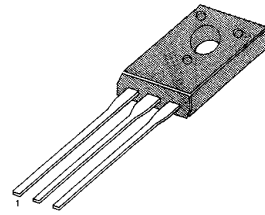


**DESIGNED FOR LOW POWER AUDIO  
AMPLIFIER AND LOW CURRENT  
HIGH SPEED SWITCHING APPLICATIONS**

**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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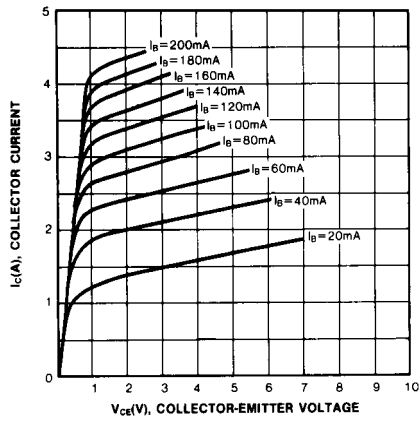


1. Emitter 2. Collector 3. Base

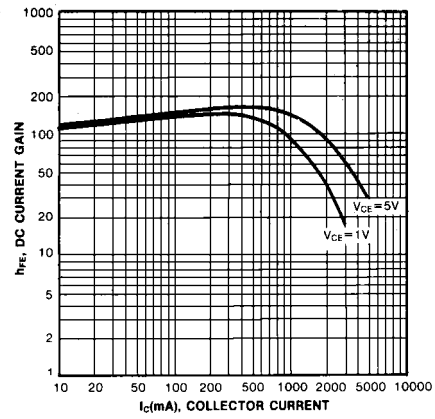
**ELECTRICAL CHARACTERISTICS ( $T_C=25^\circ\text{C}$ )**

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	$\mu\text{A}$
: KSE181		$V_{CB} = 80\text{V}, I_E = 0$		0.1	$\mu\text{A}$
: KSE182		$V_{CB} = 100\text{V}, I_E = 0$		0.1	$\mu\text{A}$
: KSE180		$V_{CB} = 60\text{V}, I_E = 0, T_C = 150^\circ\text{C}$		0.1	$\text{mA}$
: KSE181		$V_{CB} = 80\text{V}, I_E = 0, T_C = 150^\circ\text{C}$		0.1	$\text{mA}$
: KSE182		$V_{CB} = 100\text{V}, I_E = 0, T_C = 150^\circ\text{C}$		0.1	$\text{mA}$
Emitter Cutoff Current	$I_{EBO}$	$V_{BE} = 7\text{V}, I_C = 0$		0.1	$\mu\text{A}$
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		$\text{MHz}$
Output Capacitance	$C_{OB}$	$V_{CB} = 10\text{V}, I_E = 0, f = 0.1\text{MHz}$		30	$\text{pF}$

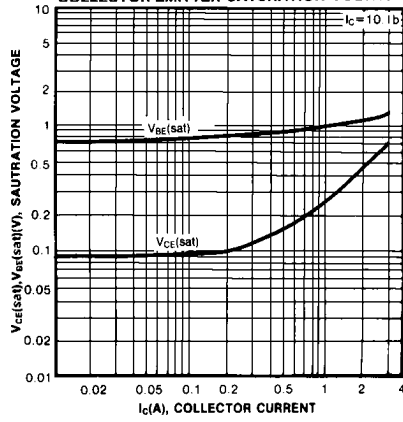
STATIC CHARACTERISTIC



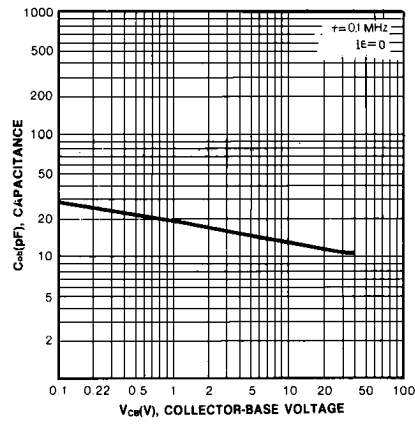
DC CURRENT GAIN



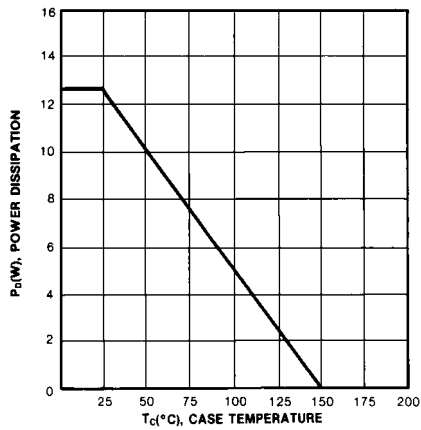
BASE-EMITTER SATURATION VOLTAGE  
COLLECTOR-EMITTER SATURATION VOLTAGE



COLLECTOR OUTPUT CAPACITANCE



POWER DERATING



SAFE OPERATING AREA

