

KSD794/794A

Audio Frequency Power Amplifier

- Complement to KSB744/KSB744A



NPN Epitaxial Silicon Transistor

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

Symbol	Parameter	Value	Units	
V_{CBO}	Collector- Base Voltage	70	V	
V_{CEO}	Collector-Emitter Voltage	: KSD794	45	V
		: KSD794A	60	V
V_{EBO}	Emitter- Base Voltage	5	V	
I_C	Collector Current (DC)	3	A	
I_{CP}	*Collector Current (Pulse)	5	A	
I_B	Base Current (DC)	0.6	A	
P_C	Collector Dissipation ($T_a=25^\circ\text{C}$)	1	W	
P_C	Collector Dissipation ($T_C=25^\circ\text{C}$)	10	W	
T_J	Junction Temperature	150	$^\circ\text{C}$	
T_{STG}	Storage Temperature	- 55 ~ 150	$^\circ\text{C}$	

* $PW \leq 10\text{ms}$, Duty Cycle $\leq 50\%$

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

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
I_{CBO}	Collector Cut-off Current	$V_{CB} = 45\text{V}$, $I_E = 0$			1	μA
I_{EBO}	Emitter Cut-off Current	$V_{EB} = 3\text{V}$, $I_C = 0$			1	μA
h_{FE1} h_{FE2}	* DC Current Gain	$V_{CE} = 5\text{V}$, $I_C = 20\text{mA}$ $V_{CE} = 5\text{V}$, $I_C = 0.5\text{A}$	30 60	70 100	320	
$V_{CE(\text{Sat})}$	* Collector-Emitter Saturation Voltage	$I_C = 1.5\text{A}$, $I_B = 0.15\text{A}$		0.3	2	V
$V_{BE(\text{Sat})}$	* Base-Emitter Saturation Voltage	$I_C = 1.5\text{A}$, $I_B = 0.15\text{A}$		0.8	2	V
f_T	Current Gain Bandwidth Product	$V_{CE} = 5\text{V}$, $I_E = 0.1\text{A}$		60		MHz
C_{ob}	Output Capacitance	$V_{CB} = 10\text{V}$, $I_E = 0$, $f = 1\text{MHz}$		40		pF

