# PNP Epitaxial Silicon Transistor

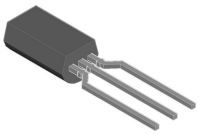
# KSA916

**Features**

- Audio Power Amplifier
- Driver Stage Amplifier
- Complement to KSC2316

**ON Semiconductor®**

www.onsemi.com



**TO−92 3 LF**
**CASE 135AM**

### ABSOLUTE MAXIMUM RATINGS

(Values are at $T_A$ = 25°C unless otherwise noted.)

| Symbol | Parameter | Value | Unit |
|---|---|---|---|
| $V_{CBO}$ | Collector−Base Voltage | −120 | V |
| $V_{CEO}$ | Collector−Emitter Voltage | −120 | V |
| $V_{EBO}$ | Emitter−Base Voltage | −5 | V |
| $I_C$ | Collector Current | −800 | mA |
| $T_J$ | Junction Temperature | 150 | °C |
| $T_{STG}$ | Storage Temperature | −55 to +150 | °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.

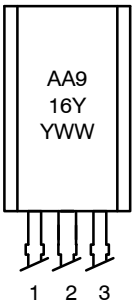
### THERMAL CHARACTERISTICS

(Values are at $T_A$ = 25°C unless otherwise noted.) (Note 1)

| Symbol | Parameter | Value | Unit |
|---|---|---|---|
| $P_D$ | Power Dissipation, by $R_{\theta JA}$ | 900 | mW |
| | Power Dissipation, by $R_{\theta JC}$ | 3 | W |
| | Derate Above 25°C, by $R_{\theta JA}$ | 7.2 | mW/°C |
| | Derate Above 25°C, by $R_{\theta JC}$ | 24 | mW/°C |
| $R_{\theta JA}$ | Thermal Resistance, Junction−to−Ambient | 130 | °C/W |
| $R_{\theta JC}$ | Thermal Resistance, Junction−to−Case | 41 | °C/W |

1. PCB size: FR−4, 76 mm × 114 mm × 1.57 mm (3.0 inch × 4.5 inch × 0.062 inch) with minimum land pattern size.

### MARKING DIAGRAM




1: Emitter
2: Collector
3: Base

A = Assembly Code
A916Y = Device Code
YWW = Date Code

### ORDERING INFORMATION

| Device | Package | Shipping |
|---|---|---|
| KSA916YTA | TO−92 3 LF (Pb−Free) | 2000 / Fan−Fold |

## ELECTRICAL CHARACTERISTICS

(Values are at $T_A$ = 25°C unless otherwise noted.)

| Symbol | Parameter | Conditions | Min. | Typ. | Max. | Unit |
|---|---|---|---|---|---|---|
| $BV_{CBO}$ | Collector−Base Breakdown Voltage | $I_C$ = −1 mA, $I_E$ = 0 | −120 | – | – | V |
| $BV_{CEO}$ | Collector−Emitter Breakdown Voltage | $I_C$ = −10 mA, $I_B$ = 0 | −120 | – | – | V |
| $BV_{EBO}$ | Emitter−Base Breakdown Voltage | $I_E$ = −1 mA, $I_C$ = 0 | −5 | – | – | V |
| $I_{CBO}$ | Collector Cut−Off Current | $V_{CB}$ = −120 V, $I_E$ = 0 | – | – | −0.1 | μA |
| $h_{FE1}$ | DC Current Gain | $V_{CE}$ = −5 V, $I_C$ = −10 mA | 60 | – | – | |
| $h_{FE2}$ | DC Current Gain | $V_{CE}$ = −5 V, $I_C$ = −100 mA | 80 | – | 240 | |
| $V_{CE}$(sat) | Collector−Emitter Saturation Voltage | $I_C$ = −500 mA, $I_B$ = −50 mA | – | – | −1 | V |
| $f_T$ | Current Gain Bandwidth Product | $V_{CE}$ = −5 V, $I_C$ = −100 mA | – | 120 | – | MHz |
| $C_{ob}$ | Output Capacitance | $V_{CB}$ = −10 V, $I_E$ = 0, f = 1 MHz | – | – | 40 | 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.

