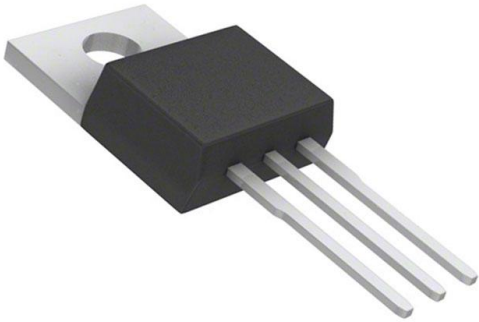


# KSA940TSTU Datasheet

[www.digi-electronics.com](http://www.digi-electronics.com)



<https://www.DiGi-Electronics.com>

|                              |   |
|------------------------------|---|
| DiGi Electronics Part Number | KSA940TSTU-DG   |
| Manufacturer                 | <a href="#">onsemi</a>  |
| Manufacturer Product Number  | KSA940TSTU  |
| Description                  | TRANS PNP 150V 1.5A TO220-3   |
| Detailed Description         | Bipolar (BJT) Transistor PNP 150 V 1.5 A 4MHz 1.5 W Through Hole TO-220-3 |



Tel: +00 852-30501935

RFQ Email: [Info@DiGi-Electronics.com](mailto:Info@DiGi-Electronics.com)

DiGi is a global authorized distributor of electronic components.

## Purchase and inquiry

Manufacturer Product Number:

KSA940TSTU

Series:

-

Transistor Type:

PNP

Voltage - Collector Emitter Breakdown (Max):

150 V

Current - Collector Cutoff (Max):

10 $\mu$ A (ICBO)

Power - Max:

1.5 W

Operating Temperature:

150°C (TJ)

Package / Case:

TO-220-3

Base Product Number:

KSA940

Manufacturer:

onsemi

Product Status:

Obsolete

Current - Collector (Ic) (Max):

1.5 A

Vce Saturation (Max) @ Ib, Ic:

1.5V @ 50mA, 500mA

DC Current Gain (hFE) (Min) @ Ic, Vce:

40 @ 500mA, 10V

Frequency - Transition:

4MHz

Mounting Type:

Through Hole

Supplier Device Package:

TO-220-3

## Environmental & Export classification

Moisture Sensitivity Level (MSL):

1 (Unlimited)

ECCN:

EAR99

REACH Status:

REACH Unaffected

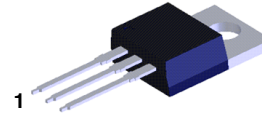
HTSUS:

8541.29.0095

# Vertical Deflection Output Power Amplifier

## KSA940

### PNP Epitaxial Silicon Transistor Complement to KSC2073


**TO-220-3LD  
CASE 340AT**

- These are Pb-Free Devices

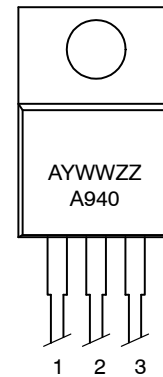
#### ABSOLUTE MAXIMUM RATINGS

( $T_C = 25^\circ\text{C}$  unless otherwise noted.)

| Symbol    | Parameter  | Value     | Unit             |
|-----------|--|-----------|------------------|
| $V_{CB0}$ | Collector-Base Voltage                           | -150      | V                |
| $V_{CEO}$ | Collector-Emitter Voltage                        | -150      | V                |
| $V_{EBO}$ | Emitter-Base Voltage                             | -5        | V                |
| $I_C$     | Collector Current                                | -1.5      | A                |
| $I_B$     | Base Current                                     | -0.5      | A                |
| $P_C$     | Collector Dissipation ( $T_a=25^\circ\text{C}$ ) | 1.5       | W                |
| $P_C$     | Collector Dissipation ( $T_C=25^\circ\text{C}$ ) | 25        | 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.

