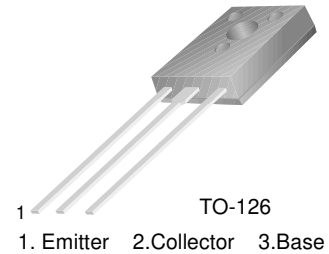


# KSE200

## Feature

- Low Collector-Emitter Saturation Voltage
- High Current Gain Bandwidth Product :  $f_T=65\text{MHz}$  @  $I_C=100\text{mA}$  (Min.)
- Complement to KSE210



## NPN Epitaxial Silicon Transistor

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

Symbol	Parameter	Value	Units
$V_{CB0}$	Collector-Base Voltage	40	V
$V_{CEO}$	Collector-Emitter Voltage	25	V
$V_{EBO}$	Emitter- Base Voltage	8	V
$I_C$	Collector Current	5	A
$P_C$	Collector Dissipation ( $T_C=25^\circ\text{C}$ )	15	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.	Max.	Units
$BV_{CEO}$	Collector-Emitter Breakdown Voltage	$I_C=10\text{mA}$ , $I_B=0$	25		V
$I_{CBO}$	Collector Cut-off Current	$V_{CB}=40\text{V}$ , $I_E=0$ $V_{CB}=40\text{V}$ , $I_E=0$ @ $T_J=125^\circ\text{C}$		100 100	nA $\mu\text{A}$
$I_{EBO}$	Emitter Cut-off Current	$V_{BE}=8\text{V}$ , $I_C=0$		100	nA
$h_{FE}$	DC Current Gain	$V_{CE}=1\text{V}$ , $I_C=500\text{mA}$ $V_{CE}=1\text{V}$ , $I_C=2\text{A}$ $V_{CE}=2\text{V}$ , $I_C=5\text{A}$	70 45 10	180	
$V_{CE}(\text{sat})$	Collector-Emitter Saturation Voltage	$I_C=500\text{mA}$ , $I_B=50\text{mA}$ $I_C=2\text{A}$ , $I_C=200\text{mA}$ $I_C=5\text{A}$ , $I_B=1\text{A}$		0.3 0.75 1.8	V V V
$V_{BE}(\text{sat})$	Base- Emitter Saturation Voltage	$I_C=5\text{A}$ , $I_B=1\text{A}$		2.5	V
$V_{BE}(\text{on})$	Base-Emitter On Voltage	$V_{CE}=1\text{V}$ , $I_C=2\text{A}$		1.6	V
$f_T$	Current Gain Bandwidth Product	$V_{CE}=10\text{V}$ , $I_C=100\text{mA}$	65		MHz
$C_{ob}$	Output Capacitance	$V_{CB}=10\text{V}$ , $I_E=0$ , $f=0.1\text{MHz}$		80	pF

