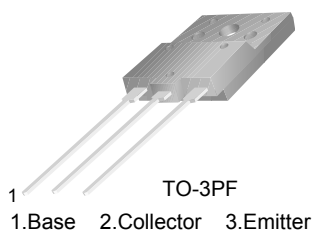


# KSC5030F

## High Voltage Fast Switching Transistor

### Features

- Fast Speed Switching
- Wide Safe Operating Area



### 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 ( $T_C = 25^\circ\text{C}$ )	60	W
$T_J$	Junction Temperature	150	$^\circ\text{C}$
$T_{STG}$	Storage Temperature	-55 ~ 150	$^\circ\text{C}$

\* Pulse Test: PW = 300 $\mu\text{s}$ , Duty Cycle = 2% Pulsed

### Package Marking and Ordering Information

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

**Electrical Characteristics**  $T_C = 25^\circ\text{C}$  unless otherwise noted

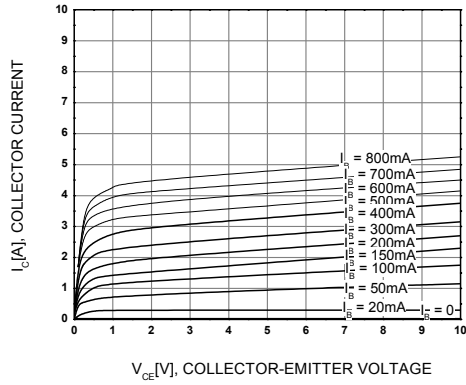
Symbol	Parameter	Conditions	Min.	Typ.	Max	Units
$BV_{CBO}$	Collector-Base Breakdown Voltage	$I_C = 1\text{mA}, I_E = 0$	1100			V
$BV_{CEO}$	Collector-Emitter Breakdown Voltage	$I_C = 5\text{mA}, I_B = 0$	800			V
$BV_{EBO}$	Emitter-Base Breakdown Voltage	$I_E = 1\text{mA}, I_C = 0$	7			V
$V_{CEX(sus)}$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

 **$h_{FE}$  Classification**

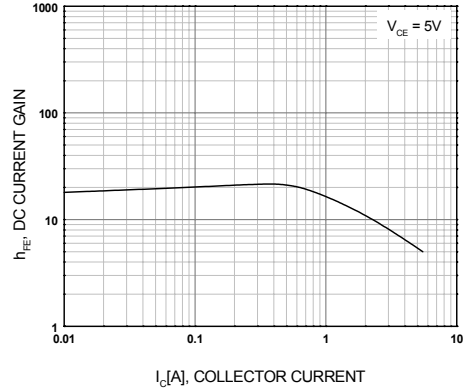
Classification	R	O	Y
$h_{FE1}$	10 ~ 20	15 ~ 30	20 ~ 40

## Typical Performance Characteristics

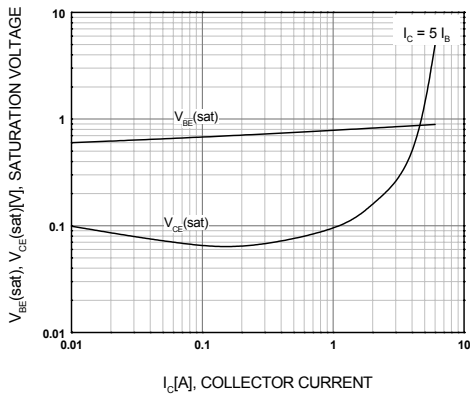
**Figure 1. Static Characteristic**



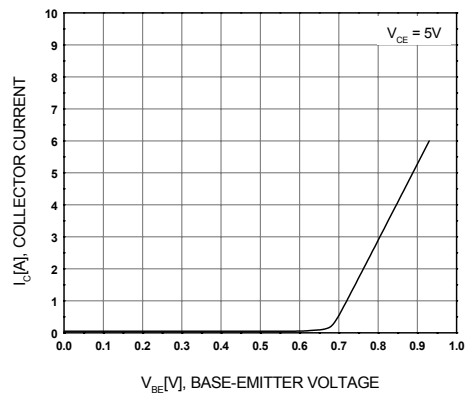
**Figure 2. DC Current Gain**



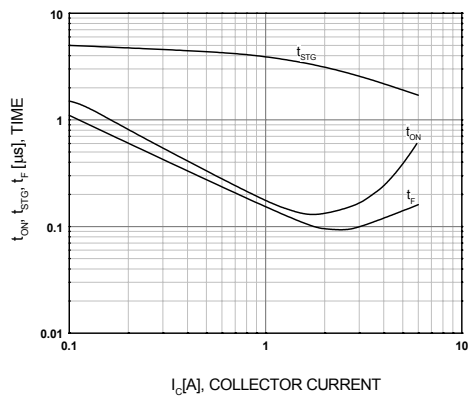
**Figure 3. Collector-Emitter Saturation Voltage**



