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FAIRCHILD
SEMICONDUCTOR®

KSE44H Series

General Purpose Power Switching Applications

- Low Collector-Emitter Saturation Voltage : V_{CE}(sat) = 1V (Max.) @ 8A
- Fast Switching Speeds
- Complement to KSE45H

TO-220

1.Base 2.Collector 3.Emitter

NPN Epitaxial Silicon Transistor

Absolute Maximum Ratings T_C=25°C unless otherwise noted

Symbol	Parameter	Value	Units
V_{CEO}	Collector-Emitter Voltage : KSE44H 1,2	30	V
	: KSE44H 4,5	45	V
	: KSE44H 7,8	60	V
	: KSE44H 10,11	80	V
V_{EBO}	Emitter- Base Voltage	5	V
I_C	Collector Current (DC)	10	A
I_{CP}	*Collector Current (Pulse)	20	A
P_C	Collector Dissipation (T_C=25°C)	50	W
P_C	Collector Dissipation (T_a=25°C)	1.67	W
T_J	Junction Temperature	150	°C
T_{STG}	Storage Temperature	- 55 ~ 150	°C

Electrical Characteristics T_C=25°C unless otherwise noted

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
I_{CES}	Collector Cut-off Current	V_{CE} = Rated V_{CEO}, V_{EB} = 0			10	µA
I_{EBO}	Emitter Cut-off Current	V_{EB} = 5V, I_C = 0			100	µA
h_{FE}	*DC Current Gain					
	: KSE44H 1,4,7,10	V_{CE} = 1V, I_C = 2A	35			
	: KSE44H 2,5,8,11		60			
V_{CE}(sat)	*Collector-Emitter Saturation Voltage					
	: KSE44H 1, 4, 7 10	I_C = 8A, I_B = 0.8A			1	V
	: KSE44H 2, 5, 8,11	I_C = 8A, I_B = 0.4A			1	V
V_{BE} (sat)	*Base-Emitter Saturation Voltage	I_C = 8A, I_B = 0.8A			1.5	V
f_T	Current Gain Bandwidth Product	V_{CE} = 10V, I_C = 0.5A		50		MHz
C_{ob}	Output Capacitance	V_{CB} = 10V, f = 1MHz		130		pF
t_{ON}	Turn ON Time	V_{CC} =20V, I_C = 5A		300		ns
t_{STG}	Storage Time	I_{B1} = - I_{B2} = 0.5A		500		ns
t_F	Fall Time			140		ns

