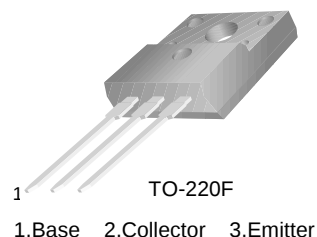


KSC5405F

KSC5405F

High Voltage Power Switching Applications



NPN Silicon Transistor

Absolute Maximum Ratings $T_C=25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Value	Units
V_{CES}	Collector-Base Voltage	1000	V
V_{CEO}	Collector-Emitter Voltage	450	V
V_{EBO}	Emitter-Base Voltage	9	V
I_C	Collector Current (DC)	5	A
I_{CP}	Collector Current (Pulse)	10	A
I_B	Base Current (DC)	2	A
I_{BP}	Base Current (Pulse)	4	A
P_C	Collector Dissipation ($T_C=25^\circ\text{C}$)	40	W
T_J	Junction Temperature	150	$^\circ\text{C}$
T_{STG}	Storage Temperature	- 65 ~ 150	$^\circ\text{C}$

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

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
$V_{CEO}(\text{sus})$	*Collector-Emitter Sustaining Voltage	$I_C = 100\text{mA}, I_B = 0$	450			V
I_{CES}	Collector Cut-off Current	$V_{CE} = 1000\text{V}, V_{BE} = 0$			1	mA
I_{EBO}	Emitter Cut-off Current	$V_{BE} = 9\text{V}, I_C = 0$			10	mA
h_{FE}	DC Current Gain	$V_{CE}=5\text{V}, I_C=0.6\text{A}$	10		40	
$V_{CE}(\text{sat})$	Collector-Emitter Saturation Voltage	$I_C = 2.5\text{A}, I_B = 0.5\text{A}$			1.5	V
$V_{BE}(\text{sat})$	Base-Emitter Saturation Voltage:	$I_C = 2.5\text{A}, I_B = 0.5\text{A}$			1.3	V
t_{ON}	Turn On Time	$V_{CC} = 250\text{V}, I_C = 2.5\text{A}$			1	μs
t_{STG}	Storage Time	$I_{B1} = -I_{B2} = 0.5\text{A}$			4	μs
t_F	Fall Time	$R_L=100\Omega$			0.8	μs

