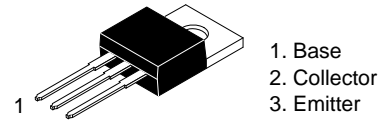


# PNP Epitaxial Silicon Transistor

## KSB596



TO-220-3LD  
CASE 340AT

### Features

- Complement to KSD526
- This is a Pb-Free Device

### Applications

- Power Amplifier Applications

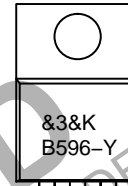
### ABSOLUTE MAXIMUM RATINGS\* ( $T_A = 25^\circ\text{C}$ unless otherwise noted)

Symbol	Parameter	Ratings	Units
$V_{CBO}$	Collector-Base Voltage	-80	V
$V_{CEO}$	Collector-Emitter Voltage	-80	V
$V_{EBO}$	Emitter-Base Voltage	-5	V
$I_C$	Collector Current (DC)	-4	A
$I_B$	Base Current	-0.4	A
$P_C$	Collector Dissipation ( $T_C = 25^\circ\text{C}$ )	30	W
$T_J$	Junction Temperature	150	$^\circ\text{C}$
$T_{STG}$	Storage Temperature	-55 ~ 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.

### MARKING DIAGRAM



&3 = Date Code  
&K = Lot Traceability Code  
B596-Y = Specific Device Code

### ORDERING INFORMATION

Device	Package	Shipping
KSB596YTU	TO-220-3LD (Pb-Free)	1000 Units / Tube

# KSB596

## ELECTRICAL CHARACTERISTICS (T<sub>C</sub> = 25°C unless otherwise noted)

Symbol	Characteristic	Test Condition	Min	Typ	Max	Unit
BV <sub>CEO</sub>	Collector–Emitter Breakdown Voltage	I <sub>C</sub> = –50 mA, I <sub>B</sub> = 0	–80			V
BV <sub>EBO</sub>	Emitter–Base Breakdown Voltage	I <sub>E</sub> = –10 mA, I <sub>C</sub> = 0	–5			V
I <sub>CBO</sub>	Collector Cut-off Current	V <sub>CB</sub> = –80 V, I <sub>E</sub> = 0			–70	μA
I <sub>EBO</sub>	Emitter Cut-off Current	V <sub>EB</sub> = –5 V, I <sub>C</sub> = 0			–100	μA
h <sub>FE1</sub> h <sub>FE2</sub>	DC Current Gain	V <sub>CE</sub> = –5 V, I <sub>C</sub> = –0.5 A V <sub>CE</sub> = –5 V, I <sub>C</sub> = –3 A	40 15		240	
V <sub>CE(sat)</sub>	Collector–Emitter Saturation Voltage	I <sub>C</sub> = –3 A, I <sub>B</sub> = –0.3 A		–1	–1.7	V
V <sub>BE(on)</sub>	Base–Emitter On Voltage	V <sub>CE</sub> = –5 V, I <sub>C</sub> = –3 A		–1	–1.5	V
f <sub>T</sub>	Current Gain Bandwidth Product	V <sub>CE</sub> = –5 V, I <sub>C</sub> = –0.5 A	3			MHz
C <sub>cb</sub>	Collector Output Capacitance	V <sub>CB</sub> = –10 V, I <sub>E</sub> = 0, f = 1 MHz		130		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.

