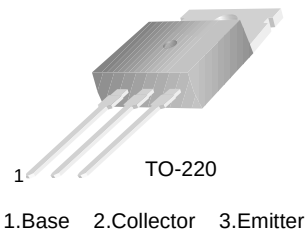


KSC5020

KSC5020

High Voltage, High Quality

- High Speed Switching : $t_F=0.1\mu s$
- Wide SOA



NPN Silicon Transistor

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

Symbol	Parameter	Value	Units
V_{CBO}	Collector-Base Voltage	800	V
V_{CEO}	Collector-Emitter Voltage	500	V
V_{EBO}	Emitter-Base Voltage	7	V
I_C	Collector Current (DC)	3	A
I_{CP}	Collector Current (Pulse)	6	A
I_B	Base Current (DC)	1	A
P_C	Collector Dissipation ($T_C=25^\circ C$)	40	W
T_J	Junction Temperature	150	$^\circ C$
T_{STG}	Storage Temperature	- 55 ~ 150	$^\circ C$

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

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
BV_{CBO}	Collector-Base Breakdown Voltage	$I_C = 1mA, I_E = 0$	800			V
BV_{CEO}	Collector-Emitter Breakdown Voltage	$I_C = 5mA, I_B = 0$	500			V
BV_{EBO}	Emitter-Base Breakdown Voltage	$I_E = 1mA, I_C = 0$	7			V
$V_{CEX(SUS)}$	Collector-Emitter Sustaining Voltage	$I_C = 1.5A, I_{B1} = -I_{B2} = 0.6A$ $L = 2mH, \text{Clamped}$	500			V
I_{CBO}	Collector Cut-off Current	$V_{CB} = 500V, I_E = 0$			10	μA
I_{EBO}	Emitter Cut-off Current	$V_{EB} = 5V, I_C = 0$			10	μA
h_{FE1} h_{FE2}	DC Current Gain	$V_{CE} = 5V, I_C = 0.3A$ $V_{CE} = 5V, I_C = 1.5A$	15 8		50	
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C = 1.5A, I_B = 0.3A$			1	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	$I_C = 1.5A, I_B = 0.3A$			1.5	V
C_{ob}	Output Capacitance	$V_{CB} = 10V, f = 1MHz$		50		pF
f_T	Current Gain Bandwidth Product	$V_{CE} = 10V, I_C = 0.3A$		18		MHz
t_{ON}	Turn ON Time	$V_{CC} = 200V$ $I_C = 5I_{B1} = -2.5I_{B2} = 2A$ $R_L = 100\Omega$			0.5	μs
t_{STG}	Storage Time				3	μs
t_F	Fall Time				0.3	μs

