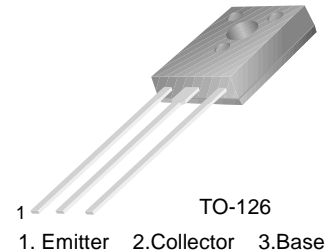


# KSE5020

## Feature

- 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 ( $T_C=25^\circ C$ )	30	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	$I_C = 5mA, R_{BE} = \infty$	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	$\mu A$
$I_{EBO}$	Emitter Cut-off Current	$V_{EB} = 5V, I_C = 0$			10	$\mu A$
$h_{FE1}$	DC Current Gain	$V_{CE} = 5V, I_C = 0.3A$	15		50	
$h_{FE2}$		$V_{CE} = 5V, I_C = 1.5A$	8			
$V_{CE(sat)}$	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	$V_{CC} = 200V$ $5I_{B1} = -2.5I_{B2} = I_C = 2A$ $RL = 100\Omega$			0.5	$\mu s$
$t_S$	Storage Time				3	$\mu s$
$t_F$	Fall Time				0.3	$\mu s$

## $h_{FE}$ Classification

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

# Typical Characteristics

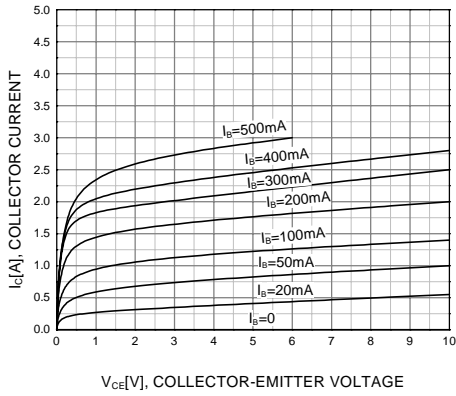


Figure 1. Static Characteristic

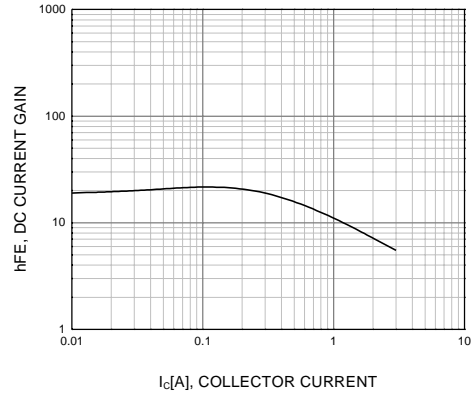


Figure 2. DC current Gain

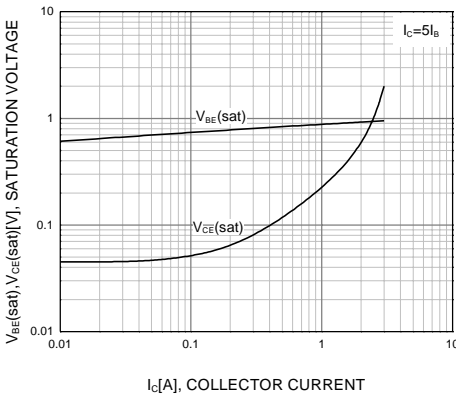


Figure 3. Collector-Emitter Saturation Voltage  
Base-Emitter Saturation Voltage

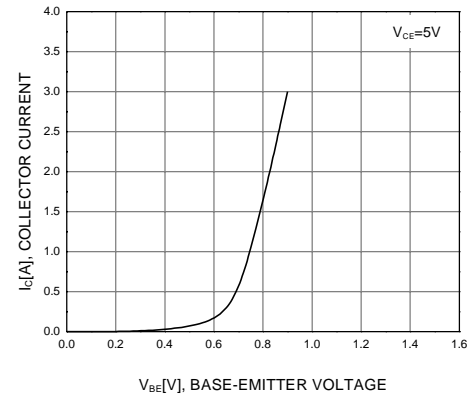


Figure 4. Base-Emitter On Voltage

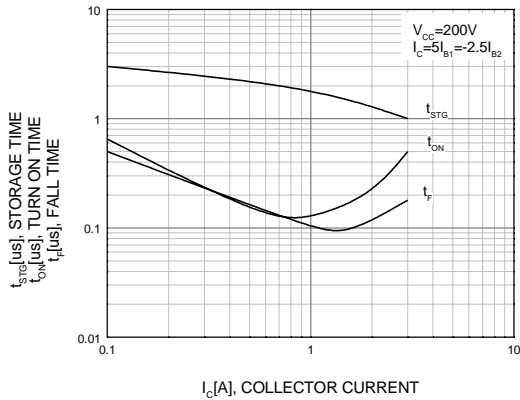


Figure 5. Turn On Time

# Package Dimensions

KSE5020

## TO-126



Dimensions in Millimeters

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