

## **KSC5030F**

### **High Voltage Fast Switching Transistor**

### **Features**

- Fast Speed Switching
- Wide Safe Operating Area



### **Absolute Maximum Ratings**

Symbol	Parameter	Value	Units
V <sub>CBO</sub>	Collector-Base Voltage	1100	V
V <sub>CEO</sub>	Collector-Emitter Voltage	800	V
V <sub>EBO</sub>	Emitter-Base Voltage	7	V
I <sub>C</sub>	Collector Current (DC)	6	Α
I <sub>CP</sub>	* Collector Current (Pulse)	20	Α
P <sub>C</sub>	Collector Dissipation (T <sub>C</sub> = 25°C)	60	W
T <sub>J</sub>	Junction Temperature	150	°C
T <sub>STG</sub>	Storage Temperature	-55 ~ 150	°C

<sup>\*</sup> Pulse Test: PW =  $300\mu s$ , 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<sub>C</sub> = 25°C unless otherwise noted

Symbol	Parameter	Conditions	Min.	Тур.	Max	Units
BV <sub>CBO</sub>	Collector-Base Breakdown Voltage	I <sub>C</sub> = 1mA, I <sub>E</sub> = 0	1100			V
BV <sub>CEO</sub>	Collector-Emitter Breakdown Voltage	$I_{\rm C} = 5 {\rm mA}, I_{\rm B} = 0$	800			V
BV <sub>EBO</sub>	Emitter-Base Breakdown Voltage	I <sub>E</sub> = 1mA, I <sub>C</sub> = 0	7			V
V <sub>CEX</sub> (sus)	Collector-Emitter Sustaining Voltage	I <sub>C</sub> = 3A, I <sub>B1</sub> = - I <sub>B2</sub> = 0.6A L=1mH, Clamped	800			V
I <sub>CBO</sub>	Collector Cut-off Current	$V_{CB} = 800V, I_{E} = 0$			10	μА
I <sub>EBO</sub>	Emitter Cut-off Current	V <sub>EB</sub> = 5V, I <sub>C</sub> = 0			10	μА
h <sub>FE1</sub> h <sub>FE2</sub>	DC Current Gain	$V_{CE} = 5V, I_{C} = 0.6A$ $V_{CE} = 5V, I_{C} = 2.0A$	10 8		40	
V <sub>CE(sat)</sub>	Collector-Emitter Saturation Voltage	I <sub>C</sub> = 3A, I <sub>B</sub> = 0.6A			2.0	V
V <sub>BE(sat)</sub>	Base-Emitter Saturation Voltage	I <sub>C</sub> = 3A, I <sub>B</sub> = 0.6A			1.5	V
C <sub>OB</sub>	Output Capacitance	$V_{CB} = 10V, I_{E} = 0, f = 1MHz$		120		pF
t <sub>ON</sub>	Turn On Time	V <sub>CC</sub> =400V, I <sub>C</sub> =4A			0.5	μS
t <sub>STG</sub>	Storage Time	I <sub>B1</sub> =0.8A, I <sub>B2</sub> =-1.6A			3.0	μS
t <sub>F</sub>	Fall Time	$R_L=100\Omega$			0.3	μS

# h<sub>FE</sub> Classification

Classification	R	0	Y
h <sub>FE1</sub>	10 ~ 20	15 ~ 30	20 ~ 40

## **Typical Performance Characteristics**

Figure 1. Static Characterstic

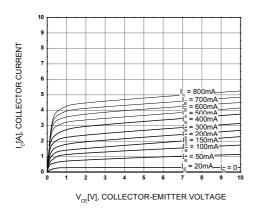


Figure 3. Collector-Emitter Saturation Voltage

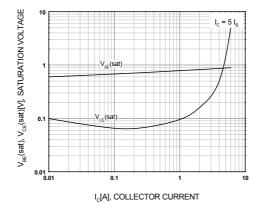
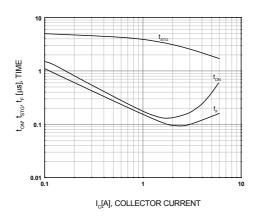


Figure 5. Switching Time



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Figure 2. DC Current Gain

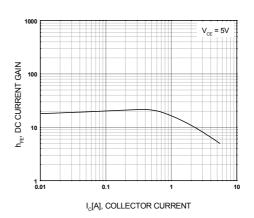


Figure 4. Base-Emitter On Voltage

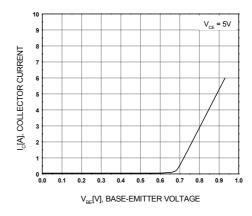
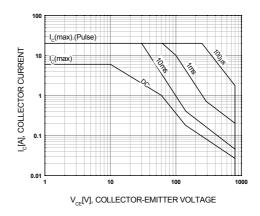


Figure 6. Forward Biased Safe Operating Area



## **Typical Performance Characteristics** (Continued)

Figure 7. Reverse Biased Safe Operating Area

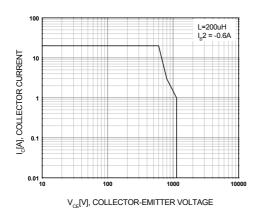
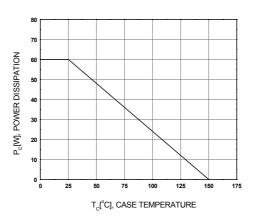
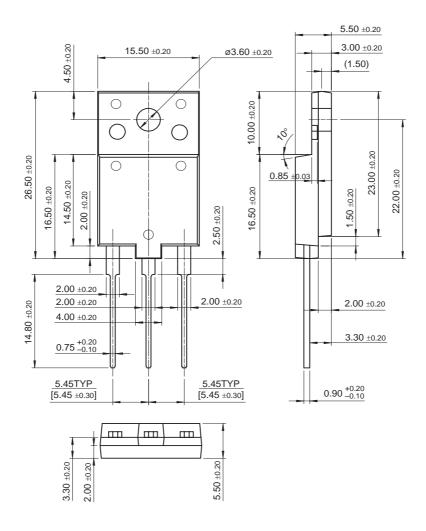


Figure 8. Power Derating Curve



### **Mechanical Dimensions**

# TO-3PF



Dimensions in Millimeters

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