#### MARKING DIAGRAM



1: Base  
2: Collector  
3: Emitter

A = Assembly Plant Code  
YWW = 3-Digit Date Code (Year and Week)  
ZZ = 2-Digits Lot Run Traceability Code  
A940 = Specific Device Code

#### ELECTRICAL CHARACTERISTICS

( $T_C = 25^\circ\text{C}$  unless otherwise noted.)

| Symbol        | Parameter                            | Conditions   | Min.  | Typ.  | Max.  | Unit          |
|---------------|--------------------------------------|--|-------|-------|-------|---------------|
| $I_{CBO}$     | Collector Cut-off Current            | $V_{CB} = -120\text{ V}, I_E = 0$                  | -     | -     | -10   | $\mu\text{A}$ |
| $I_{EBO}$     | Emitter Cut-off Current              | $V_{EB} = -5\text{ V}, I_C = 0$                    | -     | -     | -10   | $\mu\text{A}$ |
| $h_{FE}$      | DC Current Gain                      | $V_{CE} = -10\text{ V}, I_C = -500\text{ mA}$      | 40    | 75    | 140   |               |
| $V_{CE(sat)}$ | Collector-Emitter Saturation Voltage | $I_C = -500\text{ mA}, I_B = -50\text{ mA}$        | -     | -     | -1.5  | V             |
| $V_{BE(on)}$  | Base-Emitter ON Voltage              | $V_{CE} = -10\text{ V}, I_C = -500\text{ mA}$      | -0.65 | -0.75 | -0.85 | V             |
| $f_T$         | Current Gain Bandwidth Product       | $V_{CE} = -10\text{ V}, I_C = -500\text{ mA}$      | -     | 4     | -     | MHz           |
| $C_{ob}$      | Output Capacitance                   | $V_{CB} = -10\text{ V}, I_E = 0, f = 1\text{ MHz}$ | -     | 55    | -     | 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.

#### ORDERING INFORMATION

| Device   | Package                 | Shipping          |
|----------|-------------------------|-------------------|
| KSA940TU | TO-220-3LD<br>(Pb-Free) | 1000 Units / Tube |