## h<sub>FE</sub> CLASSIFICATION

Classification	R	O	Y
h <sub>FE</sub>	40 ~ 80	70 ~ 140	120 ~ 240

## TYPICAL CHARACTERISTICS

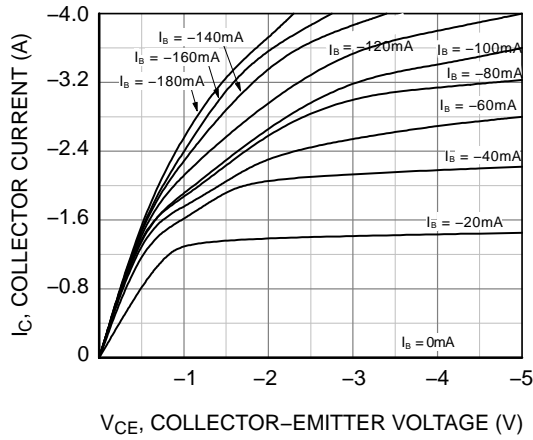


Figure 1. Static Characteristic

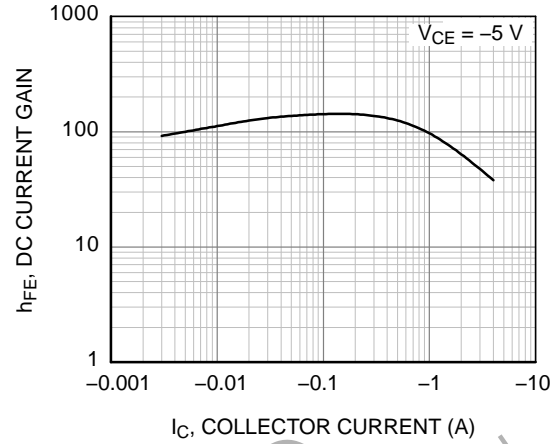


Figure 2. DC Current Gain

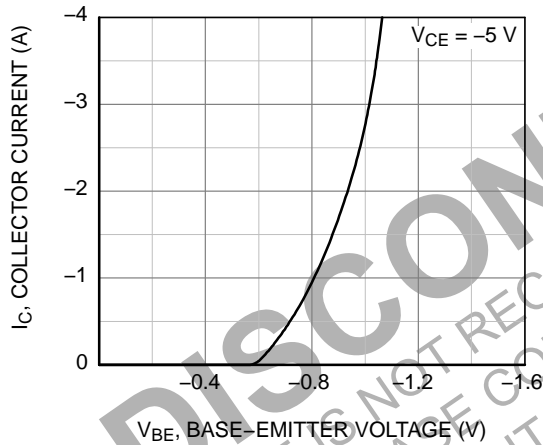


Figure 3. Base-Emitter Saturation Voltage

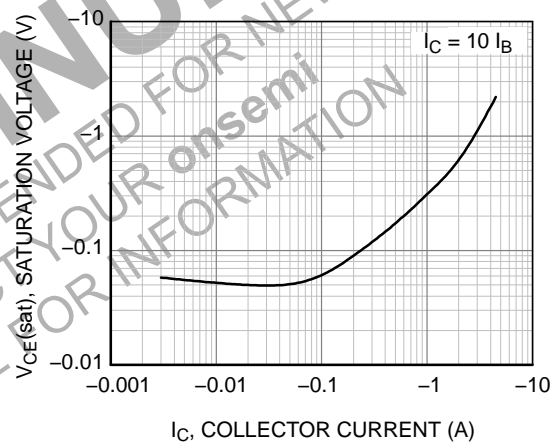


Figure 4. Collector-Emitter Saturation Voltage

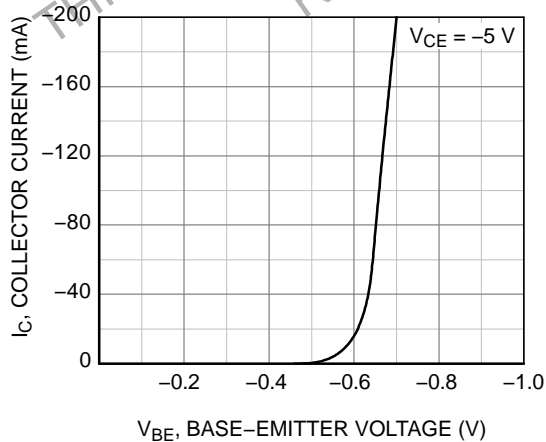


Figure 5. Base-Emitter On Voltage

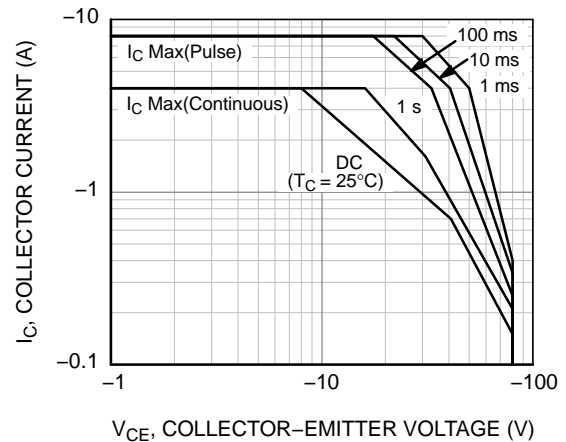


Figure 6. Safe Operating Area

## TYPICAL CHARACTERISTICS (Continued)

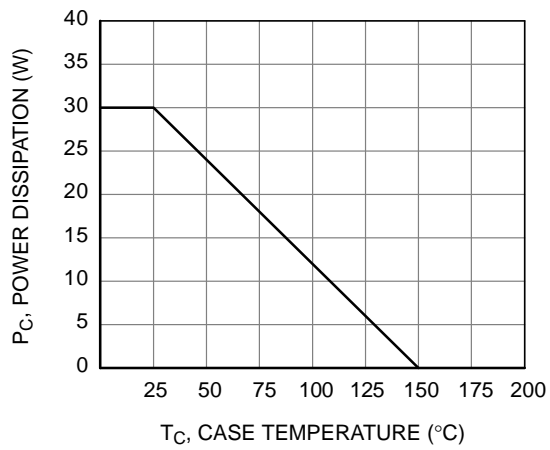
