# KSA916OBU Datasheet


https://www.DiGi-Electronics.com

| | |
|---|---|
| DiGi Electronics Part Number | KSA916OBU-DG |
| Manufacturer | onsemi |
| Manufacturer Product Number | KSA916OBU |
| Description | TRANS PNP 120V 0.8A TO92-3 |
| Detailed Description | Bipolar (BJT) Transistor PNP 120 V 800 mA 120MHz 900 mW Through Hole TO-92-3 |

Tel: +00 852-30501935

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## Purchase and inquiry

| Manufacturer Product Number: | Manufacturer: |
| --- | --- |
| KSA916OBU | onsemi |
| Series: | Product Status: |
| - | Obsolete |
| Transistor Type: | Current - Collector (Ic) (Max): |
| PNP | 800 mA |
| Voltage - Collector Emitter Breakdown (Max): | Vce Saturation (Max) @ Ib, Ic: |
| 120 V | 1V @ 50mA, 500mA |
| Current - Collector Cutoff (Max): | DC Current Gain (hFE) (Min) @ Ic, Vce: |
| 100nA (ICBO) | 80 @ 100mA, 5V |
| Power - Max: | Frequency - Transition: |
| 900 mW | 120MHz |
| Operating Temperature: | Mounting Type: |
| 150°C (TJ) | Through Hole |
| Package / Case: | Supplier Device Package: |
| TO-226-3, TO-92-3 Long Body | TO-92-3 |
| Base Product Number: | |
| KSA916 | |

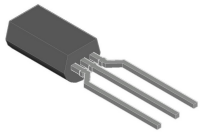
## Environmental & Export classification

| Moisture Sensitivity Level (MSL): | REACH Status: |
| --- | --- |
| 1 (Unlimited) | REACH Unaffected |
| ECCN: | HTSUS: |
| EAR99 | 8541.21.0075 |

