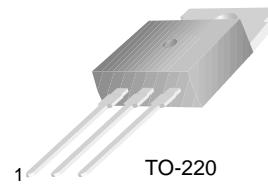




KSA1010

High Speed High Voltage Switching

- Industrial Use
- Complement to KSC2334



1.Base 2.Collector 3.Emitter

PNP Epitaxial Silicon Transistor

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

Symbol	Parameter	Value	Units
V_{CBO}	Collector-Base Voltage	- 100	V
V_{CEO}	Collector-Emitter Voltage	- 100	V
V_{EBO}	Emitter-Base Voltage	- 7	V
I_C	Collector Current (DC)	- 7	A
I_{CP}	*Collector Current (Pulse)	- 15	A
I_B	Base Current	- 3.5	A
P_C	Collector Dissipation ($T_C=25^\circ\text{C}$)	40	W
	Collector Dissipation ($T_a=25^\circ\text{C}$)	1.5	W
T_J	Junction Temperature	150	$^\circ\text{C}$
T_{STG}	Storage Temperature	- 55 ~ 150	$^\circ\text{C}$

* PW≤300μs, Duty Cycle≤10%

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

Symbol	Parameter	Test Condition	Min.	Max.	Units
$V_{CEO(\text{sus})}$	Collector-Emitter Sustaining Voltage	$I_C = -5\text{A}$, $I_{B1} = -0.5\text{A}$, $L = 1\text{mH}$	- 100		V
$V_{CEX(\text{sus})1}$	Collector-Emitter Sustaining Voltage	$I_C = -5\text{A}$, $I_{B1} = -I_{B2} = -0.5\text{A}$ $V_{BE(\text{off})} = 5\text{V}$, $L = 180\mu\text{H}$ Clamped	- 100		V
$V_{CEX(\text{sus})2}$	Collector-Emitter Sustaining Voltage	$I_C = -10\text{A}$, $I_{B1} = -1\text{A}$ $I_{B2} = 0.5\text{A}$, $V_{BE(\text{off})} = 5\text{V}$ $L = 180\mu\text{H}$, Clamped	- 100		V
I_{CBO}	Collector Cut-off Current	$V_{CB} = -100\text{V}$, $I_E = 0$		- 10	μA
I_{CER}	Collector Cut-off Current	$V_{CE} = -100\text{V}$, $R_{BE} = 51\Omega$ $T_C = 125^\circ\text{C}$		- 1	mA
I_{CEX1}	Collector Cut-off Current	$V_{CE} = -100\text{V}$, $V_{BE(\text{off})} = 1.5\text{V}$		- 10	μA
I_{CEX2}	Collector Cut-off Current	$V_{CE} = -100\text{V}$, $V_{BE(\text{off})} = 1.5\text{V}$ $T_C = 125^\circ\text{C}$		- 1	mA
I_{EBO}	Emitter Cut-off Current	$V_{EB} = -5\text{V}$, $I_C = 0$		- 10	μA
h_{FE1} h_{FE2} h_{FE3}	* DC Current Gain	$V_{CE} = -5\text{V}$, $I_C = -0.5\text{A}$ $V_{CE} = -5\text{V}$, $I_C = -3\text{A}$ $V_{CE} = -5\text{V}$, $I_C = -5\text{A}$	40 40 20	200	
$V_{CE(\text{sat})}$	* Collector-Emitter Saturation Voltage	$I_C = -5\text{A}$, $I_B = -0.5\text{A}$		- 0.6	V
$V_{BE(\text{sat})}$	* Base-Emitter Saturation Voltage	$I_C = -5\text{A}$, $I_B = -0.5\text{A}$		- 1.5	V
t_{ON}	Turn On Time	$V_{CC} = -50\text{V}$, $I_C = -5\text{A}$, $I_{B1} = -I_{B2} = -0.5\text{A}$ $R_L = 10\Omega$		0.5	μs
t_{STG}	Storage Time			1.5	μs
t_F	Fall Time			0.5	μs

