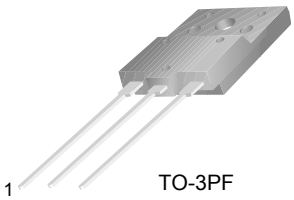
FAIRCHILD
SEMICONDUCTOR®

KSC5030F

High Voltage Fast Switching Transistor

Features

- Fast Speed Switching
- Wide Safe Operating Area



TO-3PF

1.Base 2.Collector 3.Emitter

Absolute Maximum Ratings

Symbol	Parameter	Value	Units
V_{CBO}	Collector-Base Voltage	1100	V
V_{CEO}	Collector-Emitter Voltage	800	V
V_{EBO}	Emitter-Base Voltage	7	V
I_C	Collector Current (DC)	6	A
I_{CP}	* Collector Current (Pulse)	20	A
P_C	Collector Dissipation (T_C = 25°C)	60	W
T_J	Junction Temperature	150	°C
T_{STG}	Storage Temperature	-55 ~ 150	°C

* Pulse Test: PW = 300μs, Duty Cycle = 2% Pulsed

Package Marking and Ordering Information

Device Marking	Device	Package	Reel Size	Tape Width	Quantity
KSC5030F	KSC5030FRTU	TO3PF	-	-	50

Electrical Characteristics T_C = 25°C unless otherwise noted

Symbol	Parameter	Conditions	Min.	Typ.	Max	Units
BV_{CBO}	Collector-Base Breakdown Voltage	I_C = 1mA, I_E = 0	1100			V
BV_{CEO}	Collector-Emitter Breakdown Voltage	I_C = 5mA, I_B = 0	800			V
BV_{EBO}	Emitter-Base Breakdown Voltage	I_E = 1mA, I_C = 0	7			V
V_{CEX}(sus)	Collector-Emitter Sustaining Voltage	I_C = 3A, I_{B1} = - I_{B2} = 0.6A L=1mH, Clamped	800			V
I_{CBO}	Collector Cut-off Current	V_{CB} = 800V, I_E = 0			10	μA
I_{EBO}	Emitter Cut-off Current	V_{EB} = 5V, I_C = 0			10	μA
h_{FE1} h_{FE2}	DC Current Gain	V_{CE} = 5V, I_C = 0.6A V_{CE} = 5V, I_C = 2.0A	10 8		40	
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	I_C = 3A, I_B = 0.6A			2.0	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	I_C = 3A, I_B = 0.6A			1.5	V
C_{OB}	Output Capacitance	V_{CB} = 10V, I_E = 0, f = 1MHz		120		pF
t_{ON}	Turn On Time	V_{CC}=400V, I_C=4A I_{B1}=0.8A, I_{B2}=-1.6A R_L=100Ω			0.5	μs
t_{STG}	Storage Time				3.0	μs
t_F	Fall Time				0.3	μs

