

NPN Epitaxial Silicon Transistor

KSD882

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) (Note 1)

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_{CP}	Collector Current (Pulse) (Note 2)	7	A
I_B	Base Current	0.6	A
P_D	Total Device Dissipation, $T_C = 25^\circ\text{C}$ $T_A = 25^\circ\text{C}$	10 1	W
T_J, T_{STG}	Junction and Storage Temperature	$-55 \sim +150$	$^\circ\text{C}$

Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

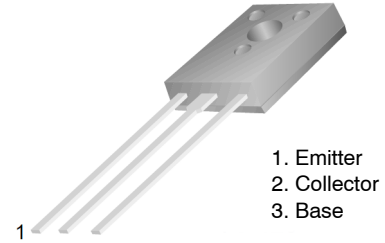
- These ratings are limiting values above which the serviceability of any semiconductor device may be impaired.
- $PW \leq 10$ ms, Duty Cycle $\leq 50\%$.

ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise noted)

Symbol	Characteristic	Test Condition	Min	Typ.	Max	Unit
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	μA
I_{EBO}	Emitter Cut-off Current	$V_{EB} = 3 \text{ V}, I_C = 0$	—	—	1	μA
h_{FE1} h_{FE2}	DC Current Gain (Note 3)	$V_{CE} = 2 \text{ V}, I_C = 20 \text{ mA}$ $V_{CE} = 2 \text{ V}, I_C = 1 \text{ A}$	30 60	150 160	400	
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage (Note 3)	$I_C = 2 \text{ A}, I_B = 0.2 \text{ A}$	—	0.3	0.5	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage (Note 3)	$I_C = 2 \text{ A}, I_B = 0.2 \text{ A}$	—	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

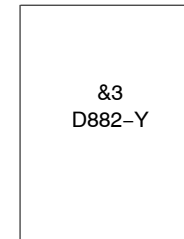
Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

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



TO-126-3LD
CASE 340AS

MARKING DIAGRAM



&3 = 3-Digit Date Code
D882 = Specific Device Code
Y = h_{FE} Grade

ORDERING INFORMATION

Device	Package	Shipping
KSD882YS	TO-126-3 (Pb-Free)	2000 Units / Bulk Bag
KSD882YSTU	TO-126-3 (Pb-Free)	1920 Units / Tube