* Pulsed Test: PW = 300uS, duty cycle = 1.5%

Typical Characteristics

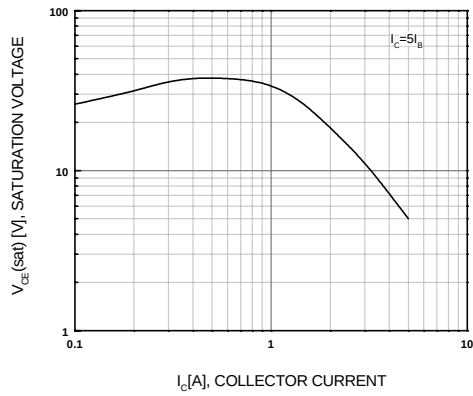


Figure 1. DC current Gain

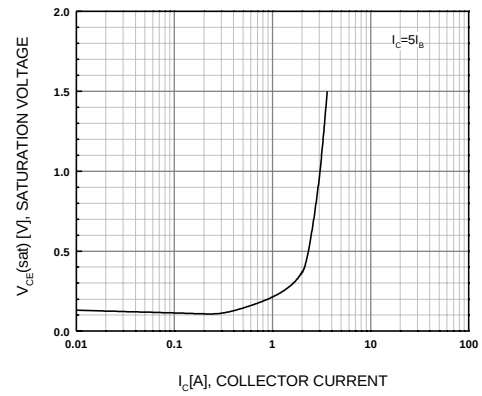


Figure 2. Collector-Emitter Saturation Voltage

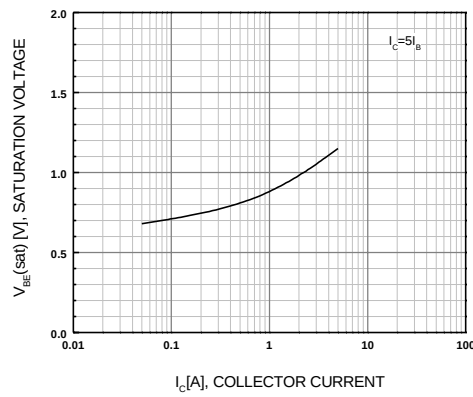


Figure 3. Base-Emitter Saturation Voltage

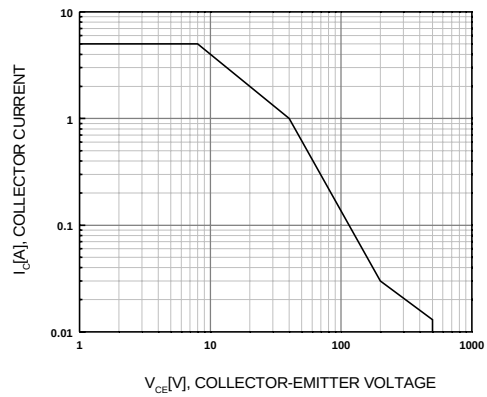


Figure 4. Safe Operating Area

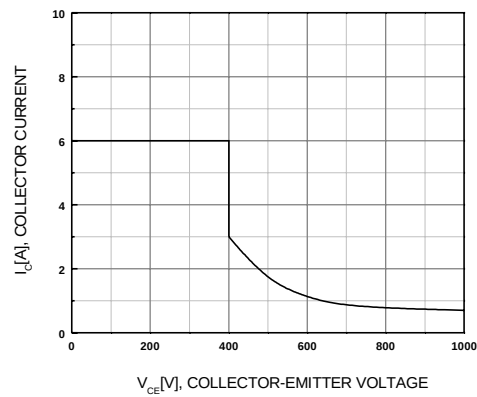


Figure 5. Reverse Bias Safe Operating Area

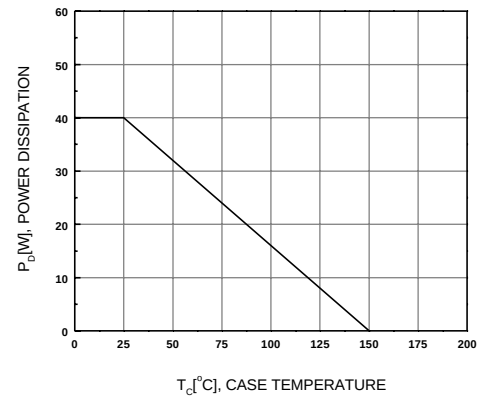
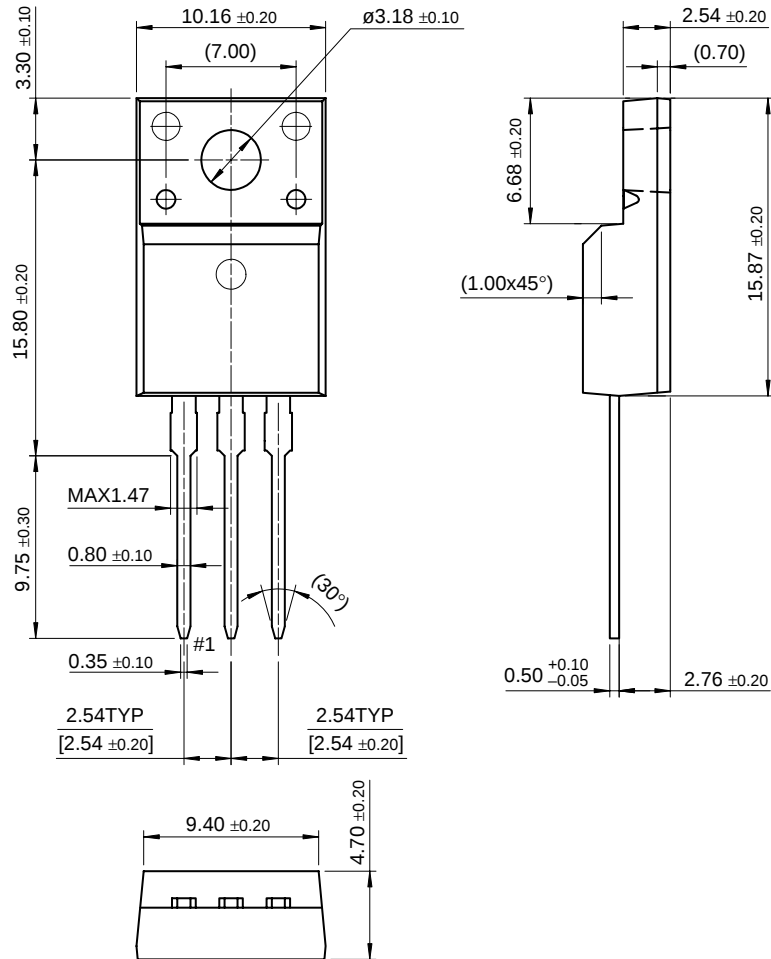


Figure 6. Power Derating

Package Dimensions

TO-220F



Dimensions in Millimeters

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