DATA SHEET
www.onsemi.com

# PNP Epitaxial Silicon Transistor

# KSA916



**TO−92 3 LF**
**CASE 135AM**

### Features

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

### 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.

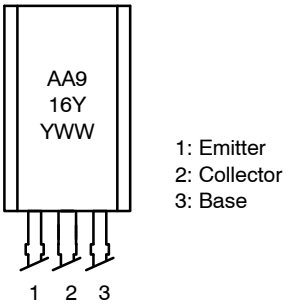
### THERMAL CHARACTERISTICS

(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




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

### ORDERING INFORMATION

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

# KSA916

## 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 |

# KSA916

## TYPICAL PERFORMANCE CHARACTERISTICS

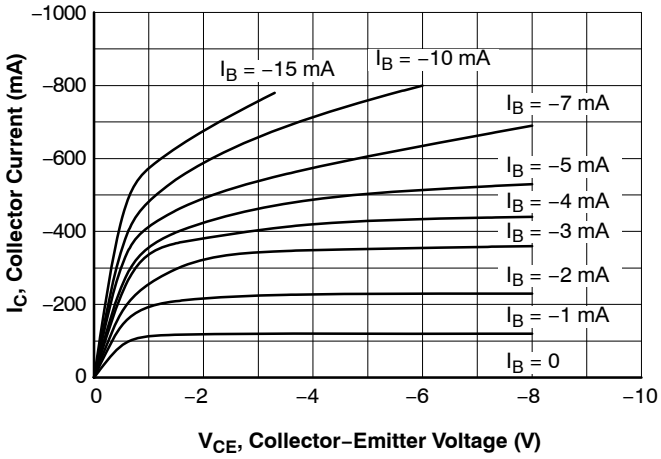



**Figure 1. Static Characteristic**

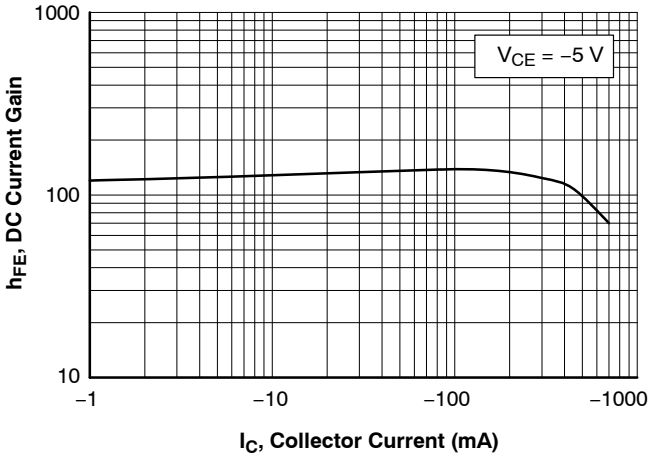



**Figure 2. DC Current Gain**

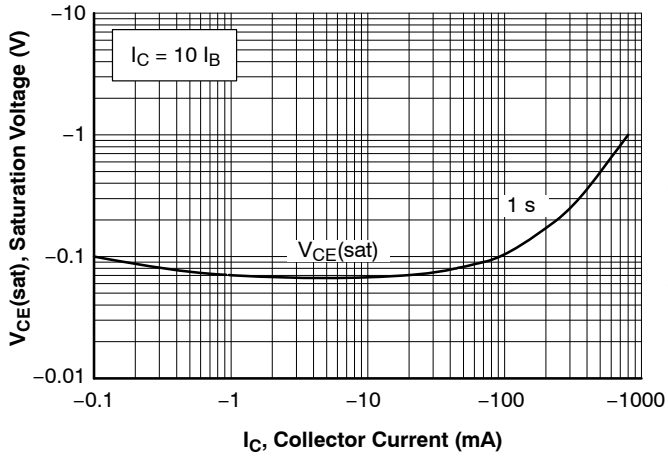



**Figure 3. Collector−Emitter Saturation Voltage**

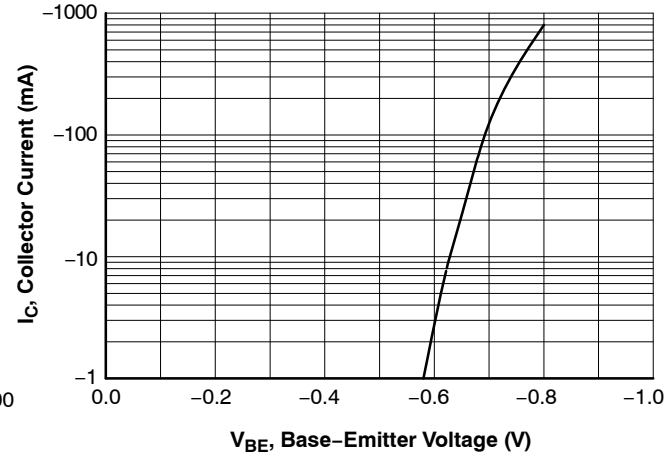



