{EBO}	9	V
Collector Current (DC)	I_C	8	A
Collector Current (Pulse)	I_C	16	A
Base Current	I_B	4	A
Collector Dissipation (T_C=25°C)	P_C	80	W
Junction Temperature	T_J	150	°C
Storage Temperature	T_{STG}	-65 ~ 150	°C

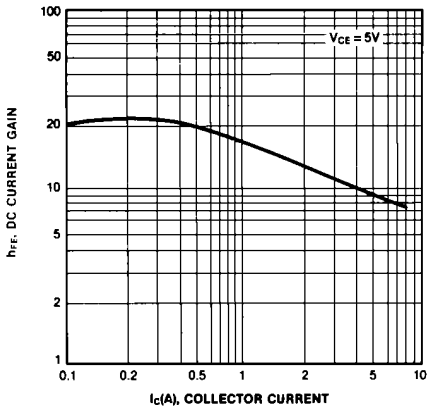
ELECTRICAL CHARACTERISTICS (TC =25°C)

Characteristic	Symbol	Test Conditions	Min	Typ	Max	Unit
* Collector Emitter Sustaining Voltage : KSE13006	V_{CEO}(sus)	I_C = 10mA, I_B = 0	300			V
: KSE13007			400			V
Emitter Cutoff Current	I_{EBO}	V_{EB} = 9V, I_C = 0			1	mA
* DC Current Gain	h_{FE}	V_{CE} = 5V, I_C = 2A	8		60	
		V_{CE} = 5V, I_C = 5A	5		30	
* Collector Emitter Saturation Voltage	V_{CE}(sat)	I_C = 2A, I_B = 0.4A			1	V
		I_C = 5A, I_B = 1A			2	V
		I_C = 8A, I_B = 2A			3	V
* Base Emitter Saturation Voltage	V_{BE} (sat)	I_C = 2A, I_B = 0.4A			1.2	V
		I_C = 5A, I_B = 1A			1.6	V
Output Capacitance	C_{OB}	V_{CB} = 10V, f = 0.1MHz		110		pF
Current Gain Bandwidth Product	f_T	V_{CE} = 10V, I_C = 0.5A	4			MHz
Turn On Time	t_{ON}	V_{CC} = 125V, I_C = 5A			1.6	µs
Storage Time	t_S	I_{B1} = -I_{B2} = 1A			3	µs
Fall Time	t_F				0.7	µs

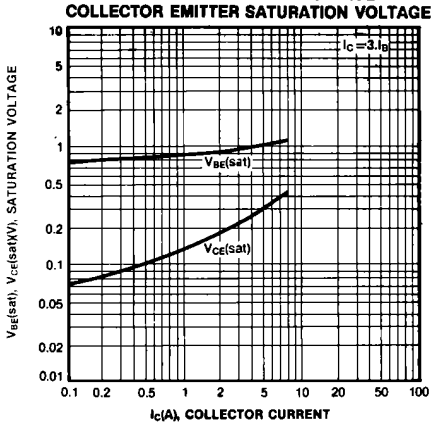
* Pulse test: PW≤300µs, Duty cycle≤2%

FAIRCHILD SEMICONDUCTOR TM

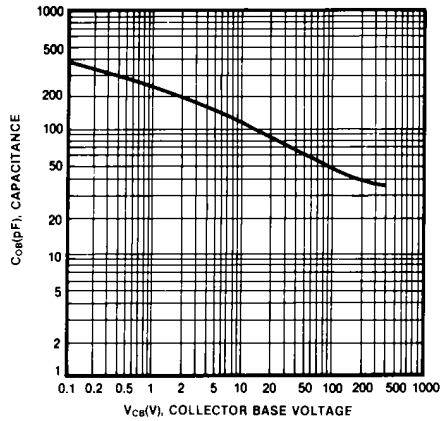
DC CURRENT GAIN



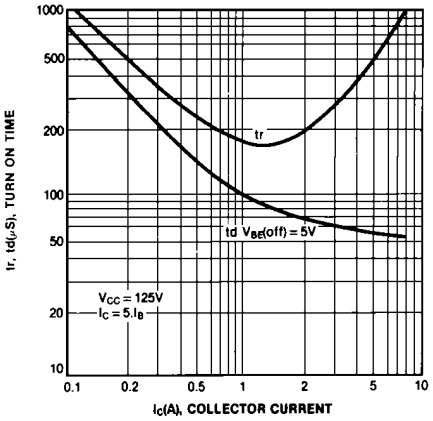
BASE EMITTER SATURATION VOLTAGE
COLLECTOR EMITTER SATURATION VOLTAGE



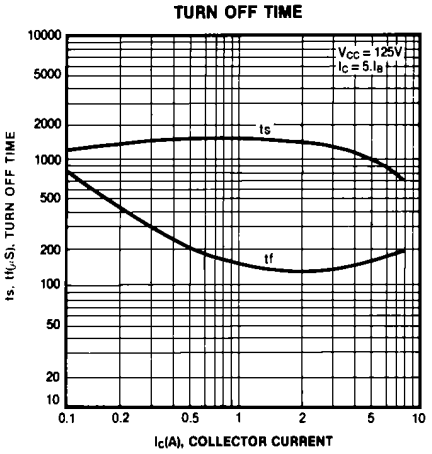
COLLECTOR OUTPUT CAPACITANCE



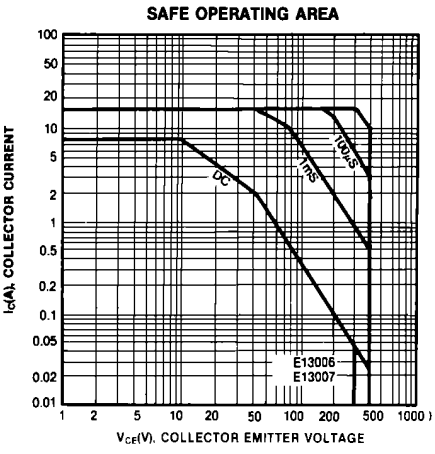
TURN ON TIME

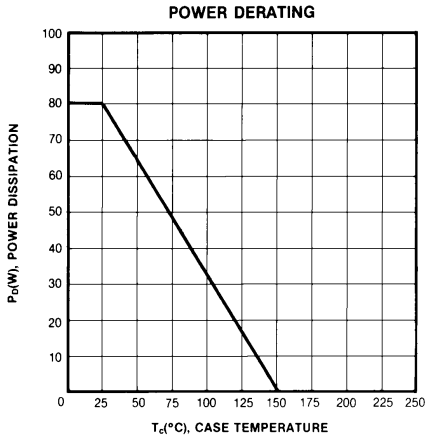


TURN OFF TIME



SAFE OPERATING AREA




POWER DERATING
P_D(W), POWER DISSIPATION
100
90
80
70
60
50
40
30
20
10
0
25
50
75
100
125
150
175
200
225
250
T_c(°C), CASE TEMPERATURE

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