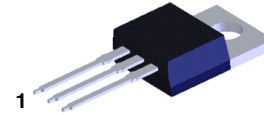


# Vertical Deflection Output Power Amplifier

## 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             |
|-----------|--------------------------------------------------|-----------|------------------|
| $V_{CBO}$ | 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 |

## TYPICAL PERFORMANCE CHARACTERISTICS

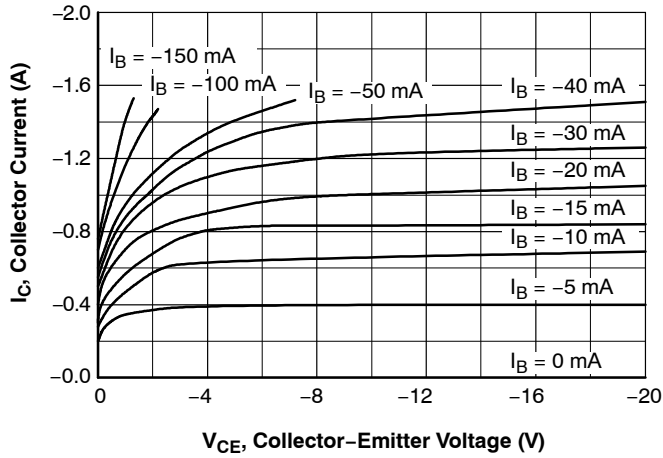


Figure 1. Static Characteristic

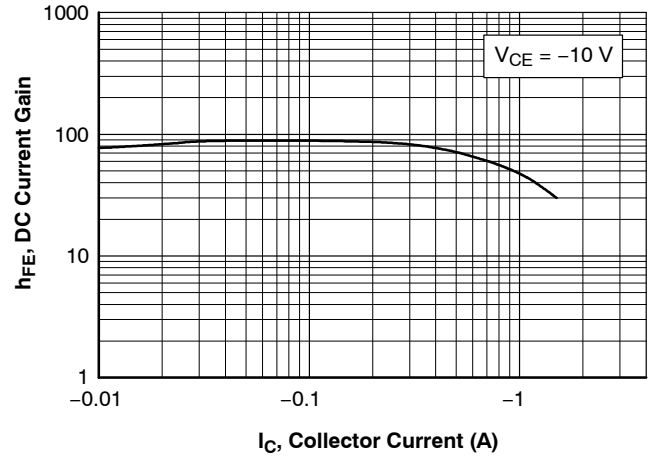


Figure 2. DC Current Gain

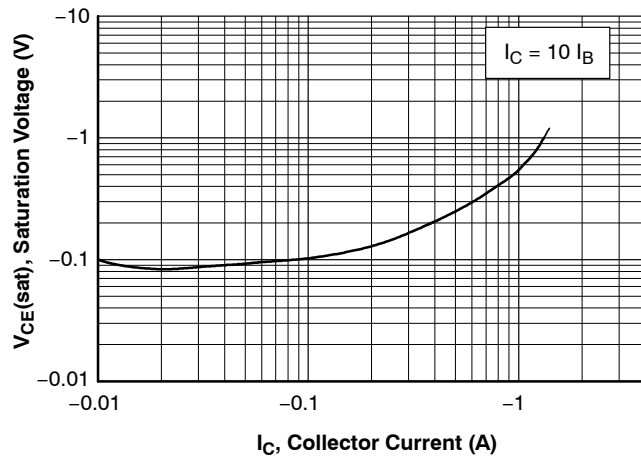


Figure 3. Collector-Emitter Saturation Voltage

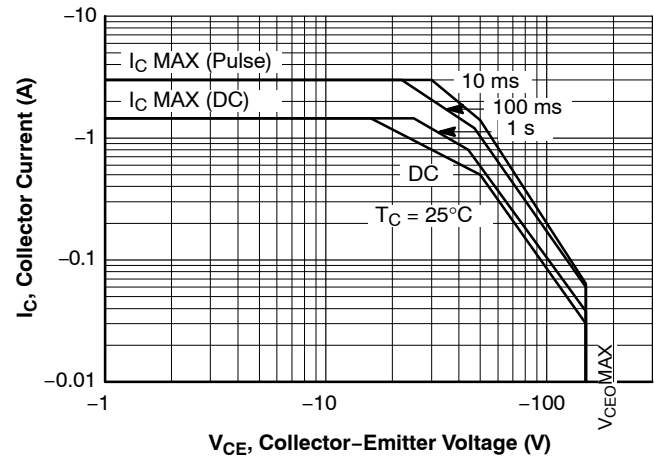


Figure 4. Safe Operating Area