* Pulse Test: $PW \leq 350\mu\text{s}$, Duty Cycles $\leq 2\%$ Pulsed

h_{FE} Classification

Classification	R	O	Y
h_{FE2}	60 ~ 120	100 ~ 200	160 ~ 320

Typical Characteristics

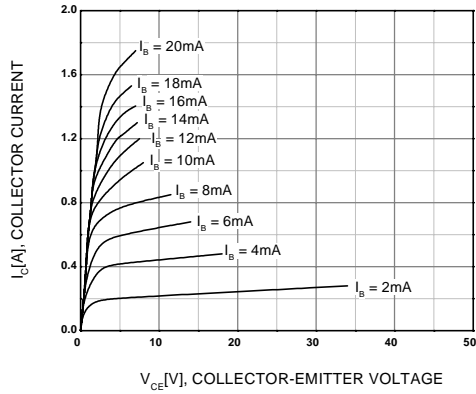


Figure 1. Static Characteristic

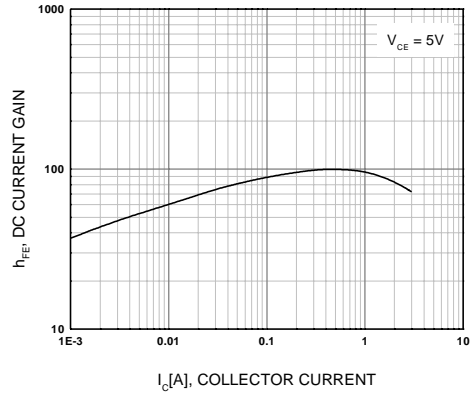


Figure 2. DC current Gain

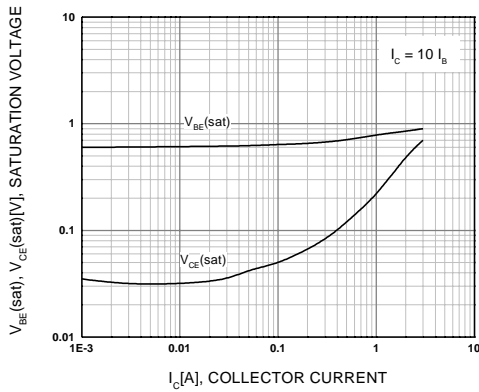


Figure 3. Base-Emitter Saturation Voltage
Collector-Emitter Saturation Voltage

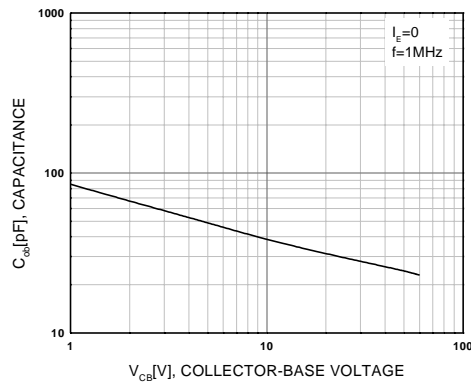


Figure 4. Collector Output Capacitance

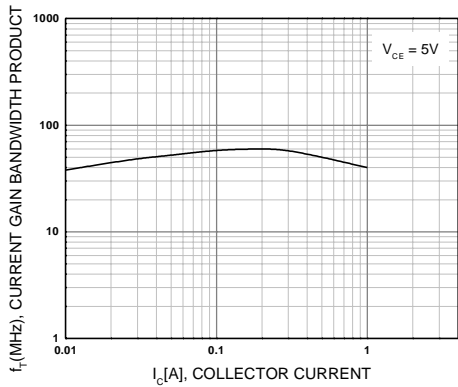


Figure 5. Current Gain Bandwidth Product

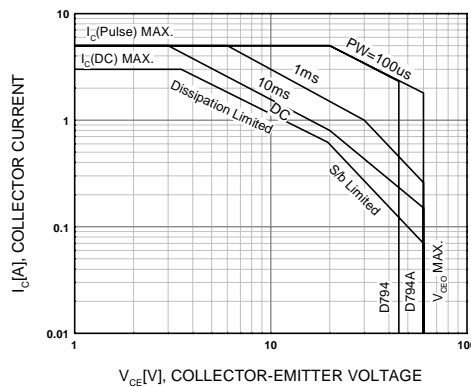


Figure 6. Safe Operating Area

Typical Characteristics (Continued)

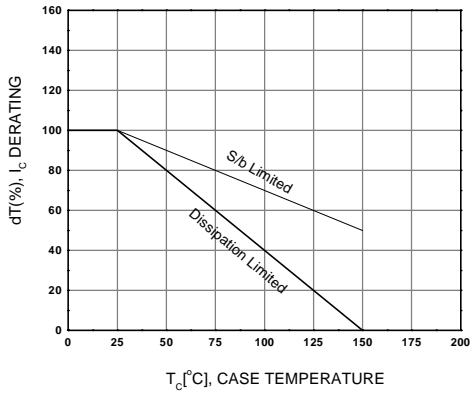


Figure 7. Derating Curve Of Safe Operating Areas

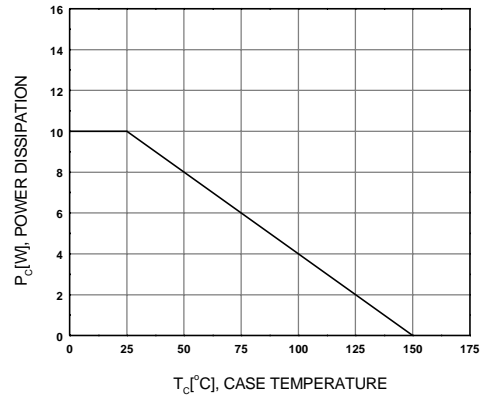


Figure 8. Power Derating

Package Dimensions

KSD794I794A

TO-126



Dimensions in Millimeters

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