**Figure 4. Base−Emitter On Voltage**

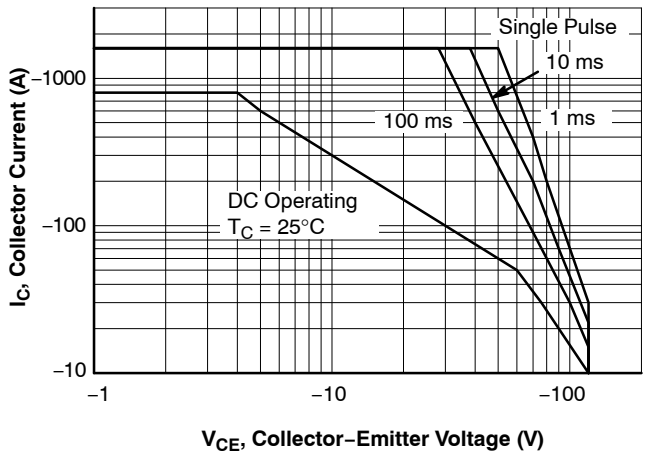



**Figure 5. Safe Operating Area**

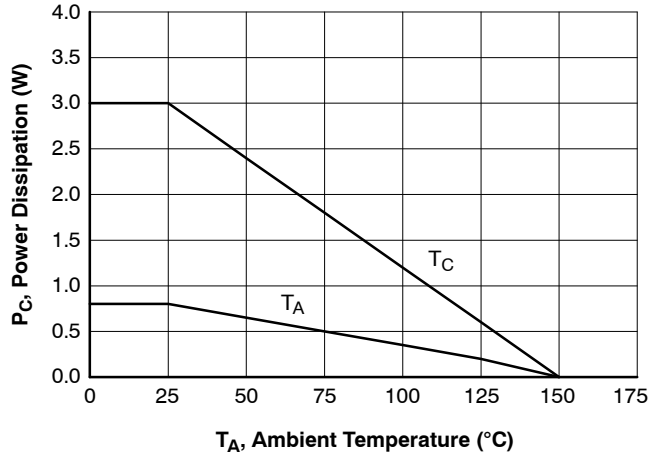



**Figure 6. Power Derating**

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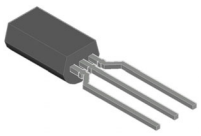
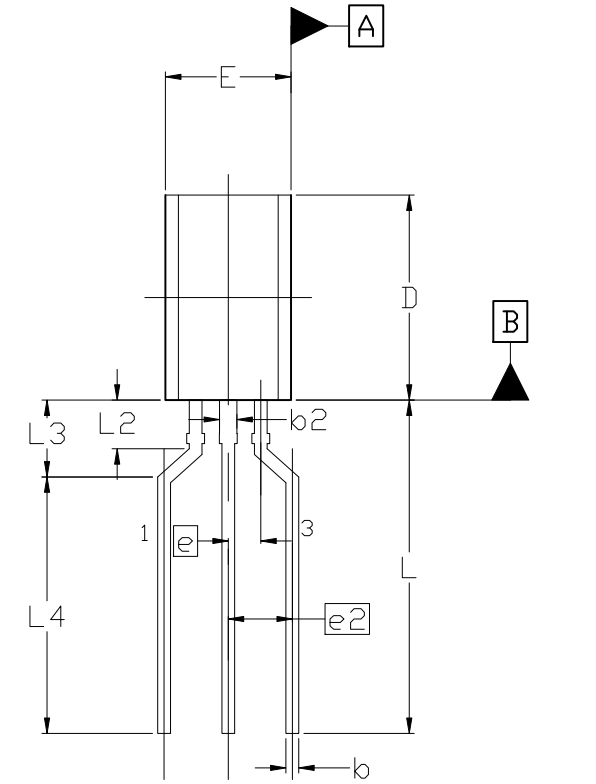
# MECHANICAL CASE OUTLINE
## PACKAGE DIMENSIONS

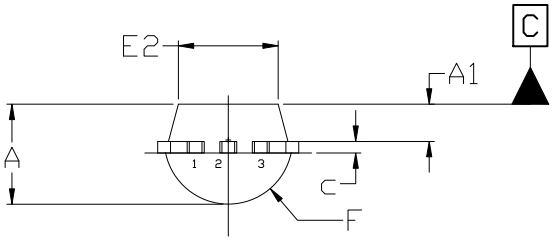


**TO−92 3 8.0x4.9 (LEADFORMED)**
CASE 135AM
ISSUE B

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 | | |

| | | | |
|---|---|---|---|
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| **DESCRIPTION:** | **TO−92 3 8.0X4.9 (LEADFORMED)** | | **PAGE 1 OF 1** |

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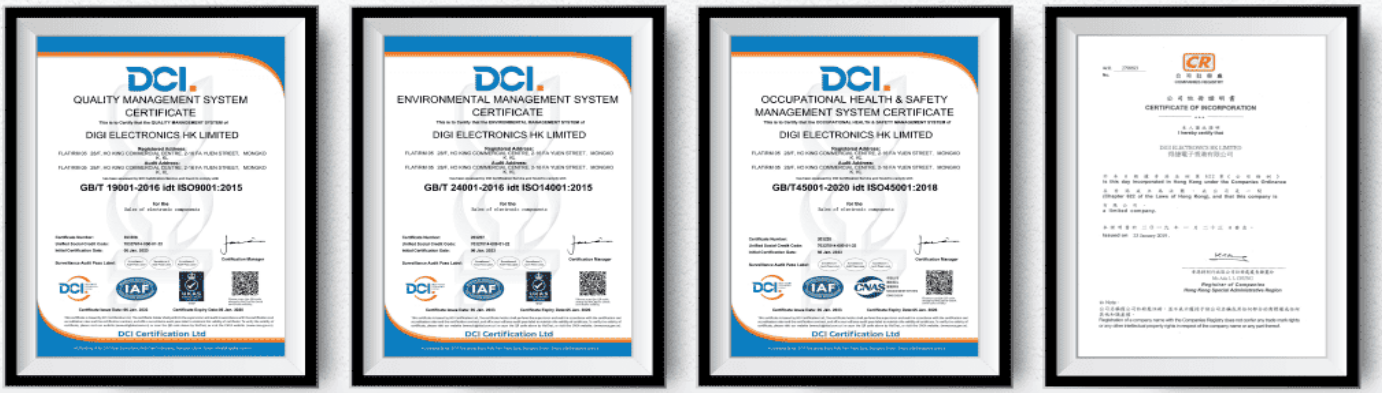



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