## $h_{FE}$ CLASSIFICATION

| Classification | O | Y |
|---|---|---|
| $h_{FE2}$ | 80 ~ 160 | 120 ~ 240 |

## TYPICAL PERFORMANCE CHARACTERISTICS

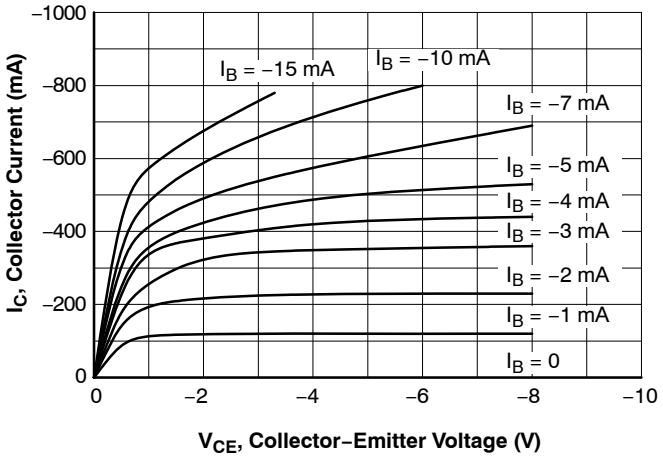



**Figure 1. Static Characteristic**

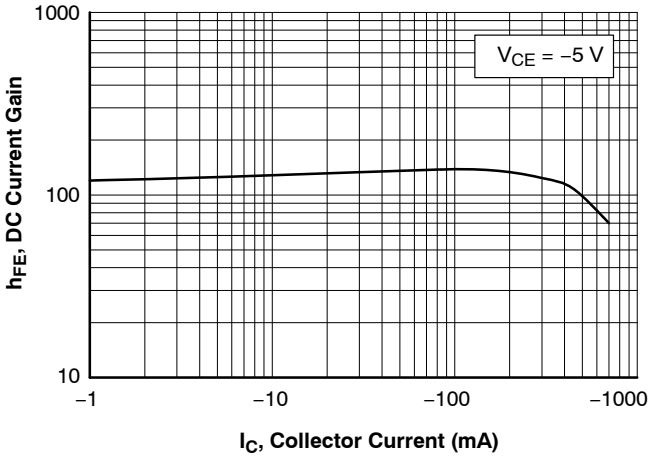



**Figure 2. DC Current Gain**

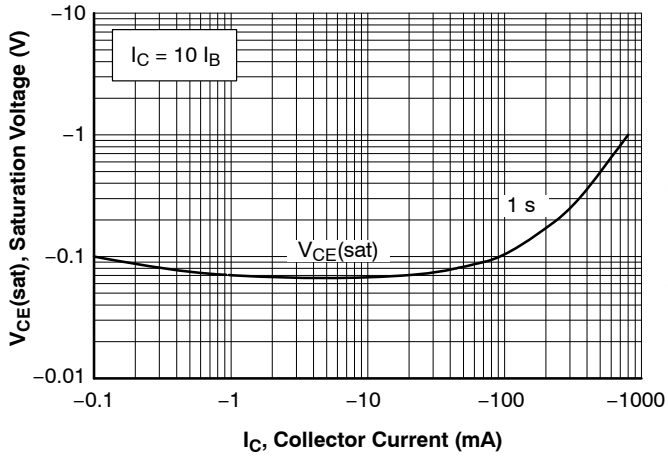