# KSA940

## TYPICAL PERFORMANCE CHARACTERISTICS

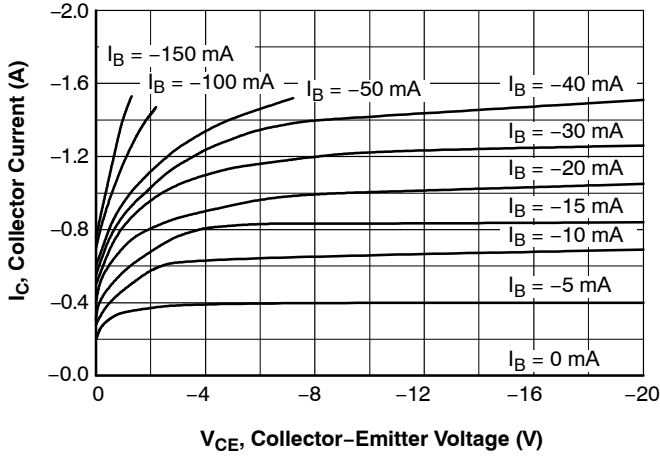


Figure 1. Static Characteristic

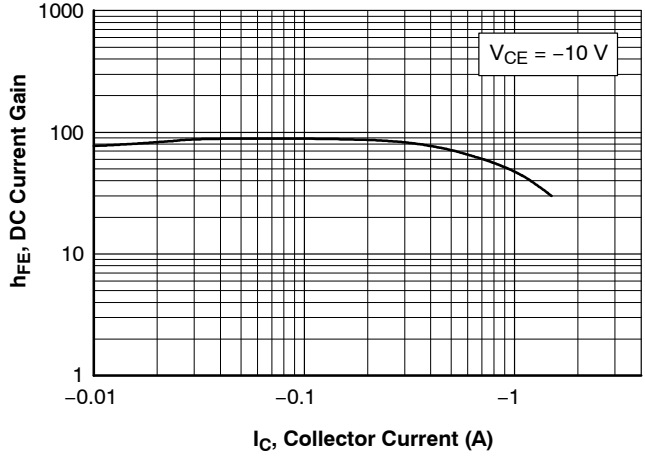


Figure 2. DC Current Gain

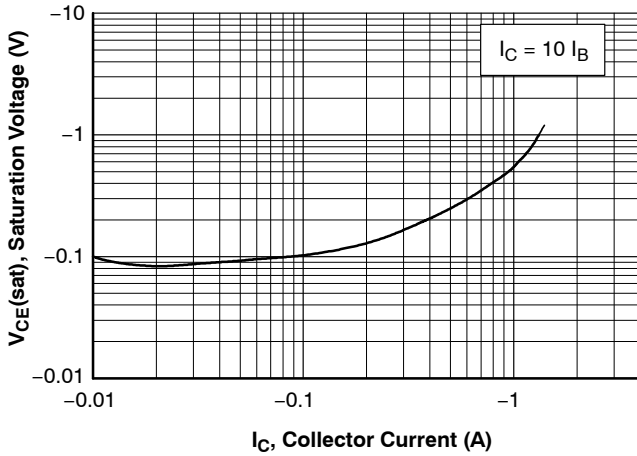


Figure 3. Collector-Emitter Saturation Voltage

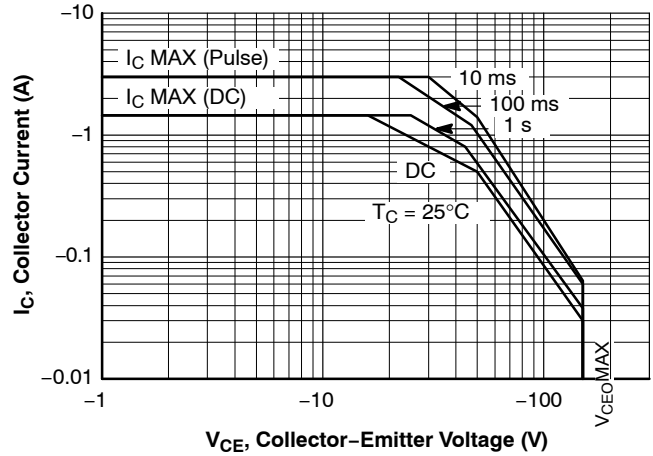


Figure 4. Safe Operating Area

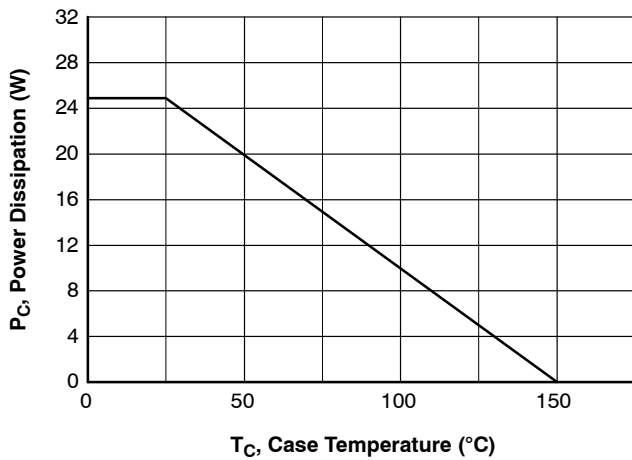
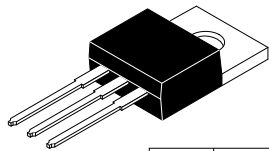