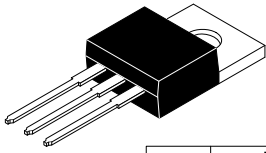


Figure 7. Power Derating

**DISCONTINUED**  
THIS DEVICE IS NOT RECOMMENDED FOR NEW DESIGN  
PLEASE CONTACT YOUR onsemi  
REPRESENTATIVE FOR INFORMATION



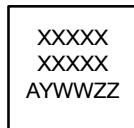
TO-220-3LD  
CASE 340AT  
ISSUE B

DATE 08 AUG 2022

DIM	MILLIMETERS		
	MIN.	NOM.	MAX.
A	4.00	--	4.70
A1	SEE NOTE "F"		
A2	2.10	--	2.85
b	0.55	--	1.00
b2	1.10	--	1.62
b4	1.42	--	1.62
c	0.36	--	0.60
D	13.90	--	16.30
D1	8.13	--	9.40
D2	11.50	--	14.30
D3	15.42	--	16.51
E	9.65	--	10.67
E1	7.59	--	8.65
e	2.40	--	2.67
H1	6.06	--	6.69
L	12.70	--	14.04
L1	2.70	--	4.10
P	3.50	--	4.00
Q	2.50	--	3.40
z	2.13 REF		
z1	2.06 REF		
θ	3°	--	5°