**Figure 3. Collector−Emitter Saturation Voltage**

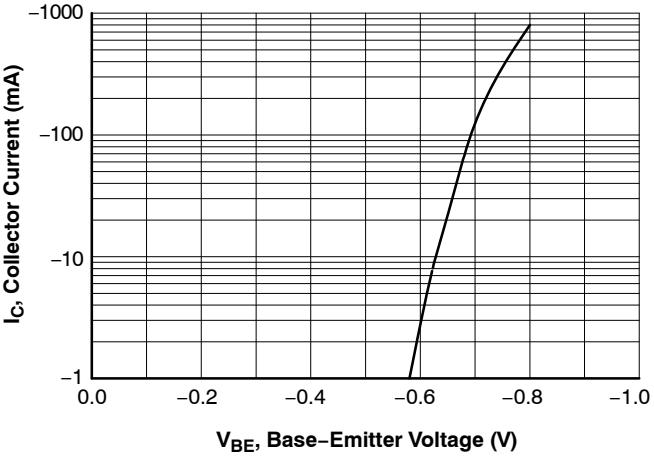



**Figure 4. Base−Emitter On Voltage**

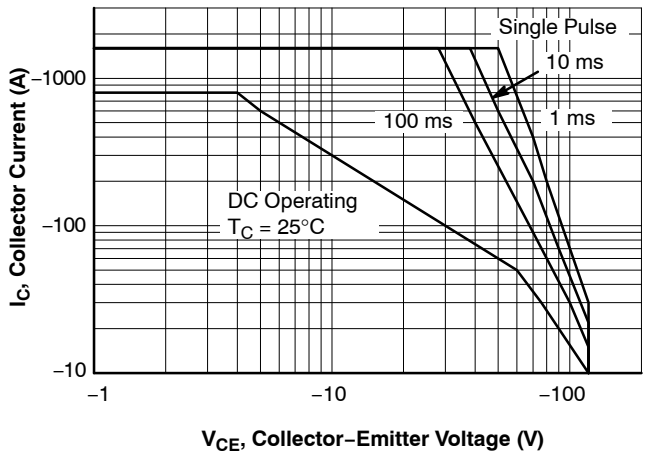



**Figure 5. Safe Operating Area**

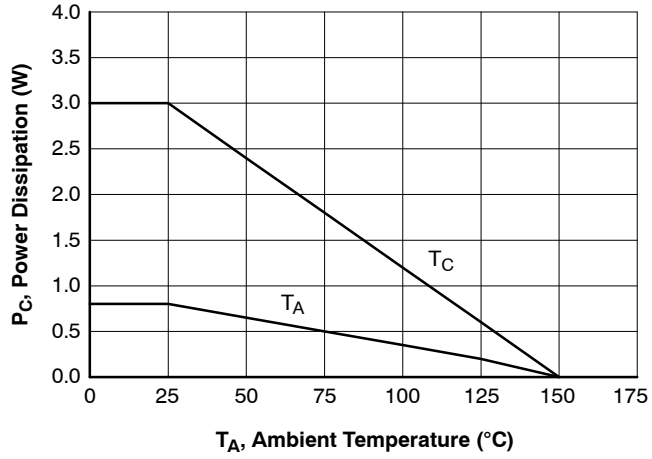
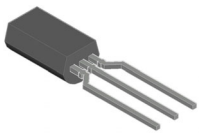
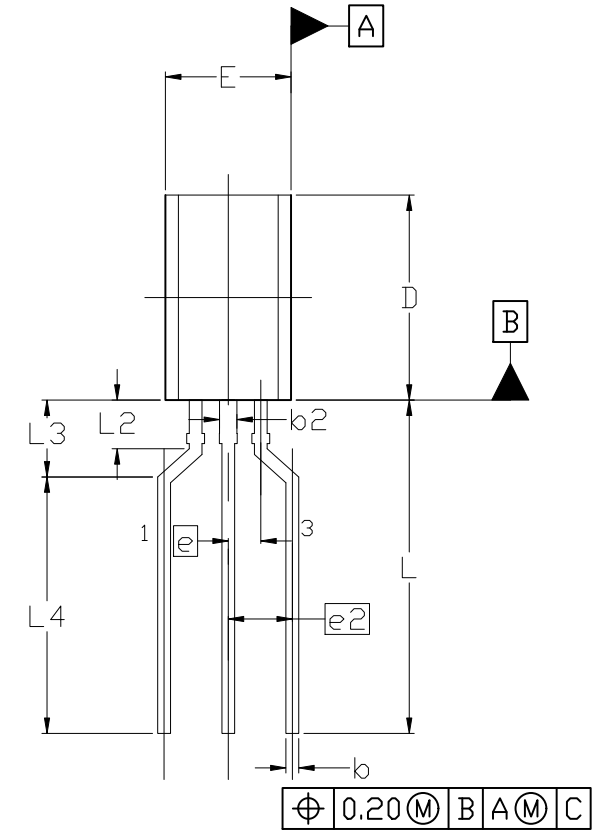



