

isc Silicon NPN Power Transistors

BUV28F/AF

DESCRIPTION

- Collector-Emitter Sustaining Voltage-
: $V_{CEO(SUS)} = 200V(\text{Min})$ - BUV28F
225V(Min)- BUV28AF
- High Switching Speed

APPLICATIONS

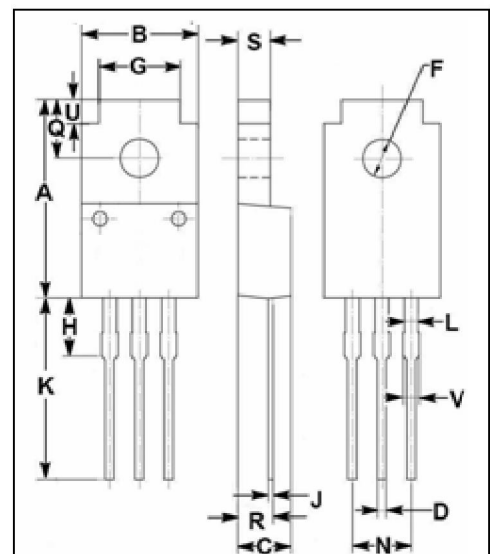
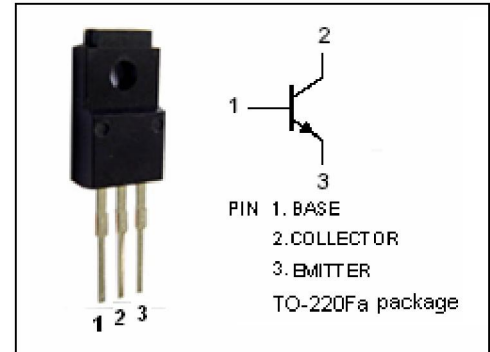
- Designed for fast switching applications such as high frequency and efficiency converters, switching regulators and motor control.

ABSOLUTE MAXIMUM RATINGS($T_a=25^\circ\text{C}$)

| SYMBOL | PARAMETER | VALUE | UNIT | |
|-----------|---|---------|------------------|---|
| V_{CES} | Collector-Emitter Voltage $V_{BE} = 0$ | BUV28F | 400 | V |
| | | BUV28AF | 450 | |
| V_{CEO} | Collector-Emitter Voltage | BUV28F | 200 | V |
| | | BUV28AF | 225 | |
| V_{EBO} | Emitter-Base Voltage | 5 | V | |
| I_C | Collector Current-Continuous | 12 | A | |
| I_{CM} | Collector Current-Peak | 20 | A | |
| I_B | Base Current-Continuous | 2 | A | |
| I_{BM} | Base Current-Peak | 4 | A | |
| P_C | Collector Power Dissipation @ $T_c=25^\circ\text{C}$ | 18 | W | |
| T_J | Junction Temperature | 150 | $^\circ\text{C}$ | |
| T_{stg} | Storage Temperature Range | -65~150 | $^\circ\text{C}$ | |

THERMAL CHARACTERISTICS

| SYMBOL | PARAMETER | MAX | UNIT |
|---------------|---|-----|--------------------|
| $R_{th\ j-c}$ | Thermal Resistance, Junction to Case | 7.0 | $^\circ\text{C/W}$ |
| $R_{th\ j-a}$ | Thermal Resistance, Junction to Ambient | 55 | $^\circ\text{C/W}$ |



| DIM | mm | |
|-----|-------|-------|
| | MIN | MAX |
| A | 16.85 | 17.15 |
| B | 9.90 | 10.10 |
| C | 4.35 | 4.65 |
| D | 0.75 | 0.80 |
| F | 3.20 | 3.40 |
| G | 6.90 | 7.10 |
| H | 5.15 | 5.45 |
| J | 0.45 | 0.75 |
| K | 13.35 | 13.65 |
| L | 1.10 | 1.30 |
| N | 4.98 | 5.18 |
| Q | 4.85 | 5.15 |
| R | 2.95 | 3.25 |
| S | 2.70 | 2.90 |
| U | 1.75 | 2.05 |
| V | 1.30 | 1.50 |

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ELECTRICAL CHARACTERISTICS

 $T_C=25^\circ\text{C}$ unless otherwise specified

| SYMBOL | PARAMETER | CONDITIONS | MIN | TYP. | MAX | UNIT |
|----------------|--------------------------------------|---|---|------|----------------------------------|------|
| $V_{CEO(SUS)}$ | Collector-Emitter Sustaining Voltage | BUV28F | $I_C=0.2\text{A}; I_B=0; L=25\text{mH}$ | | | V |
| | | BUV28AF | | | | |
| $V_{CE(sat)}$ | Collector-Emitter Saturation Voltage | BUV28F | | | 1.5 | V |
| | | BUV28AF | | | $I_C=4\text{A}; I_B=0.4\text{A}$ | |
| $V_{BE(sat)}$ | Base-Emitter Saturation Voltage | BUV28F | | | 2.0 | V |
| | | BUV28AF | | | $I_C=4\text{A}; I_B=0.4\text{A}$ | |
| I_{CEX} | Collector Cutoff Current | $V_{CE}=V_{CESmax}; V_{BE}=-1.5\text{V}; T_J=125^\circ\text{C}$ | | | 1.0 | mA |
| I_{CES} | Collector Cutoff Current | $V_{CE}=V_{CESmax}; V_{BE}=0; T_J=125^\circ\text{C}$ | | | 3.0 | mA |
| I_{EBO} | Emitter Cutoff Current | $V_{EB}=5\text{V}; I_C=0$ | | | 1.0 | mA |

Switching Times; Resistive Load

| | | | | | | |
|-----------|--------------|--|---|-----|------|---------------|
| t_{on} | Turn-On Time | For BUV28F $I_C=6\text{A}; I_{B1}=0.6\text{A}; I_{B2}=-1.2\text{A}$ | | 0.3 | 1.0 | μs |
| t_{stg} | Storage Time | | For BUV28AF $I_C=4\text{A}; I_{B1}=0.4\text{A}; I_{B2}=-0.8\text{A}$ | | 0.5 | 1.5 |
| t_f | Fall Time | | | 0.1 | 0.25 | μs |