h_{FE} Classification

Classification	R	O	Y
h_{FE1}	15 ~ 30	20 ~ 40	30 ~ 50

Typical Characteristics

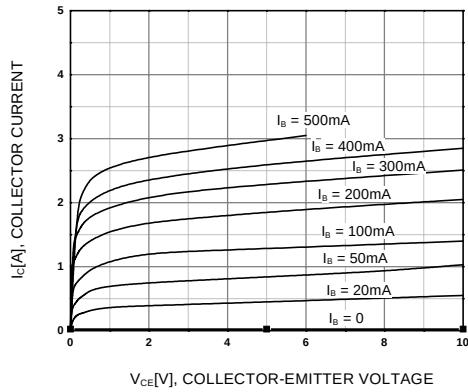


Figure 1. Static Characteristic

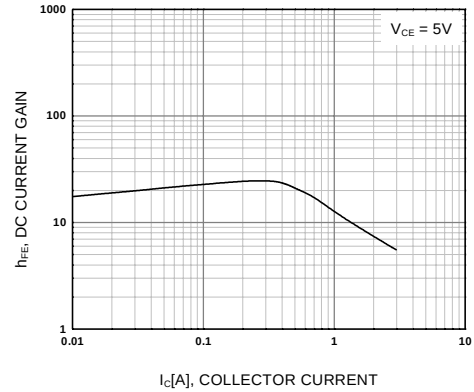


Figure 2. DC current Gain

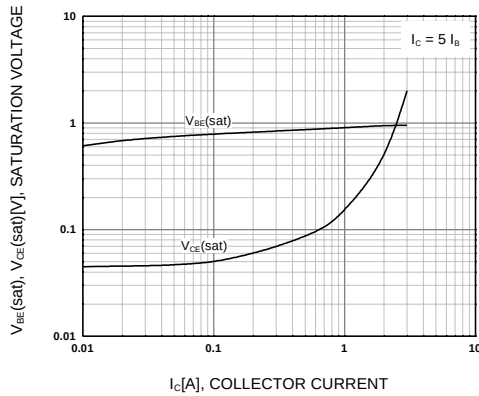


Figure 3. Collector-Emitter Saturation Voltage
Base-Emitter Saturation Voltage

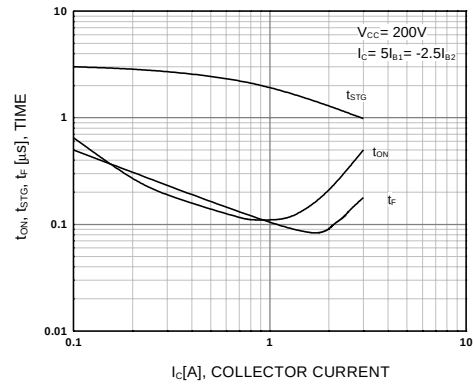


Figure 4. Turn On, Storage and Fall Time vs.
Collector Current

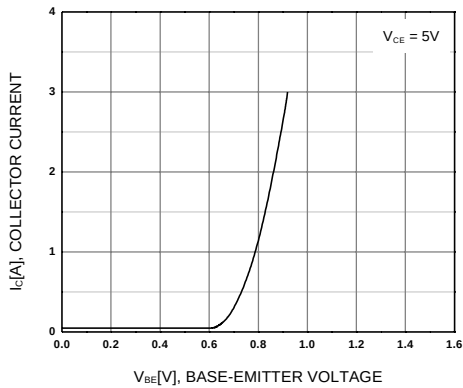


Figure 5. Base-Emitter On Voltage

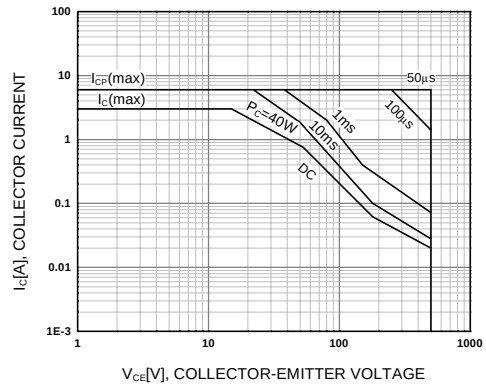


Figure 6. Forward Bias Safe Operating Area

Typical Characteristics (Continued)

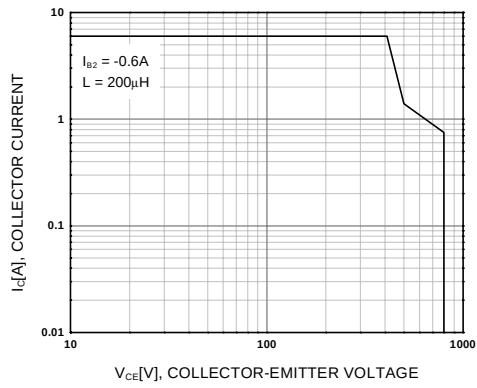


Figure 7. Reverse Bias Safe Operating Area

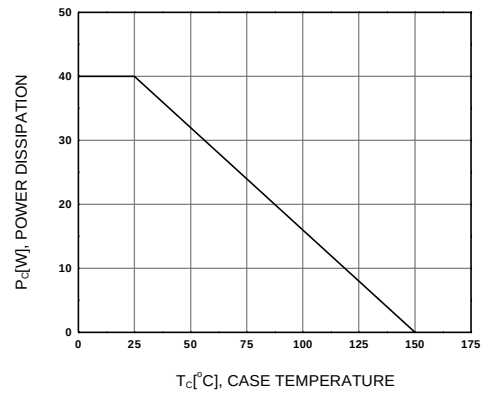


Figure 8. Power Derating

KSC5020

Technical drawing of a 3-pin connector with dimensions in millimeters. The drawing includes a front view, a side view, and a top view.

Front View Dimensions:

- Overall width: 9.90 ± 0.20
- Overall height: 18.95 MAX.
- Pin diameter: $\varnothing 3.60 \pm 0.10$
- Pin spacing (center-to-center): 1.27 ± 0.10 and 1.52 ± 0.10
- Base width: 10.00 ± 0.20
- Pin length: 10.08 ± 0.30
- Pin diameter at base: 0.80 ± 0.10
- Pin diameter at top: 1.30 ± 0.10
- Pin diameter at middle: 1.30 ± 0.10
- Pin diameter at bottom: 1.30 ± 0.10
- Pin diameter at top (inner): 1.30 ± 0.10
- Pin diameter at middle (inner): 1.30 ± 0.10
- Pin diameter at bottom (inner): 1.30 ± 0.10
- Pin diameter at top (outer): 1.30 ± 0.10
- Pin diameter at middle (outer): 1.30 ± 0.10
- Pin diameter at bottom (outer): 1.30 ± 0.10

Side View Dimensions:

- Overall width: 4.50 ± 0.20
- Pin diameter at top: 1.30 ± 0.10
- Pin diameter at middle: 1.30 ± 0.10
- Pin diameter at bottom: 1.30 ± 0.10
- Pin diameter at top (inner): 1.30 ± 0.10
- Pin diameter at middle (inner): 1.30 ± 0.10
- Pin diameter at bottom (inner): 1.30 ± 0.10
- Pin diameter at top (outer): 1.30 ± 0.10
- Pin diameter at middle (outer): 1.30 ± 0.10
- Pin diameter at bottom (outer): 1.30 ± 0.10

Top View Dimensions:

- Overall width: 10.00 ± 0.20
- Pin diameter at top: 1.30 ± 0.10
- Pin diameter at middle: 1.30 ± 0.10
- Pin diameter at bottom: 1.30 ± 0.10
- Pin diameter at top (inner): 1.30 ± 0.10
- Pin diameter at middle (inner): 1.30 ± 0.10
- Pin diameter at bottom (inner): 1.30 ± 0.10
- Pin diameter at top (outer): 1.30 ± 0.10
- Pin diameter at middle (outer): 1.30 ± 0.10
- Pin diameter at bottom (outer): 1.30 ± 0.10

Labels:

- 2.54TYP
- [2.54 ±0.20]

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