KSD882

h_{FE} CLASSIFICATION

Classification	R	O	Y	G
h_{FE2}	60 ~ 120	100 ~ 200	160 ~ 320	200 ~ 400

TYPICAL CHARACTERISTICS

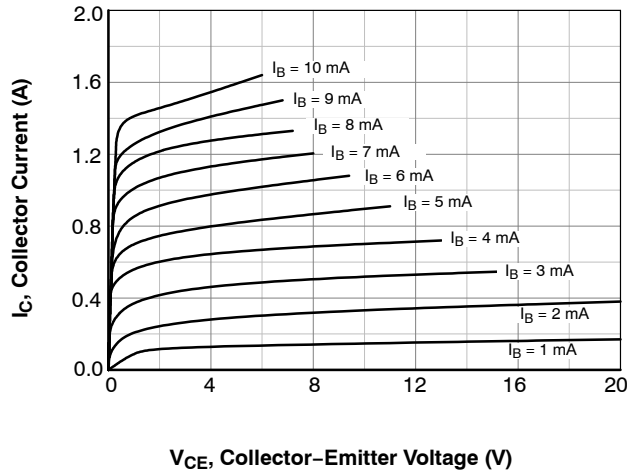


Figure 1. Static Characteristic

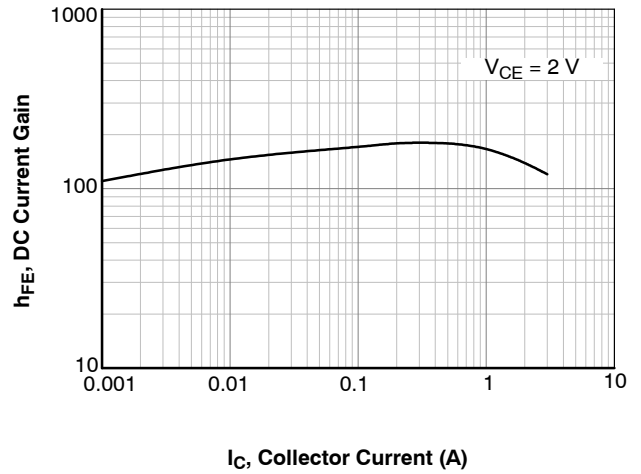


Figure 2. DC Current Gain

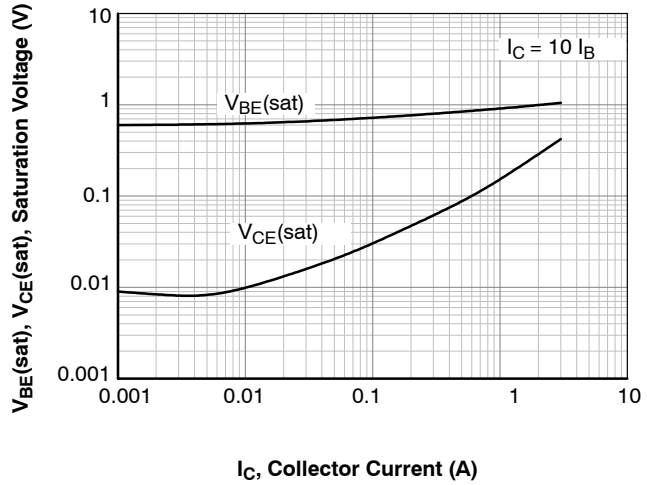
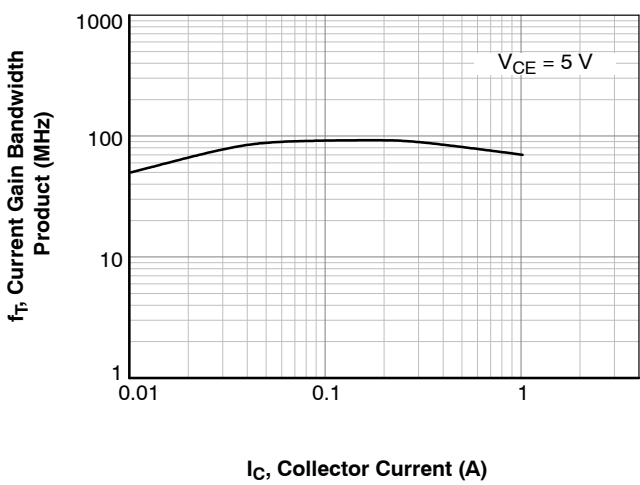
Figure 3. Base-Emitter Saturation Voltage
Collector-Emitter Saturation Voltage