# Typical Characteristics

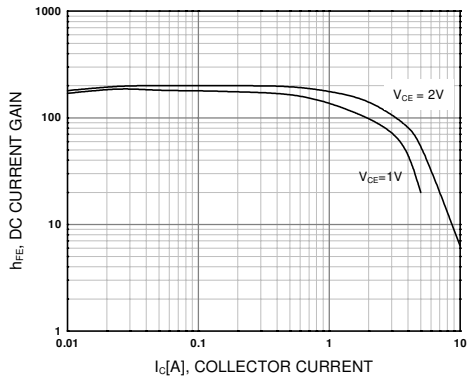


Figure 1. DC current Gain

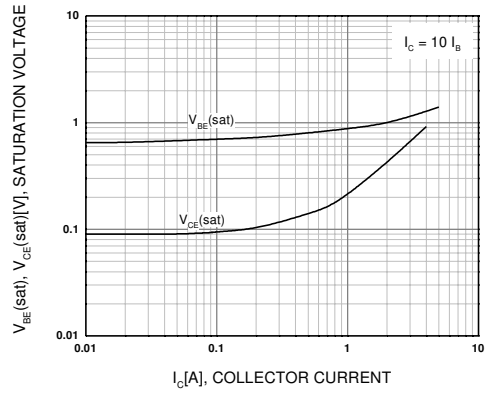


Figure 2. Collector-Emitter Saturation Voltage  
Base-Emitter Saturation Voltage

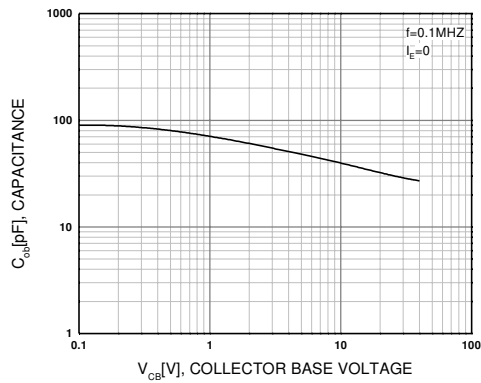


Figure 3. Collector Output Capacitance

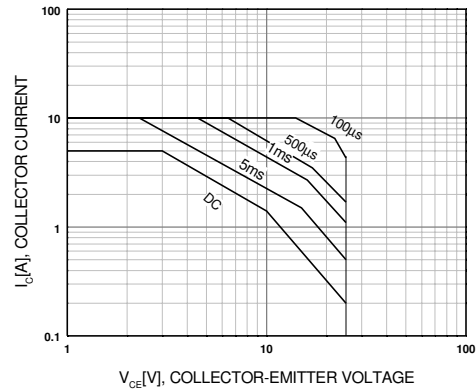


Figure 4. Forward Bias Safe Operating Area

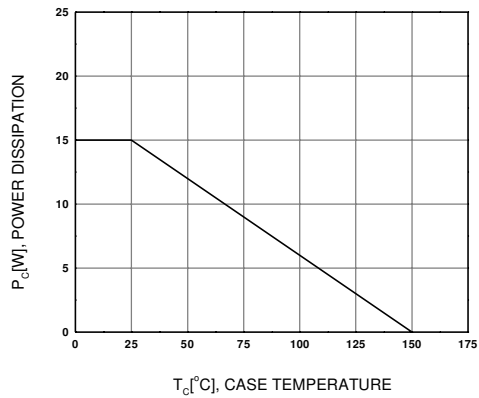
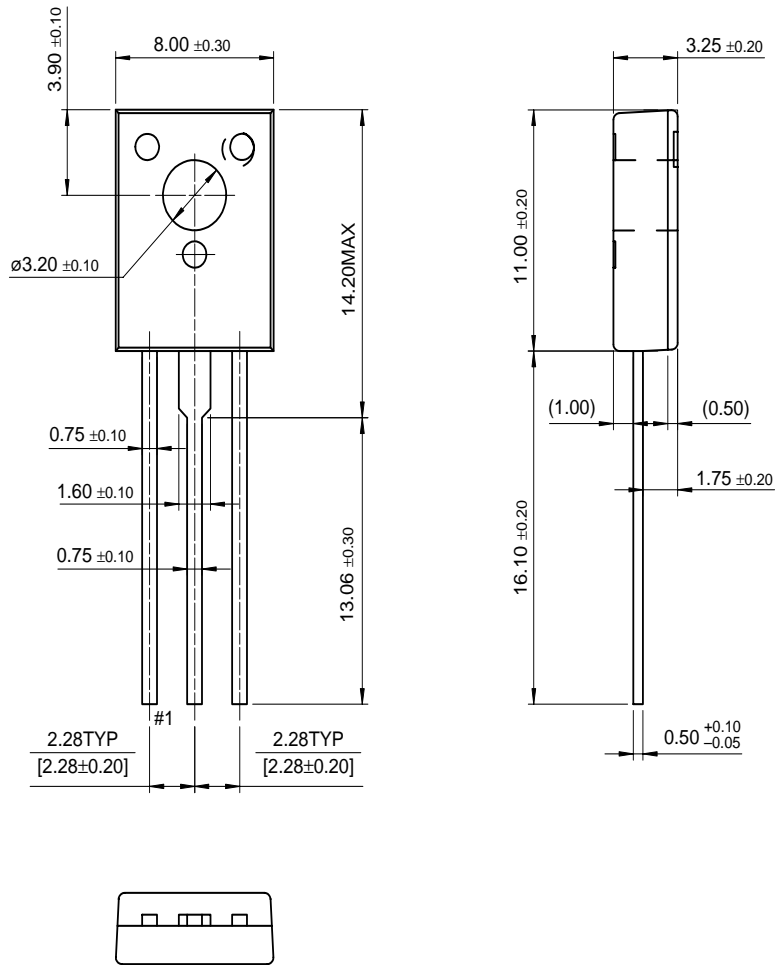


Figure 5. Power Derating

# Package Dimensions

KSE200

## TO-126



Dimensions in Millimeters

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Bottomless™	FAST <sub>r</sub> ™	PACMAN™	SuperSOT™-6
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DenseTrench™	GTO™	QFET™	TinyLogic™
DOME™	HiSeC™	QS™	UHC™
EcoSPARK™	ISOPLANAR™	QT Optoelectronics™	UltraFET <sup>®</sup>
E <sup>2</sup> CMOS™	LittleFET™	Quiet Series™	VCX™
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