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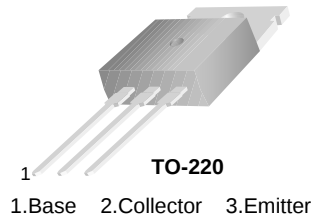
August 2009

# KSA473

## PNP Epitaxial Silicon Transistor

### Features

- Low Frequency Power Amplifier, Power Regulator
- Collector Current :  $I_C = -3A$
- Collector Dissipation :  $P_C = 10W$  ( $T_C=25^\circ C$ )
- Complement to KSC1173



### Absolute Maximum Ratings \* $T_A = 25^\circ C$ unless otherwise noted

| Symbol    | Parameter                                  | Value         | Units      |
|-----------|--------------------------------------------|---------------|------------|
| $V_{CBO}$ | Collector-Base Voltage                     | - 30          | V          |
| $V_{CEO}$ | Collector-Emitter Voltage                  | - 30          | V          |
| $V_{EBO}$ | Emitter-Base Voltage                       | - 5           | V          |
| $I_C$     | Collector Current                          | - 3           | A          |
| $P_C$     | Collector Dissipation ( $T_C=25^\circ C$ ) | 10            | W          |
| $T_J$     | Junction Temperature                       | 150           | $^\circ C$ |
| $T_{STG}$ | Storage Temperature                        | - 55 to + 150 | $^\circ C$ |

\* These ratings are limiting values above which the serviceability of any semiconductor device may be impaired.

**Electrical Characteristics**  $T_A = 25^\circ\text{C}$  unless otherwise noted

| Symbol                 | Parameter                            | Test Condition                                                                         | Min.     | Typ.  | Max. | Units         |
|------------------------|--------------------------------------|----------------------------------------------------------------------------------------|----------|-------|------|---------------|
| $BV_{CBO}$             | Collector-Base Breakdown Voltage     | $I_C = -500\mu\text{A}, I_E = 0$                                                       | -30      |       |      | V             |
| $BV_{CEO}$             | Collector-Emitter Breakdown Voltage  | $I_C = -10\text{mA}, I_B = 0$                                                          | -30      |       |      | V             |
| $BV_{EBO}$             | Emitter-Base Breakdown Voltage       | $I_E = -1\text{mA}, I_C = 0$                                                           | -5       |       |      | V             |
| $I_{CBO}$              | Collector Cut-off Current            | $V_{CB} = -20\text{V}, I_E = 0$                                                        |          |       | -1.0 | $\mu\text{A}$ |
| $I_{EBO}$              | Emitter Cut-off Current              | $V_{EB} = -5\text{V}, I_C = 0$                                                         |          |       | -1.0 | $\mu\text{A}$ |
| $h_{FE1}$<br>$h_{FE2}$ | DC Current Gain                      | $V_{CE} = -2\text{V}, I_C = -0.5\text{A}$<br>$V_{CE} = -2\text{V}, I_C = -2.5\text{A}$ | 70<br>25 |       | 240  |               |
| $V_{CE(sat)}$          | Collector-Emitter Saturation Voltage | $I_C = -2\text{A}, I_B = -0.2\text{A}$                                                 |          | -0.3  | -0.8 | V             |
| $V_{BE(on)}$           | Base-Emitter On Voltage              | $V_{CE} = -2\text{V}, I_C = -0.5\text{A}$                                              |          | -0.75 | -1.0 | V             |
| $f_T$                  | Current Gain Bandwidth Product       | $V_{CE} = -2\text{V}, I_C = -0.5\text{A}$                                              |          | 100   |      | MHz           |
| $C_{ob}$               | Output Capacitance                   | $V_{CB} = -10\text{V}, I_E = 0,$<br>$f = 1\text{MHz}$                                  |          | 40    |      | pF            |

 **$h_{FE}$  Classification**

| Classification | O        | Y         |
|----------------|----------|-----------|
| $h_{FE1}$      | 70 ~ 140 | 120 ~ 240 |

