

# KSD882

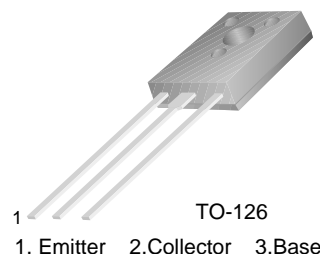
## NPN Epitaxial Silicon Transistor

### Recommended Applications

- Audio Frequency Power Amplifier

### Features

- Low Speed Switching
- Complement to KSB772.



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

Symbol	Parameter	Ratings	Units
$BV_{CBO}$	Collector-Base Voltage	40	V
$BV_{CEO}$	Collector-Emitter Voltage	30	V
$BV_{EBO}$	Emitter-Base Voltage	5	V
$I_C$	Collector Current(DC)	3	A
$I_C$	Collector Current(Pulse)**	7	A
$I_B$	Base Current	0.6	A
$P_D$	Total Device Dissipation( $T_C=25^\circ\text{C}$ )	10	W
	Total Device Dissipation( $T_a=25^\circ\text{C}$ )	1	W
$T_J, T_{STG}$	Junction and Storage Temperature	- 55 ~ +150	$^\circ\text{C}$

\* These ratings are limiting values above which the serviceability of any semiconductor device may be impaired.

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

### Electrical Characteristics. $T_a=25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
$BV_{CBO}$	Collector-Base Breakdown Voltage	$I_C=500\mu\text{A}, I_E=0$	40			V
$BV_{CEO}$	Collector-Emitter Breakdown Voltage	$I_C=5\text{mA}, I_B=0$	30			V
$BV_{EBO}$	Emitter-Base Breakdown Voltage	$I_E=500\mu\text{A}, I_C=0$	5			V
$I_{CBO}$	Collector Cut-off Current	$V_{CB} = 30\text{V}, I_E = 0$			1	$\mu\text{A}$
$I_{EBO}$	Emitter Cut-off Current	$V_{EB} = 3\text{V}, I_C = 0$			1	$\mu\text{A}$
$h_{FE1}$ $h_{FE2}$	*DC Current Gain	$V_{CE} = 2\text{V}, I_C = 20\text{mA}$ $V_{CE} = 2\text{V}, I_C = 1\text{A}$	30 60	150 160	400	
$V_{CE(sat)}$	*Collector-Emitter Saturation Voltage	$I_C = 2\text{A}, I_B = 0.2\text{A}$		0.3	0.5	V
$V_{BE(sat)}$	*Base-Emitter Saturation Voltage	$I_C = 2\text{A}, I_B = 0.2\text{A}$		1.0	2.0	V
$f_T$	Current Gain Bandwidth Product	$V_{CE} = 5\text{V}, I_E = 0.1\text{A}$		90		MHz
$C_{ob}$	Output Capacitance	$V_{CB} = 10\text{V}, I_E = 0$ $f = 1\text{MHz}$		45		pF

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

**h<sub>FE</sub> Classification**

Classification	R	O	Y	G
h <sub>FE2</sub>	60 ~ 120	100 ~ 200	160 ~ 320	200 ~ 400

**Ordering Information**

Part Number	Marking	Package	Packing Method	Remarks
KSD882OSTU	D882O	TO-126	TUBE	hFE1 R grade
KSD882RSTU	D882R	TO-126	TUBE	hFE1 O grade
KSD882YSTU	D882Y	TO-126	TUBE	hFE1 Y grade
KSD882GSTU	D882G	TO-126	TUBE	hFE1 G grade

- \* 1. Affix "-S-" means the standard TO126 Package. If the affix is "-STS-" instead of "-S-", that means the short-lead TO126 package.  
 2. Suffix "-TU" means the tube packing. The Suffix "TU" could be replaced to other suffix character as packing method.