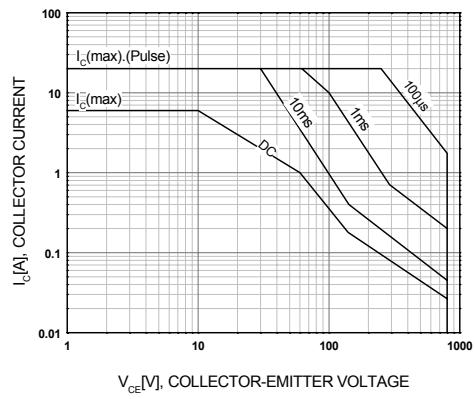
**Figure 4. Base-Emitter On Voltage**



**Figure 5. Switching Time**

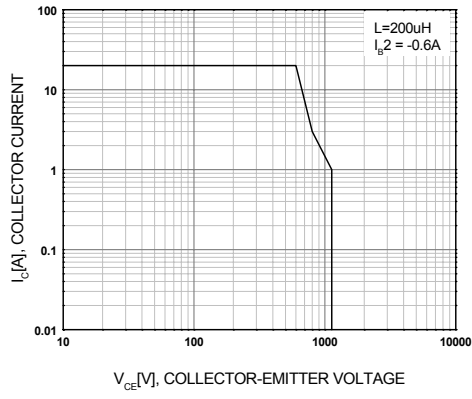


**Figure 6. Forward Biased Safe Operating Area**

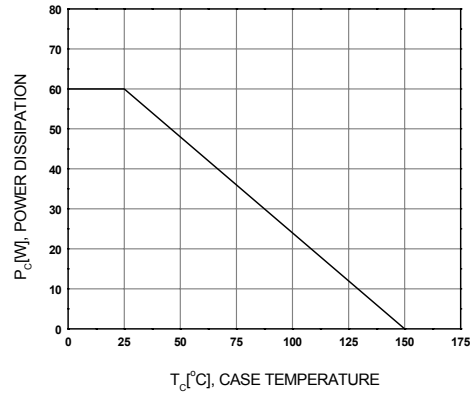


**Typical Performance Characteristics (Continued)**

**Figure 7. Reverse Biased Safe Operating Area**

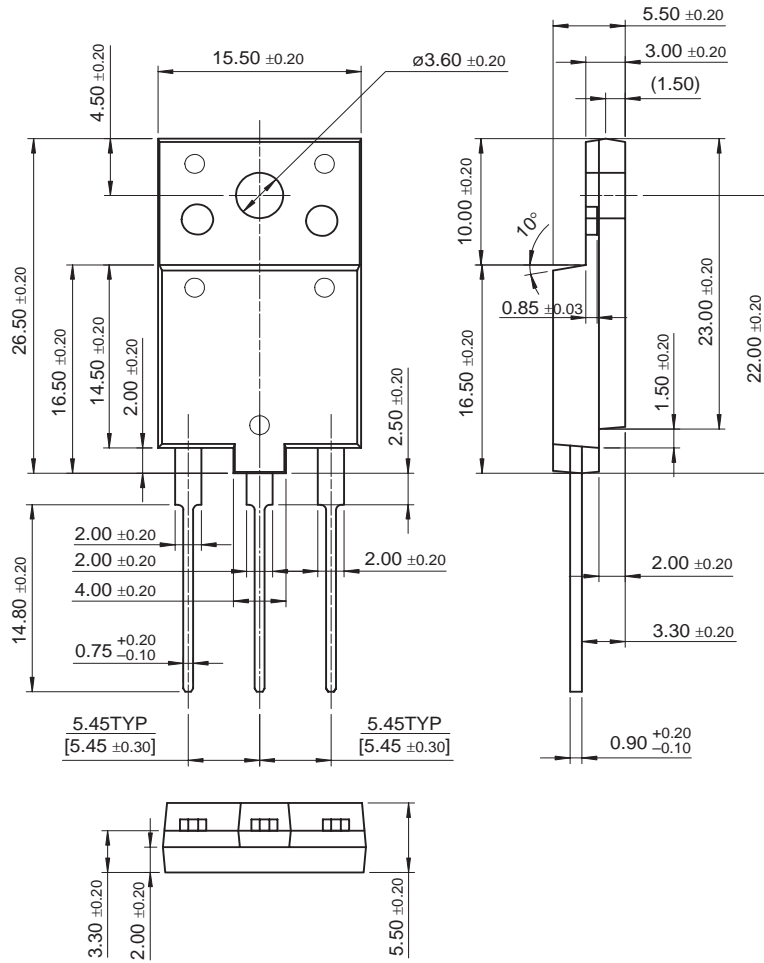


**Figure 8. Power Derating Curve**



Mechanical Dimensions

TO-3PF



Dimensions in Millimeters

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CROSSVOLT™	GTO™	MICROWIRE™	Quiet Series™	TruTranslation™
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EcoSPARK™	I <sup>2</sup> C™	MSXPro™	RapidConnect™	UltraFET®
E <sup>2</sup> CMOS™	i-Lo™	OCX™	μSerDes™	UniFET™
EnSigna™	ImpliedDisconnect™	OCXPro™	Scalar Pump™	VCX™
FACT™	IntelliMAX™	OPTOLOGIC®	SILENT SWITCHER®	Wire™
FACT Quiet Series™		OPTOPLANAR™	SMART START™	
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The Power Franchise®		POP™	Stealth™	
Programmable Active Droop™		Power247™	SuperFET™	
		PowerEdge™	SuperSOT™-3	

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