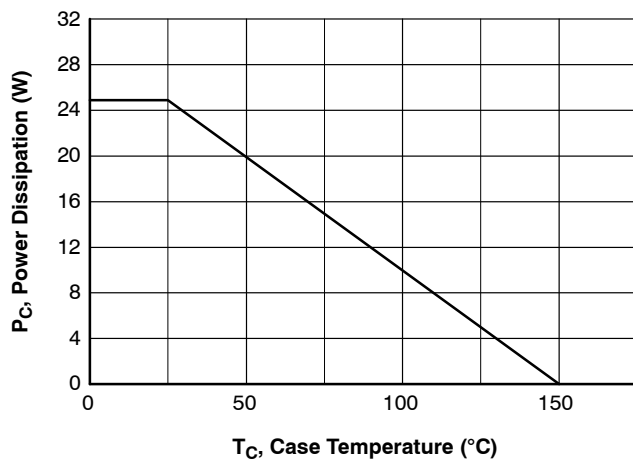
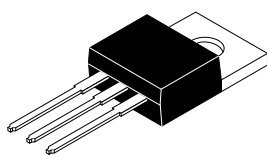


Figure 5. Power Derating

# MECHANICAL CASE OUTLINE PACKAGE DIMENSIONS

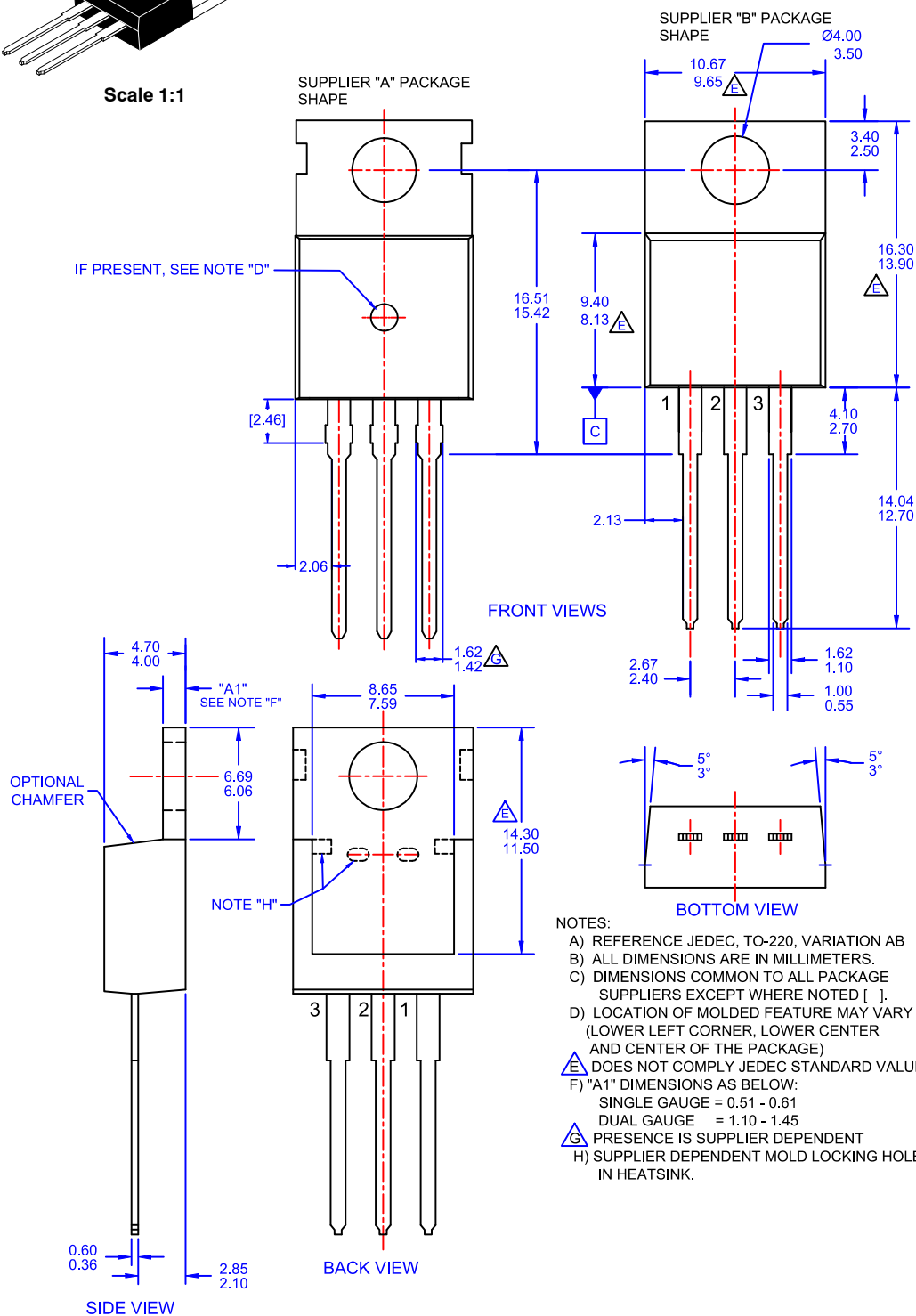
ON Semiconductor®



Scale 1:1

## TO-220-3LD CASE 340AT ISSUE A

DATE 03 OCT 2017



### NOTES:

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

|                  |             |                                                                                                                                                                                     |
|------------------|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
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