## Typical Characteristics

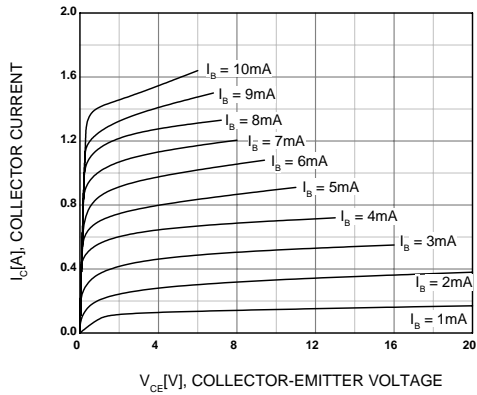


Figure 1. Static Characteristic

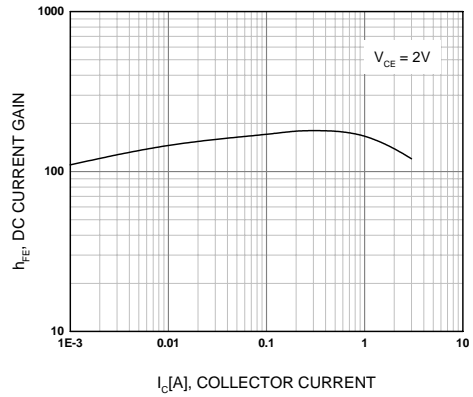


Figure 2. DC current Gain

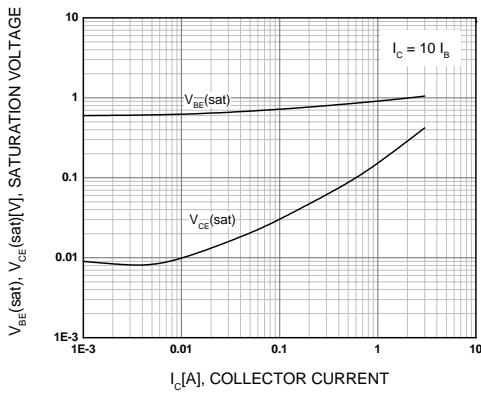


Figure 3. Base-Emitter Saturation Voltage  
Collector-Emitter Saturation Voltage

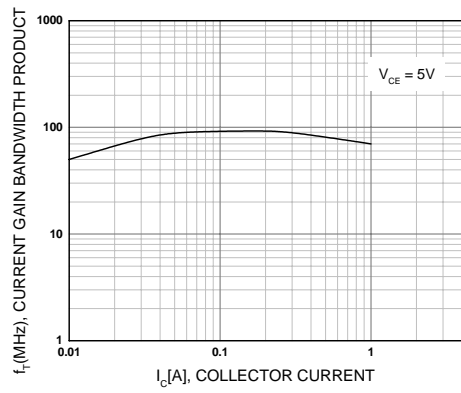


Figure 4. Current Gain Bandwidth Product

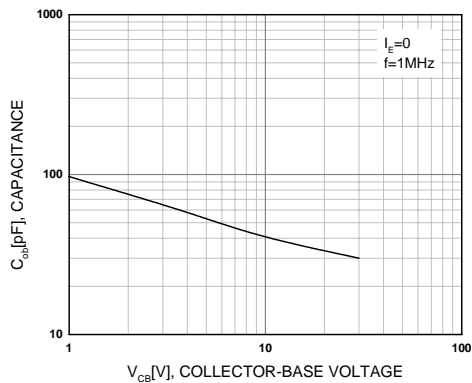


Figure 5. Collector Output Capacitance

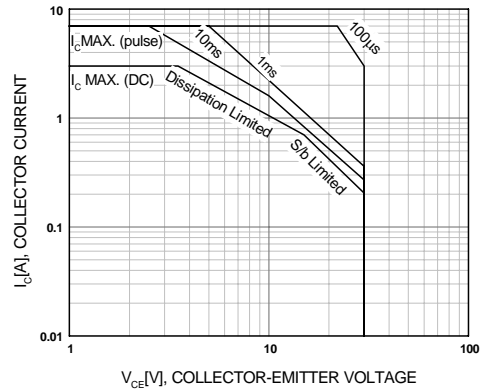


Figure 6. Safe Operating Area

# Typical Characteristics

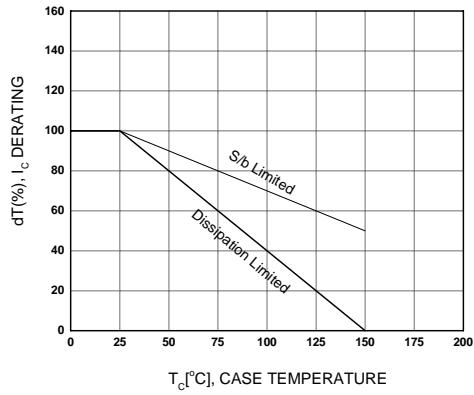


Figure 7. Derating Curve Of Safe Operating Areas

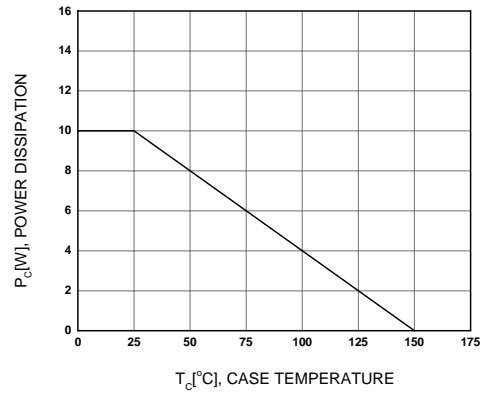


Figure 8. Power Derating



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