## Typical Performance Characteristics

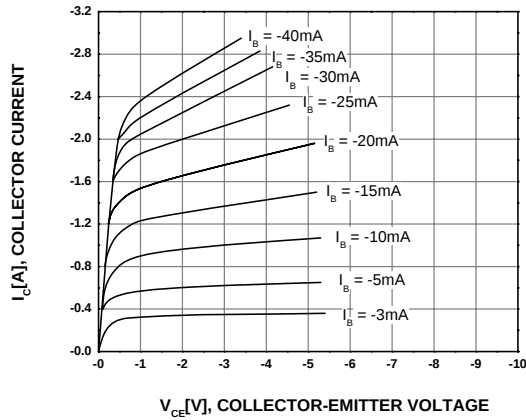


Figure 1. Static Characteristic

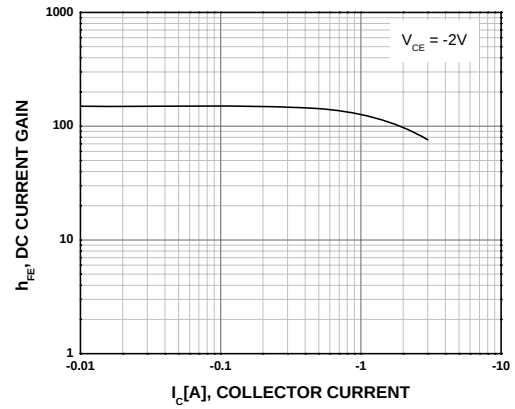


Figure 2. DC current Gain

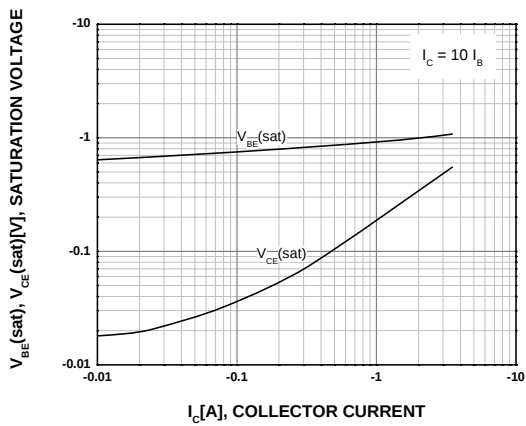


Figure 3. Base-Emitter Saturation Voltage  
Collector-Emitter Saturation Voltage

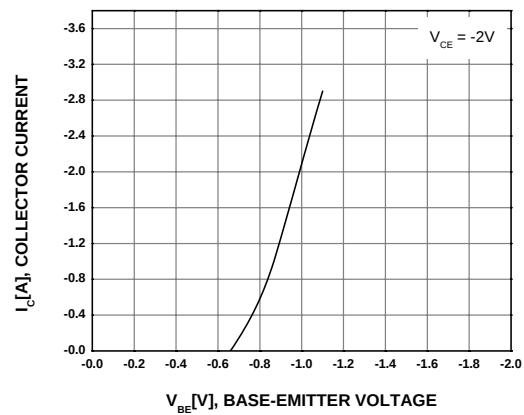


Figure 4. Base-Emitter On Voltage

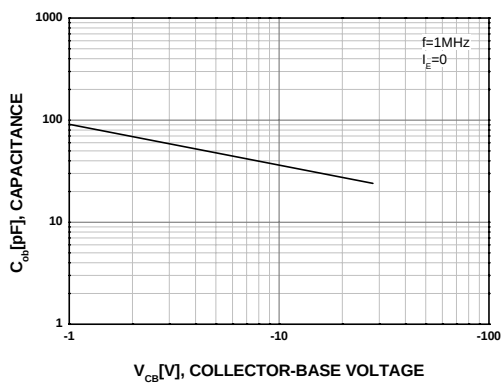


Figure 5. Collector Output Capacitance

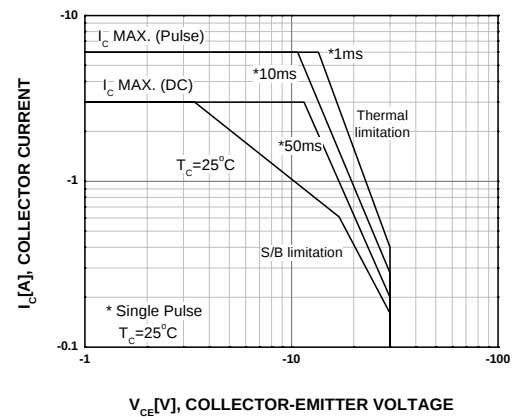


Figure 6. Safe Operating Area

## Typical Performance Characteristics

(Continued)