Figure 4. Current Gain Bandwidth Product

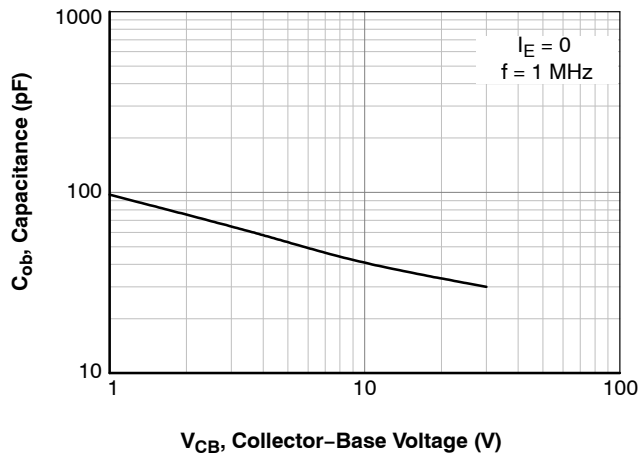


Figure 5. Collector Output Capacitance

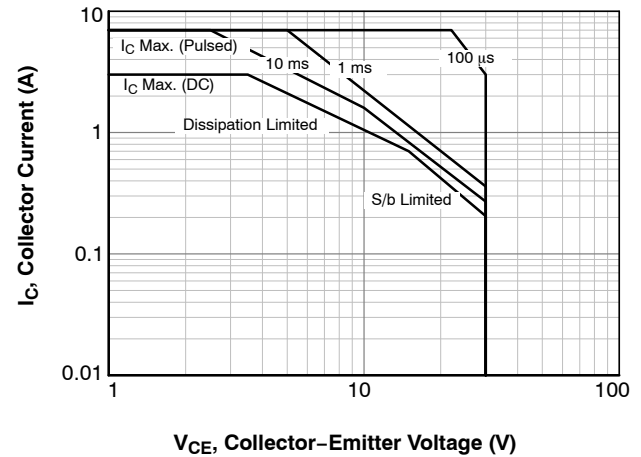


Figure 6. Safe Operating Areas

TYPICAL CHARACTERISTICS (Continue)

