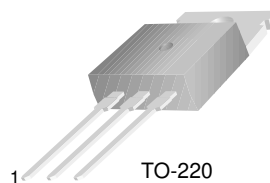


## KSD73

### Low Frequency High Power Amplifier

- Collector-Base Voltage :  $V_{CBO} = 100V$
- Collector Current :  $I_C = 5A$
- Collector Dissipation :  $P_C = 30W$  ( $T_C=25^\circ C$ )



TO-220  
1.Base 2.Collector 3.Emitter

### NPN Epitaxial Silicon Transistor

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

| Symbol    | Parameter                                  | Value      | Units      |
|-----------|--|------------|------------|
| $V_{CBO}$ | Collector-Base Voltage                     | 100        | V          |
| $V_{CEO}$ | Collector-Emitter Voltage                  | 60         | V          |
| $V_{EBO}$ | Emitter-Base Voltage                       | 5          | V          |
| $I_C$     | Collector Current                          | 5          | A          |
| $P_C$     | Collector Dissipation ( $T_C=25^\circ C$ ) | 30         | W          |
| $T_J$     | Junction Temperature                       | 150        | $^\circ C$ |
| $T_{STG}$ | Storage Temperature                        | - 55 ~ 150 | $^\circ C$ |

#### Electrical Characteristics $T_C=25^\circ C$ unless otherwise noted

| Symbol        | Parameter                            | Test Condition             | Min. | Typ. | Max. | Units |
|---------------|--------------------------------------|----------------------------|------|------|------|-------|
| $BV_{CBO}$    | Collector-Base Breakdown Voltage     | $I_C = 1mA, I_E = 0$       | 100  |      |      | V     |
| $BV_{CEO}$    | Collector-Emitter Breakdown Voltage  | $I_C = 20mA, I_B = 0$      | 60   |      |      | V     |
| $BV_{EBO}$    | Emitter-Base Breakdown Voltage       | $I_E = 1mA, I_C = 0$       | 5    |      |      | V     |
| $I_{CBO}$     | Collector Cut-off Current            | $V_{CB} = 100V, I_E = 0$   |      |      | 5    | mA    |
| $h_{FE}$      | DC Current Gain                      | $V_{CE} = 10V, I_C = 1.0A$ | 70   |      | 240  |       |
| $V_{CE(sat)}$ | Collector-Emitter Saturation Voltage | $I_C = 5A, I_B = 0.5A$     |      |      | 2.0  | V     |
| $V_{BE(sat)}$ | Base-Emitter Saturation Voltage      | $I_C = 5A, I_B = 0.5A$     |      |      | 1.5  | V     |
| $f_T$         | Current Gain Bandwidth Product       | $V_{CE} = 10V, I_C = 0.3A$ |      | 20   |      | MHz   |
| $V_{BE(on)}$  | Base-Emitter ON Voltage              | $V_{CE} = 10V, I_E = 1.0A$ |      | 0.75 |      | V     |