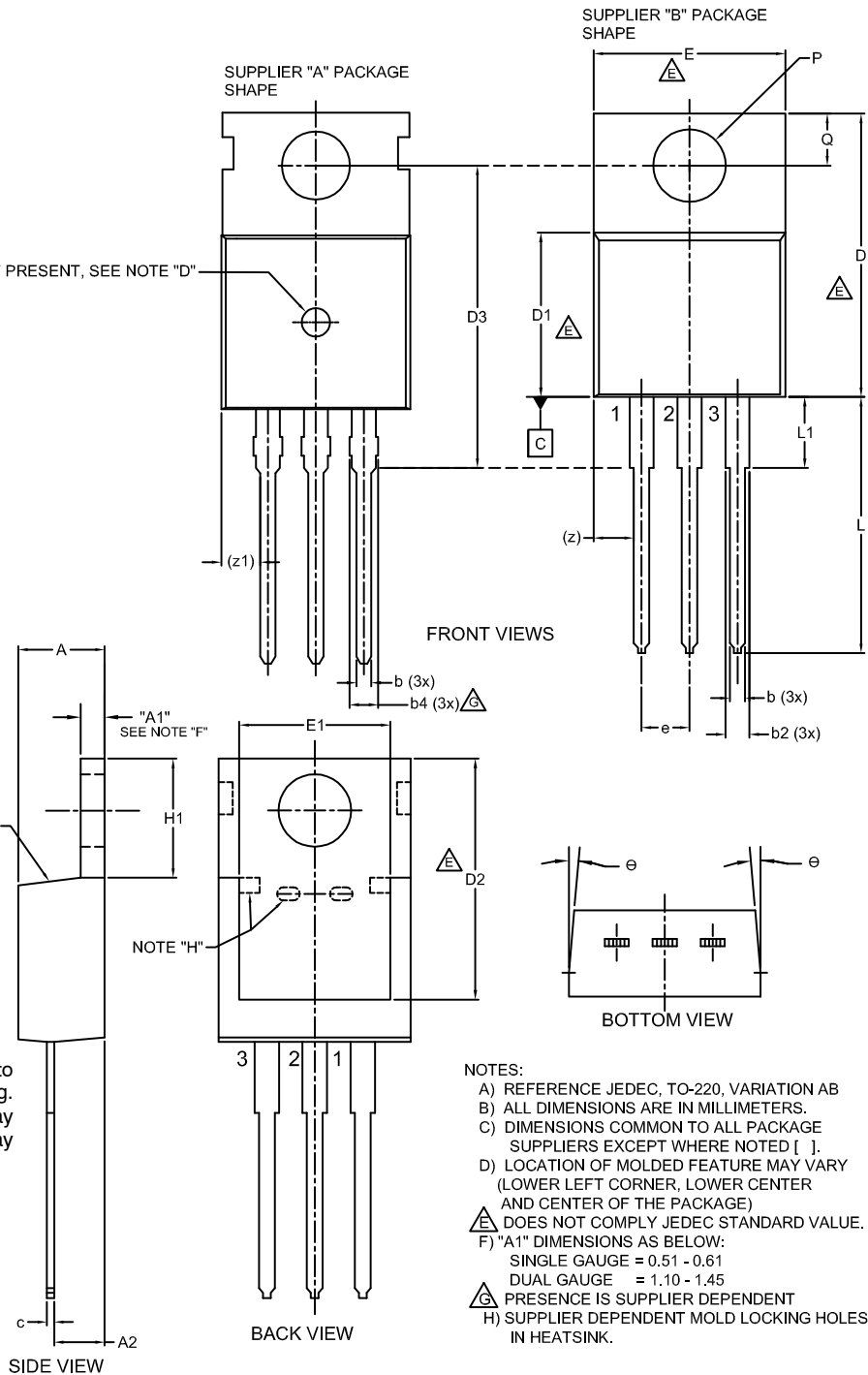
IF PRESENT, SEE NOTE "D"

GENERIC  
MARKING DIAGRAM\*



XXXX = Specific Device Code  
A = Assembly Location  
Y = Year  
WW = Work Week  
ZZ = Assembly Lot Code

\*This information is generic. Please refer to device data sheet for actual part marking. Pb-Free indicator, "G" or microdot "▪", may or may not be present. Some products may not follow the Generic Marking.



NOTES:

- A) REFERENCE JEDEC, TO-220, VARIATION AB
- B) ALL DIMENSIONS ARE IN MILLIMETERS.
- C) DIMENSIONS COMMON TO ALL PACKAGE SUPPLIERS EXCEPT WHERE NOTED [ ].
- D) LOCATION OF MOLDED FEATURE MAY VARY (LOWER LEFT CORNER, LOWER CENTER AND CENTER OF THE PACKAGE)
- E) DOES NOT COMPLY JEDEC STANDARD VALUE.
- F) "A1" DIMENSIONS AS BELOW:  
SINGLE GAUGE = 0.51 - 0.61  
DUAL GAUGE = 1.10 - 1.45
- G) PRESENCE IS SUPPLIER DEPENDENT
- H) SUPPLIER DEPENDENT MOLD LOCKING HOLES IN HEATSINK.

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DESCRIPTION:	TO-220-3LD	PAGE 1 OF 1

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