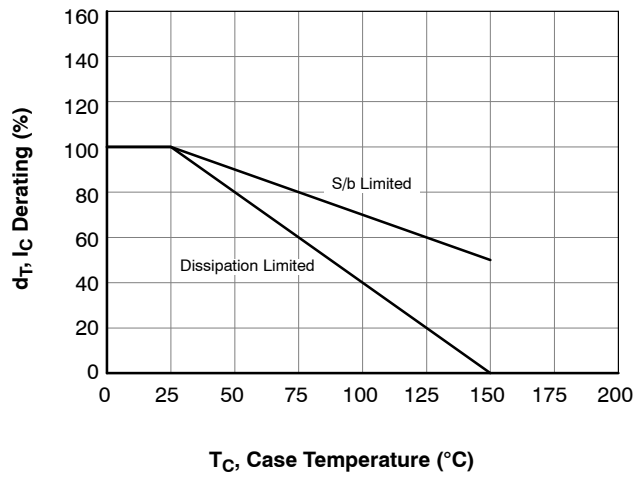


Figure 7. Derating Curve of Safe Operating Areas

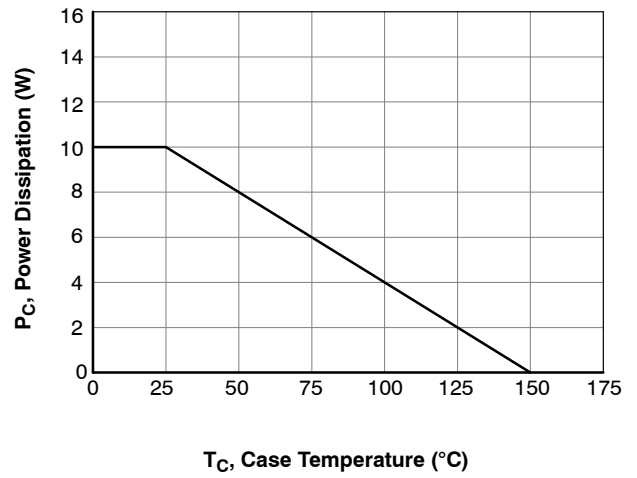
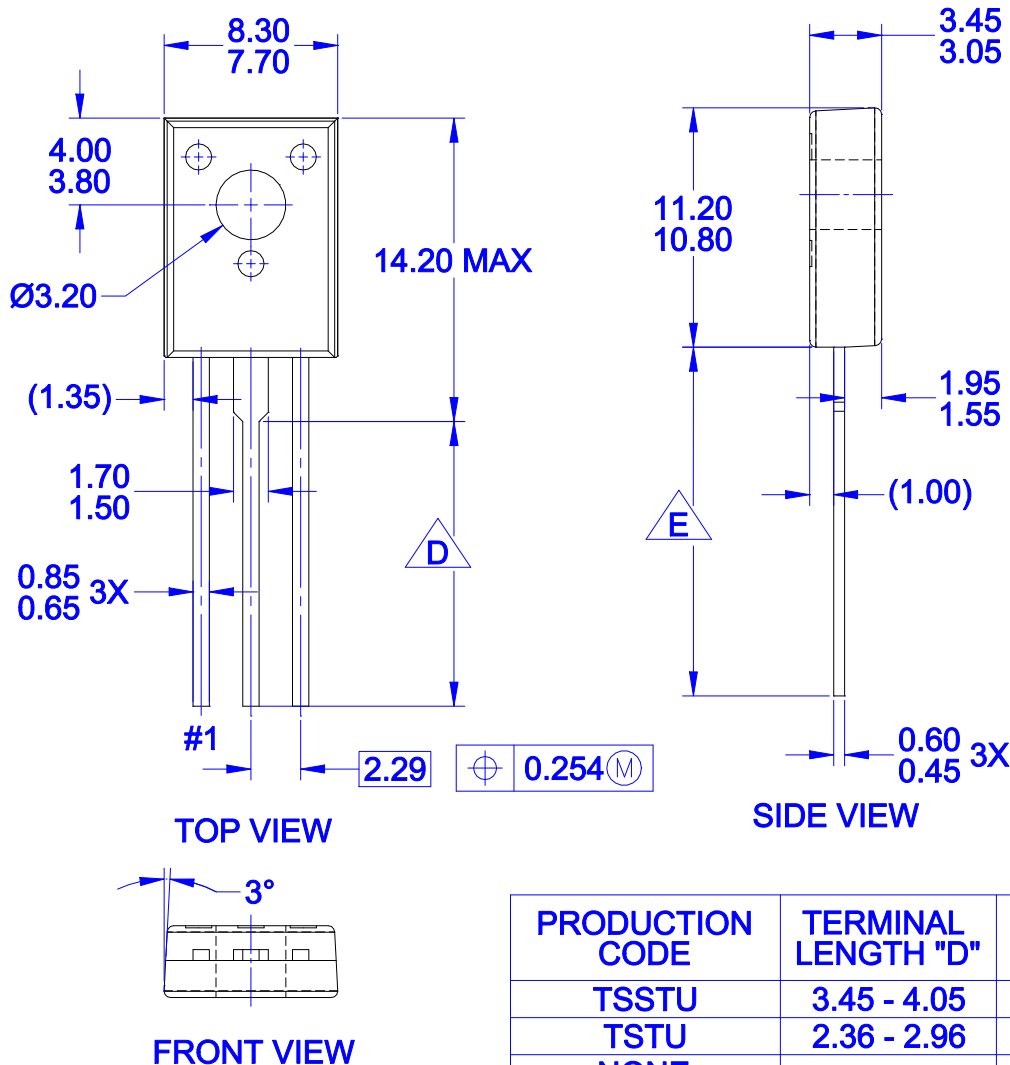


Figure 8. Power Derating

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NOTES:

- A. NO INDUSTRY STANDARD APPLIES TO THIS PACKAGE
- B. ALL DIMENSIONS ARE IN MILLIMETERS
- C. DIMENSIONS ARE EXCLUSIVE OF BURRS, MOLD FLASH, AND TIE BAR PROTRUSIONS

D FOR TERMINAL LENGTH "D", REFER TO TABLE

E FOR TERMINAL LENGTH "E", REFER TO TABLE

PRODUCTION CODE	TERMINAL LENGTH "D"	TERMINAL LENGTH "E"
TSSTU	3.45 - 4.05	6.45 - 7.45
TSTU	2.36 - 2.96	5.36 - 6.36
NONE (STD LENGTH)	12.76 - 13.36	15.76 - 16.76

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