#### $h_{FE}$ Classification

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

# Typical Characteristics

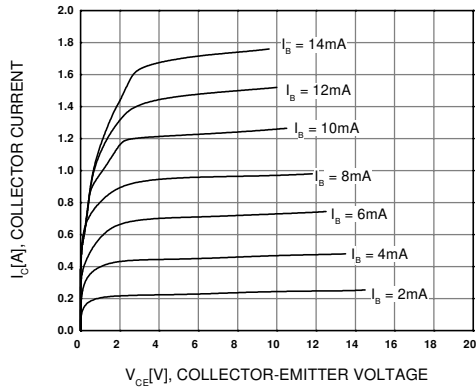


Figure 1. Static Characteristic

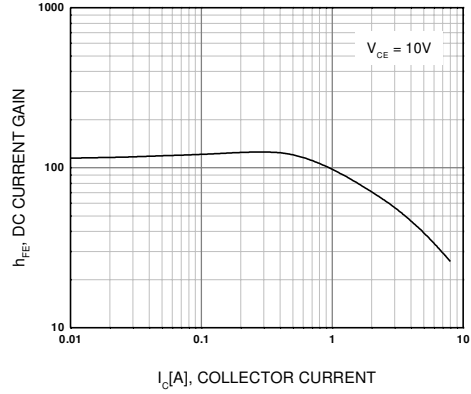


Figure 2. DC current Gain

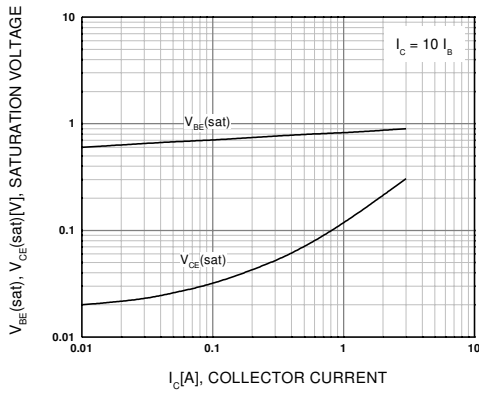


Figure 3. Base-Emitter Saturation Voltage  
Collector-Emitter Saturation Voltage

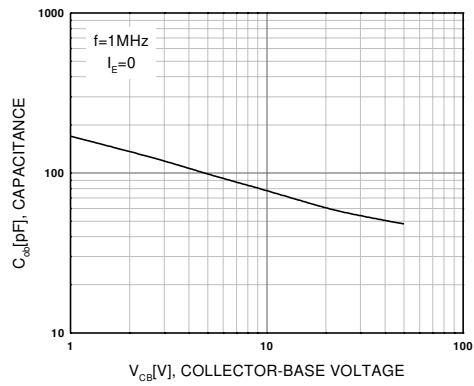


Figure 4. Collector Output Capacitance

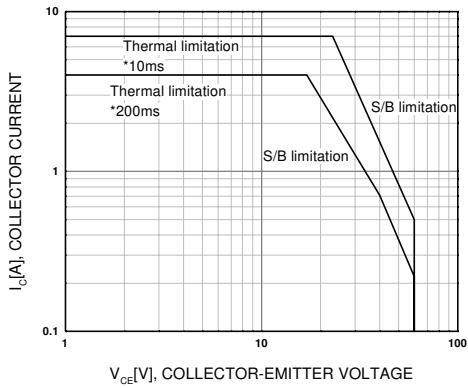


Figure 5. Safe Operating Area

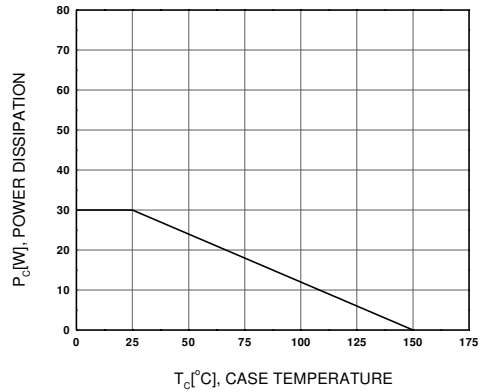
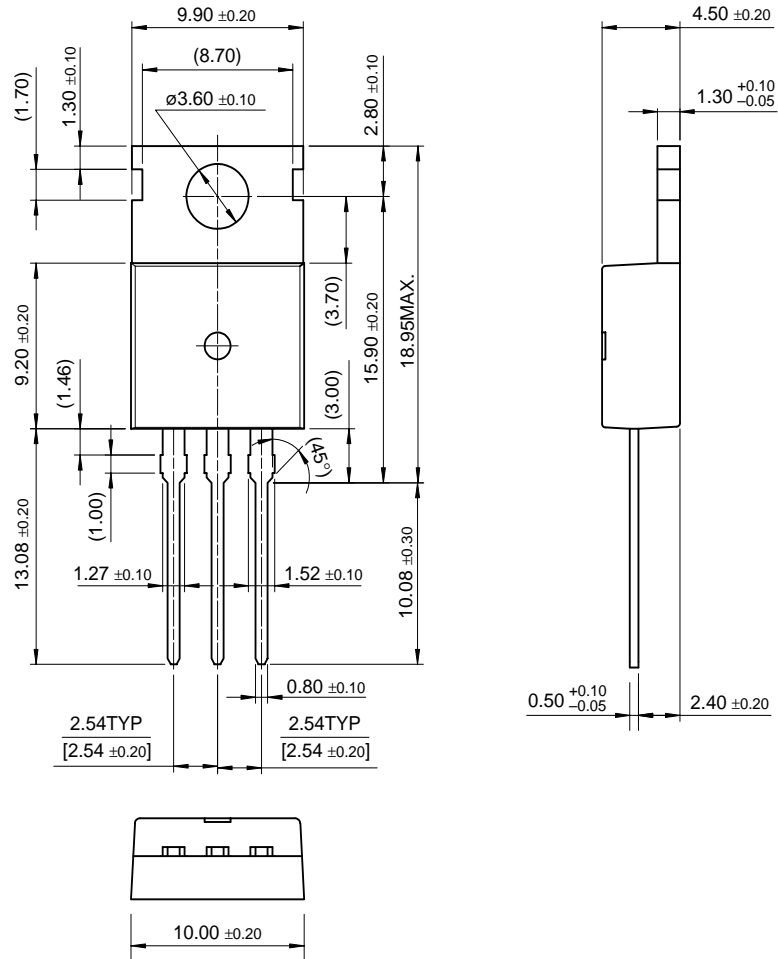


Figure 6. Power Derating

# Package Dimensions

KSD73

## TO-220



Dimensions in Millimeters

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| CoolFET™             | MICROWIRE™    | TinyLogic™  |
| CROSSVOLT™           | POP™          | UHC™        |
| E <sup>2</sup> CMOS™ | PowerTrench®  | VCX™        |
| FACT™                | QFET™         |             |
| FACT Quiet Series™   | QS™           |             |
| FAST®                | Quiet Series™ |             |
| FASTr™               | SuperSOT™-3   |             |
| GTO™                 | SuperSOT™-6   |             |

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