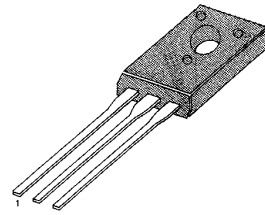


**DESIGNED FOR LOW POWER AUDIO
AMPLIFIER AND LOW CURRENT
HIGH SPEED SWITCHING APPLICATIONS**

ABSOLUTE MAXIMUM RATINGS

Characteristic	Symbol	Rating	Unit
Collector-Base Voltage : KSE180	V_{CBO}	60	V
: KSE181		80	V
: KSE182		100	V
Collector-Emitter Voltage	V_{CEO}		
: KSE180		40	V
: KSE181		60	V
: KSE182		80	V
Emitter-Base Voltage	V_{EBO}	7	V
Collector Current (DC)	I_C	3	A
Collector Current (Pulse)	I_C	6	A
Base Current (DC)	I_B	1	A
Collector Dissipation ($T_A=25^\circ\text{C}$)	P_C	1.5	W
Collector Dissipation ($T_C=25^\circ\text{C}$)	P_C	12.5	W
Junction Temperature	T_J	150	$^\circ\text{C}$
Storage Temperature	T_{STG}	-65 ~ 150	$^\circ\text{C}$

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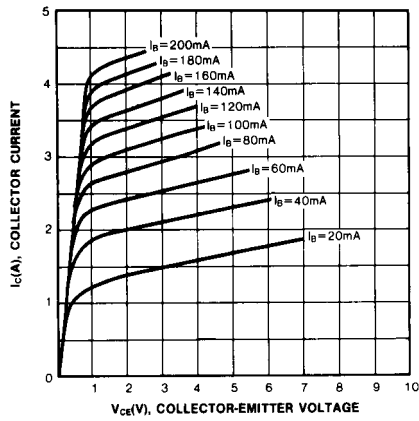


1. Emitter 2. Collector 3. Base

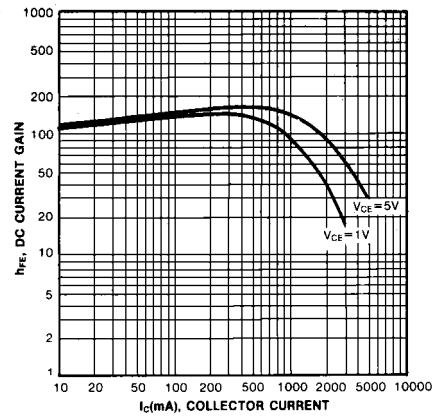
ELECTRICAL CHARACTERISTICS ($T_C=25^\circ\text{C}$)

Characteristic	Symbol	Test Conditions	Min	Max	Unit
Collector Emitter Sustaining Voltage					
: KSE180	$V_{CEO(sus)}$	$I_C = 10\text{mA}, I_B = 0$	40		V
: KSE181			60		V
: KSE182			80		V
Collector Cutoff Current	I_{CBO}	$V_{CB} = 60\text{V}, I_B = 0$		0.1	μA
: KSE181		$V_{CB} = 80\text{V}, I_E = 0$		0.1	μA
: KSE182		$V_{CB} = 100\text{V}, I_E = 0$		0.1	μA
: KSE180		$V_{CB} = 60\text{V}, I_E = 0, T_C = 150^\circ\text{C}$		0.1	mA
: KSE181		$V_{CB} = 80\text{V}, I_E = 0, T_C = 150^\circ\text{C}$		0.1	mA
: KSE182		$V_{CB} = 100\text{V}, I_E = 0, T_C = 150^\circ\text{C}$		0.1	mA
Emitter Cutoff Current	I_{EBO}	$V_{BE} = 7\text{V}, I_C = 0$		0.1	μA
DC Current Gain	h_{FE}	$V_{CE} = 1\text{V}, I_C = 100\text{mA}$	50	250	
		$V_{CE} = 1\text{V}, I_C = 500\text{mA}$	30		
		$V_{CE} = 1\text{V}, I_C = 1.5\text{A}$	12		
Collector Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 500\text{mA}, I_B = 50\text{mA}$		0.3	V
		$I_C = 1.5\text{A}, I_B = 150\text{mA}$		0.9	V
		$I_C = 3\text{A}, I_B = 600\text{mA}$		1.7	V
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = 1.5\text{A}, I_B = 150\text{mA}$		1.5	V
		$I_C = 3\text{A}, I_B = 600\text{mA}$		2.0	V
Base Emitter On Voltage	$V_{BE(on)}$	$V_{CE} = 1\text{V}, I_C = 500\text{mA}$		1.2	V
Current Gain-Bandwidth Product	f_T	$V_{CE} = 10\text{V}, I_C = 100\text{mA}, f = 10\text{MHz}$	50		MHz
Output Capacitance	C_{OB}	$V_{CB} = 10\text{V}, I_E = 0, f = 0.1\text{MHz}$		30	pF