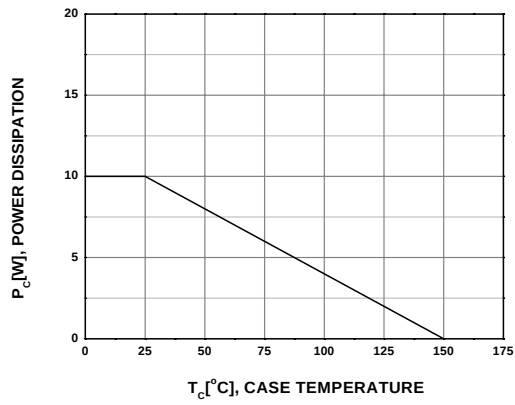
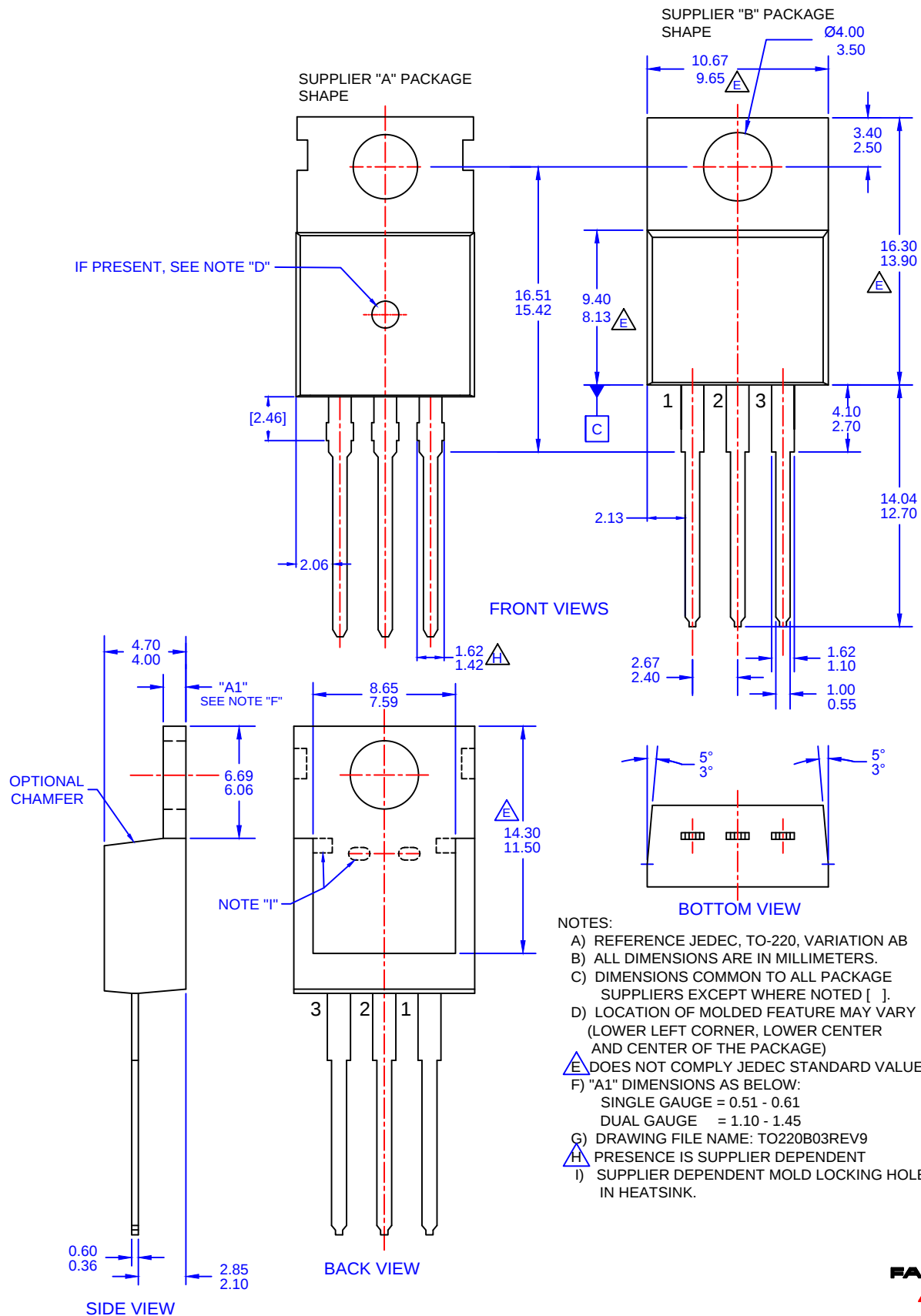


Figure 7. Power Derating



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