h_{FE} Classification

Classification	R	O	Y
h_{FE1}	10 ~ 20	15 ~ 30	20 ~ 40

Typical Performance Characteristics

Figure 1. Static Characterstic

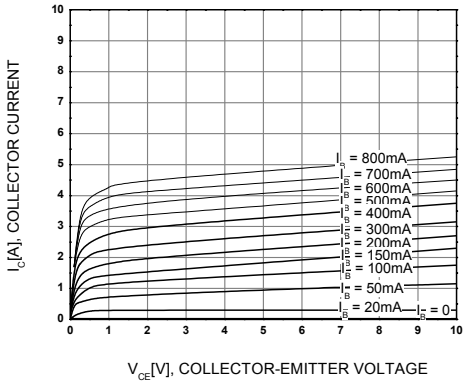


Figure 2. DC Current Gain

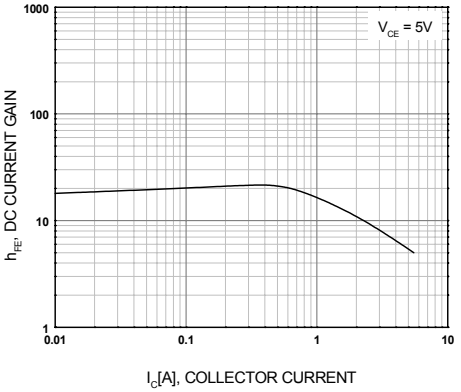


Figure 3. Collector-Emitter Saturation Voltage

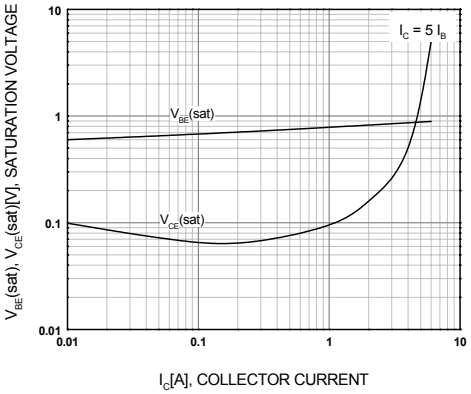


Figure 4. Base-Emitter On Voltage

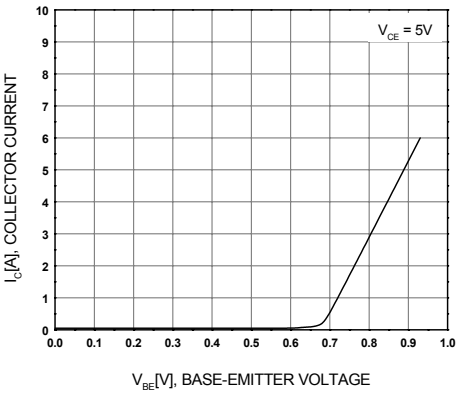


Figure 5. Switching Time

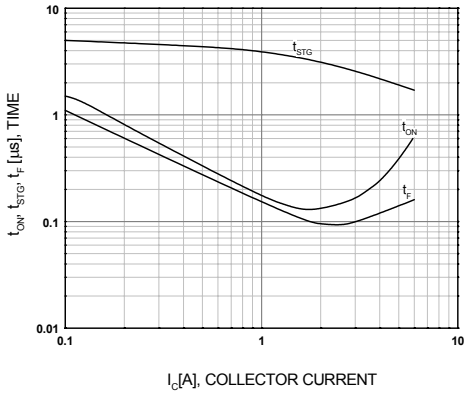
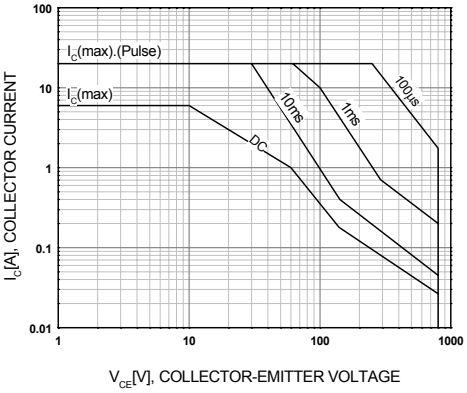


Figure 6. Forward Biased Safe Operating Area



Typical Performance Characteristics (Continued)

Figure 7. Reverse Biased Safe Operating Area

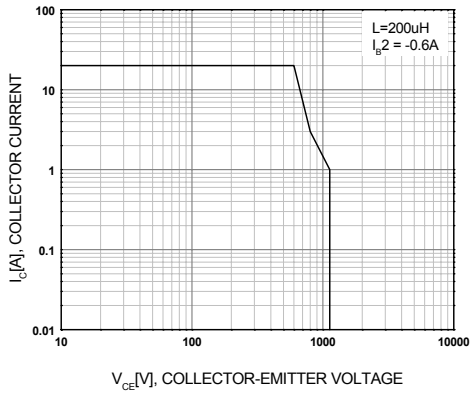
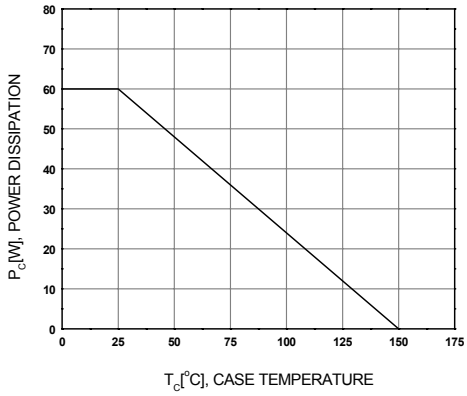
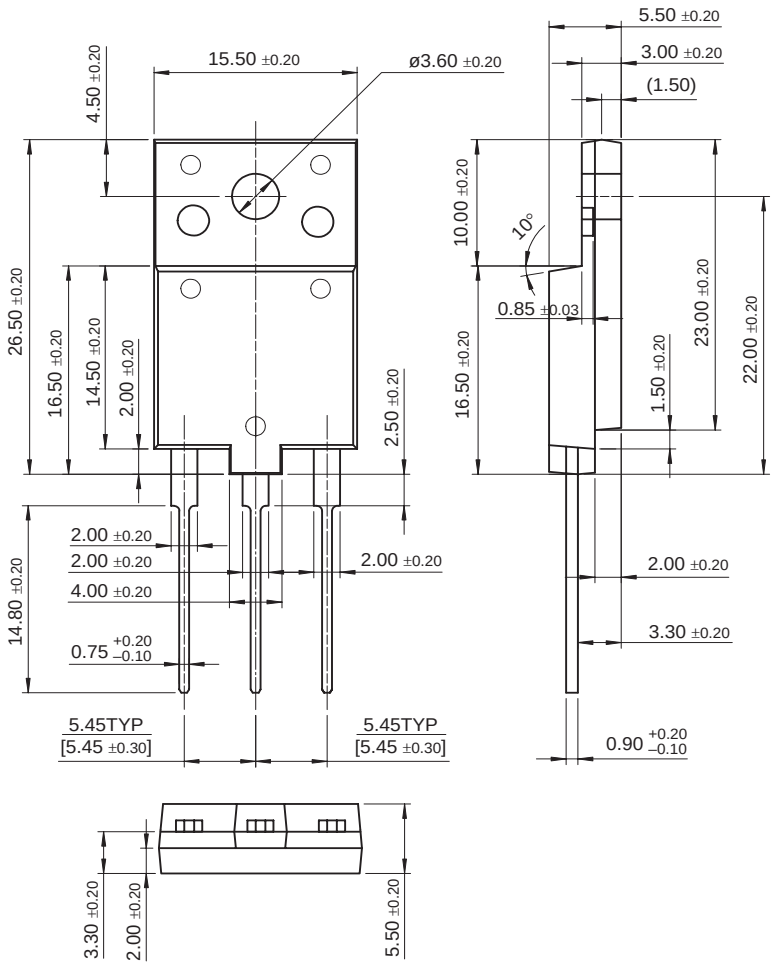


Figure 8. Power Derating Curve



Mechanical Dimensions

TO-3PF



Dimensions in Millimeters

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