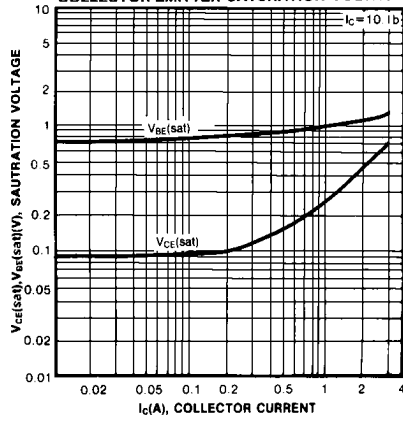
STATIC CHARACTERISTIC



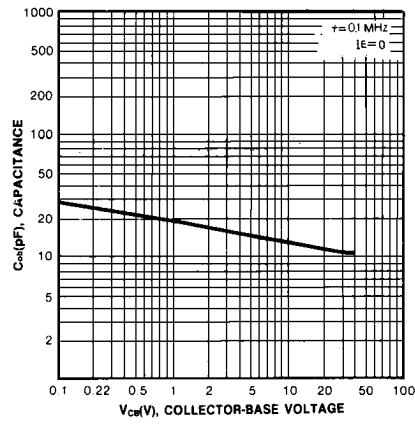
DC CURRENT GAIN



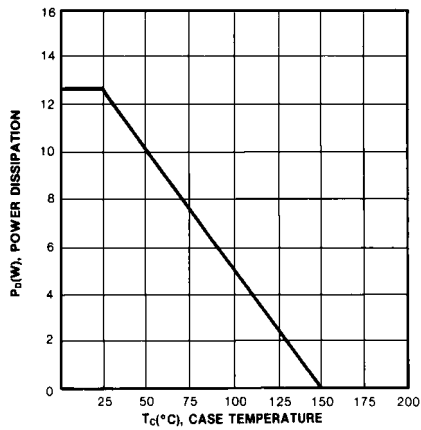
BASE-EMITTER SATURATION VOLTAGE
COLLECTOR-EMITTER SATURATION VOLTAGE



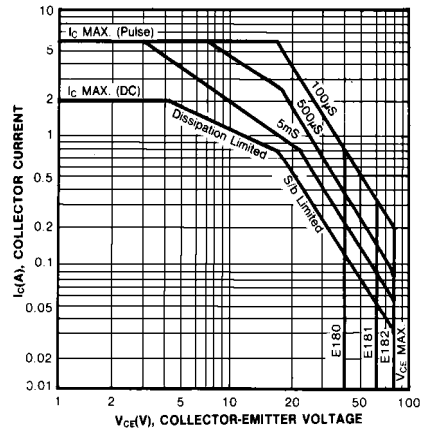
COLLECTOR OUTPUT CAPACITANCE



POWER DERATING



SAFE OPERATING AREA



KSE180/181/182

NPN EPITAXIAL SILICON TRANSISTOR