Figure 5. Power Derating



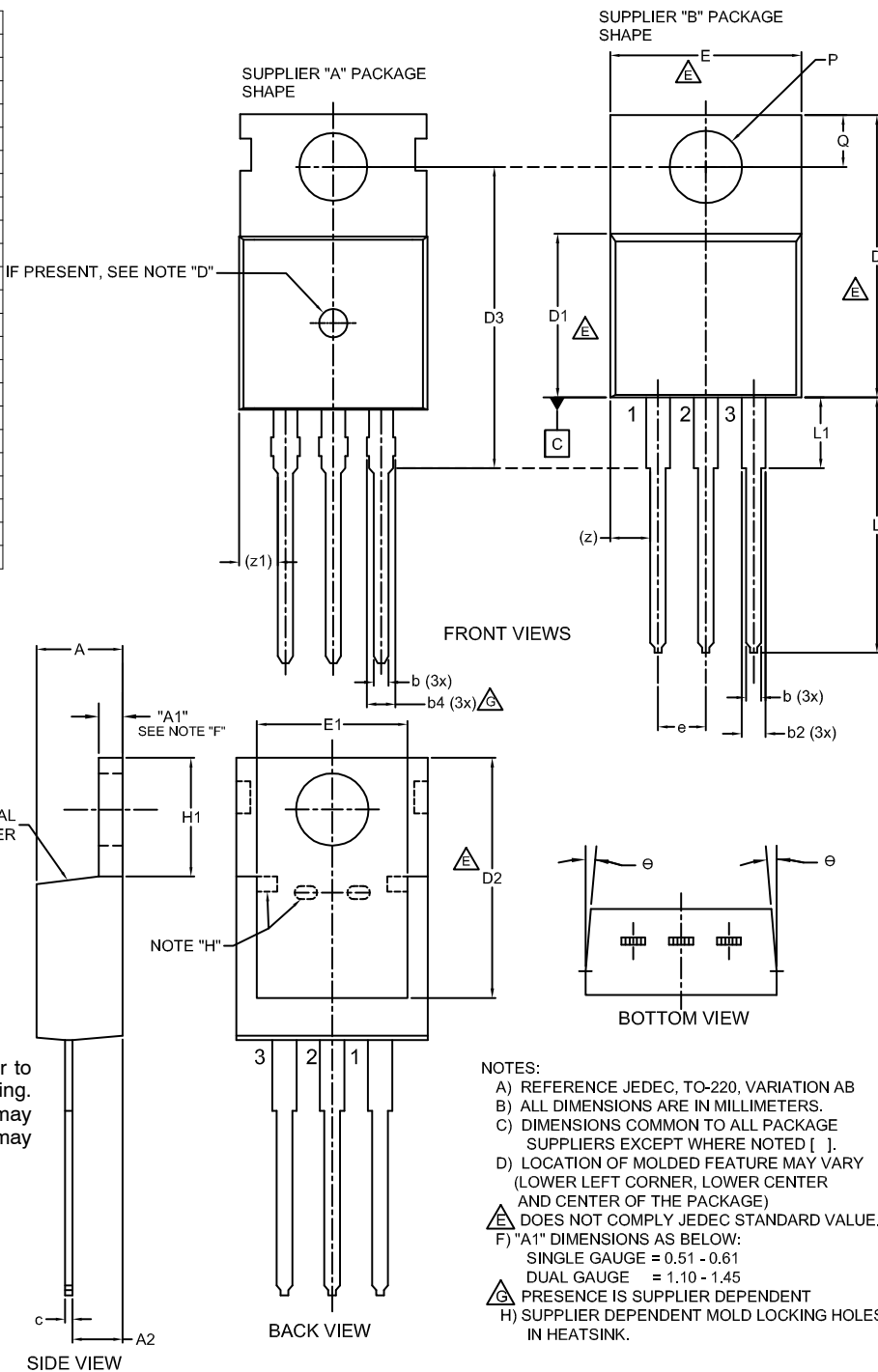
**MECHANICAL CASE OUTLINE  
PACKAGE DIMENSIONS**



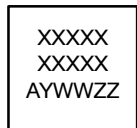
**TO-220-3LD  
CASE 340AT  
ISSUE B**

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°    |



**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)
- ⚠ DOES NOT COMPLY JEDEC STANDARD VALUE.
- F) "A1" DIMENSIONS AS BELOW:  
 SINGLE GAUGE = 0.51 - 0.61  
 DUAL GAUGE = 1.10 - 1.45
- ⚠ PRESENCE IS SUPPLIER DEPENDENT
- H) SUPPLIER DEPENDENT MOLD LOCKING HOLES IN HEATSINK.

|                         |                    |   |
|-------------------------|--------------------|---|
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| <b>DESCRIPTION:</b>     | <b>TO-220-3LD</b>  | <b>PAGE 1 OF 1</b>  |

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