Pulse Test: PW≤350μs, Duty Cycle≤2%

 h_{FE} Classification

Classification	R	O	Y
h_{FE2}	40 ~ 80	60 ~ 120	100 ~ 200

Typical Characteristics

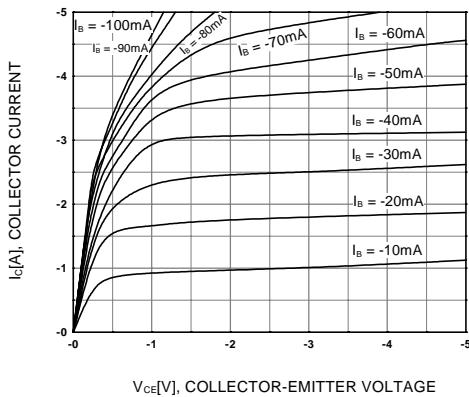


Figure 1. Static Characteristic

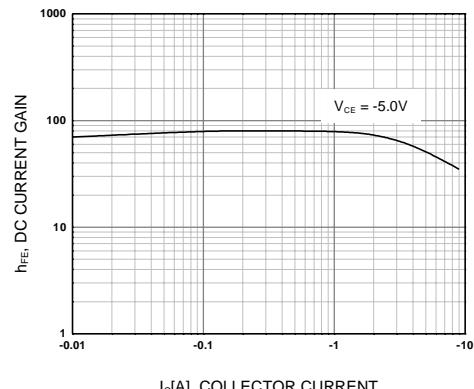


Figure 2. DC current Gain

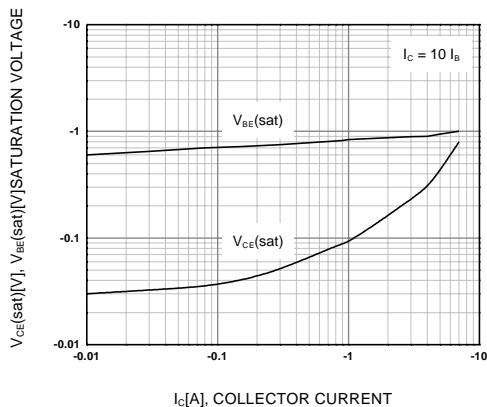


Figure 3. Base-Emitter Saturation Voltage
Collector-Emitter Saturation Voltage

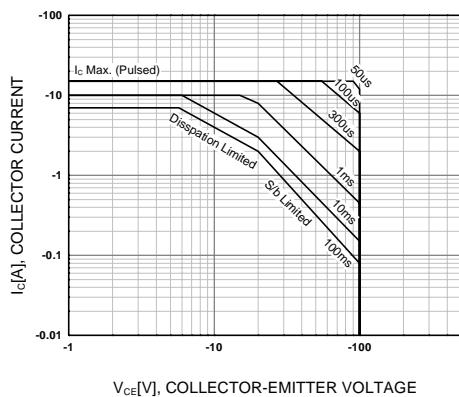


Figure 4. Safe Operating Area

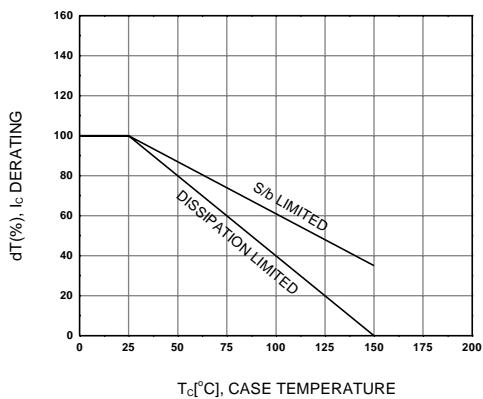


Figure 5. Derating Curve of Safe Operating Areas

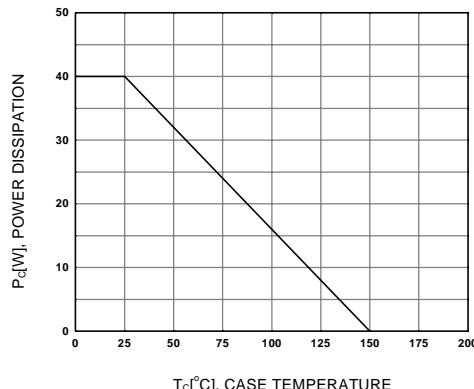


Figure 6. Power Derating