* Pulse test: PW≤300µs, Duty cycle≤2%

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Typical Characteristics

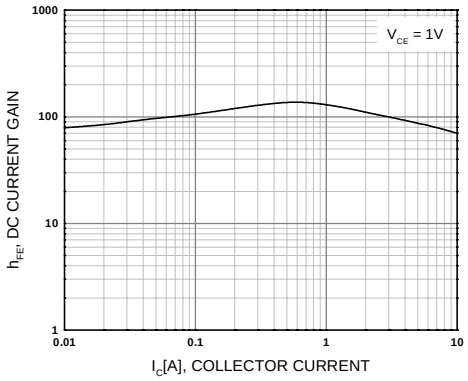

Figure 1. DC current Gain

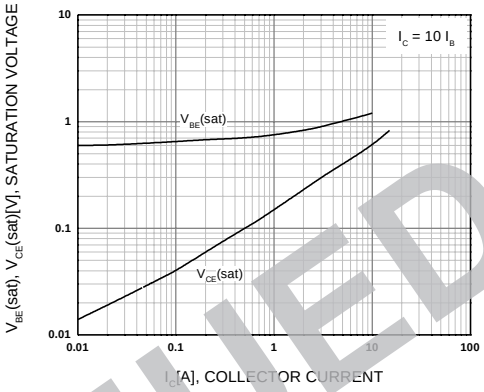

Figure 2. Base-Emitter Saturation Voltage Collector-Emitter Saturation Voltage

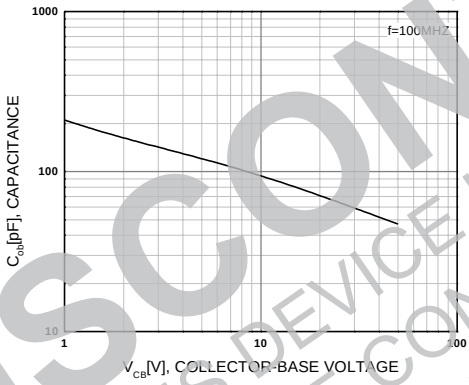

Figure 3. Collector Output Capacitance

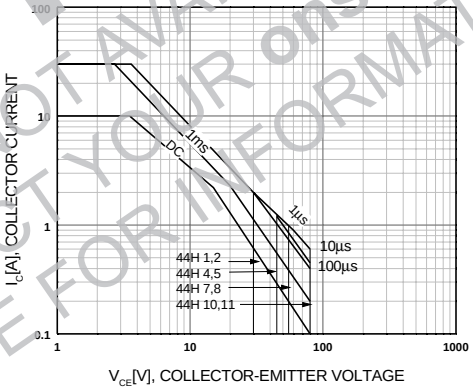

Figure 4. Safe Operating Area

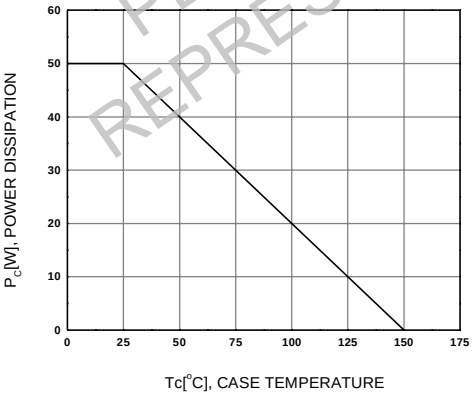

Figure 5. Power Derating

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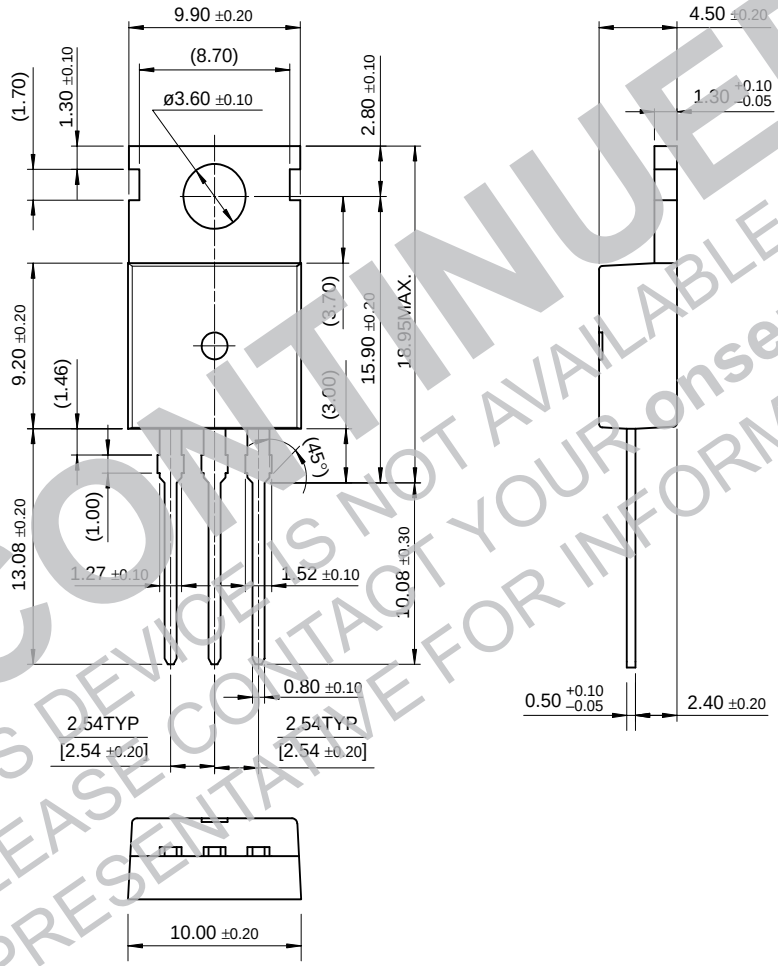
Package Demensions

TO-220



Dimensions in Millimeters

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