**Figure 6. Power Derating**

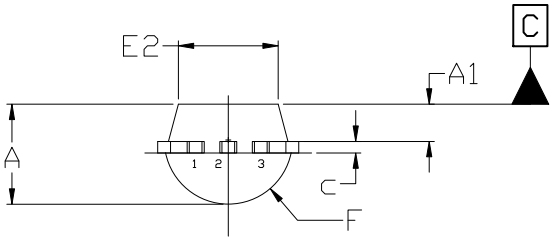


**TO−92 3 8.0x4.9 (LEADFORMED)**
CASE 135AM
ISSUE B

DATE 14 JAN 2021




TOP VIEW




END VIEW

NOTES:
1. DIMENSIONING AND TOLERANCING PER ASME Y14.5M, 2009.
2. CONTROLLING DIMENSION: MILLIMETERS
3. DIMENSIONS ARE EXCLUSIVE OF BURRS, MOLD FLASH, GATE REMAINS AND TIE BAR PROTRUSIONS.
4. DIMENSION b AND b2 DOES NOT INCLUDE DAMBAR PROTRUSION. DIMENSION b2 LOCATED ABOVE THE DAMBAR PORTION OF MIDDLE LEAD.

| | MILLIMETERS | | |
|---|---|---|---|
| DIM | MIN. | NOM. | MAX. |
| A | 3.70 | 3.90 | 4.10 |
| A1 | 1.25 | 1.45 | 1.65 |
| b | 0.35 | 0.50 | 0.60 |
| b2 | 0.62 | --- | 0.78 |
| c | 0.35 | 0.45 | 0.55 |
| D | 7.80 | 8.00 | 8.20 |
| E | 4.70 | 4.90 | 5.10 |
| E2 | 3.70 | 3.90 | 4.10 |
| e | 1.27 BSC | | |
| e2 | 2.50 BSC | | |
| F | 2.45 REF | | |
| L | 13.00 REF | | |
| L2 | 1.50 | --- | 1.90 |
| L3 | 2.60 | --- | 3.40 |
| L4 | 10.40 REF | | |

| | | |
|---|---|---|
| **DOCUMENT NUMBER:** | **98AON14058G** | Electronic versions are uncontrolled except when accessed directly from the Document Repository. Printed versions are uncontrolled except when stamped "CONTROLLED COPY" in red. |
| **DESCRIPTION:** | **TO−92 3 8.0X4.9 (LEADFORMED)** | **PAGE 1 OF 1** |

## PUBLICATION ORDERING INFORMATION

**LITERATURE FULFILLMENT**:
**Email Requests to:** orderlit@onsemi.com

**onsemi Website:** www.onsemi.com

**TECHNICAL SUPPORT**
**North American Technical Support:**
Voice Mail: 1 800−282−9855 Toll Free USA/Canada
Phone: 011 421 33 790 2910

**Europe, Middle East and Africa Technical Support:**
Phone: 00421 33 790 2910
For additional information, please contact your local Sales Representative

◊