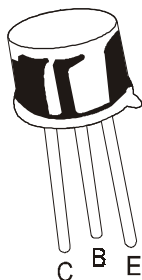


SILICON PLANAR TRANSISTORS

BFY50, BFY51, BFY52



TO-39

Metal Can Package

General Purpose Transistors.

ABSOLUTE MAXIMUM RATINGS (Ta=25°C unless specified otherwise)

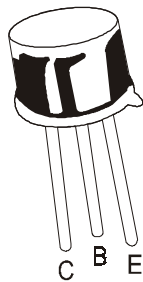
| DESCRIPTION | SYMBOL | BFY50 | BFY51 | BFY52 | UNITS |
|--|----------------|-------------|-------|-------|-------|
| Collector Emitter Voltage | V_{CEO} | 35 | 30 | 20 | V |
| Collector Base Voltage | V_{CBO} | 80 | 60 | 40 | V |
| Emitter Base Voltage | V_{EBO} | | 6.0 | | V |
| Collector Current Continuous | I_C | | 1.0 | | A |
| Power Dissipation @ Ta=25°C | P_D | | 0.8 | | W |
| Derate Above 25°C | | | 4.6 | | mW/°C |
| Power Dissipation@ Tc=25°C | P_D | | 5.0 | | W |
| Derate Above 25°C | | | 28.6 | | mW/°C |
| Operating And Storage Junction Temperature Range | T_j, T_{stg} | -65 to +200 | | | °C |

THERMAL RESISTANCE

| | | | | | |
|---------------------|---------------|--|------|--|------|
| Junction to Ambient | $R_{th(j-a)}$ | | 89.5 | | °C/W |
| Junction to Case | $R_{th(j-c)}$ | | 16.5 | | °C/W |

ELECTRICAL CHARACTERISTICS (Ta=25°C unless specified otherwise)

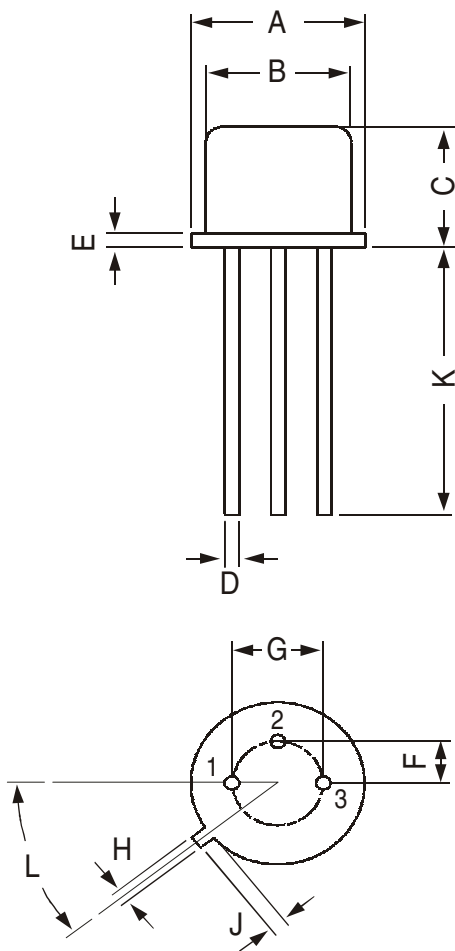
| DESCRIPTION | SYMBOL | BFY50 | BFY51 | BFY52 | UNITS |
|---------------------------|--------------------------------|-------|-------|-------|---------|
| Collector Emitter Voltage | V_{CEO} $I_C=10mA, I_B=0$ | >35 | >30 | >20 | V |
| Collector Base Voltage | V_{CBO} $I_C=10\mu A, I_E=0$ | >80 | >60 | >40 | V |
| Emitter Base Voltage | V_{EBO} $I_C=10\mu A, I_C=0$ | >6.0 | >6.0 | >6.0 | V |
| Collector Cut off Current | I_{CBO} $V_{CB}=60V, I_E=0$ | <50 | | | nA |
| | $V_{CB}=40V, I_E=0$ | | <50 | | nA |
| | $V_{CB}=30V, I_E=0$ | | | <50 | nA |
| | $T_j=100^\circ C$ | | | | |
| | $V_{CB}=60V, I_E=0$ | <2.5 | | | μA |
| | $V_{CB}=40V, I_E=0$ | | <2.5 | | μA |
| | $V_{CB}=30V, I_E=0$ | | | <2.5 | μA |


TO-39
Metal Can Package

| DESCRIPTION | SYMBOL | | BFY50 | BFY51 | BFY52 | UNITS |
|--|-----------------|--|-------|-------|-------|---------|
| Emitter Cut off Current | I_{EBO} | $V_{EB}=5V, I_C=0$ | <50 | <50 | <50 | μA |
| | | $T_j=100^{\circ}C$ $V_{EB}=5V, I_C=0$ | <2.8 | <2.8 | <2.8 | μA |
| DC Current Gain | h_{FE} | $I_C=10mA, V_{CE}=6V$ | >20 | >30 | >30 | |
| | | $I_C=150mA, V_{CE}=6V$ | >30 | >40 | >60 | |
| | | $I_C=1A, V_{CE}=6V$ | >15 | >15 | >15 | |
| Collector Emitter Saturation Voltage | $V_{CE(Sat)}^*$ | $I_C=150mA, I_B=15mA$ | <0.2 | <0.35 | <0.35 | V |
| | | $I_C=1A, I_B=100mA$ | <0.1 | <1.6 | <1.6 | V |
| Base Emitter Saturation Voltage | $V_{BE(Sat)}^*$ | $I_C=1A, I_B=100mA$ | <2.0 | <2.0 | <2.0 | V |
| <u>DYNAMIC CHARACTERISTICS</u> | | | | | | |
| Small Signal Current Gain | $ h_{fe} $ | $I_C=1mA, V_{CE}=6V,$ $f=1kHz$ | >10 | >30 | >30 | |
| Output Capacitance | C_{ob} | $V_{CB}=12V, f=500kHz$ | <12 | <12 | <12 | pF |
| Transistors Frequency | f_T | $I_C=50mA, V_{CE}=6V$ $f=20MHz$ | >60 | >50 | >50 | MHz |
| *Pulse Test: Pulse Width= 300μs, Duty Cycle =1% | | | | | | |

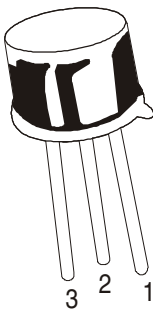
TO-39
Metal Can Package

TO-39 Metal Can Package



All dimensions are in mm

| DIM | MIN | MAX |
|-----|--------|--------|
| A | 8.50 | 9.39 |
| B | 7.74 | 8.50 |
| C | 6.09 | 6.60 |
| D | 0.40 | 0.53 |
| E | — | 0.88 |
| F | 2.41 | 2.66 |
| G | 4.82 | 5.33 |
| H | 0.71 | 0.86 |
| J | 0.73 | 1.02 |
| K | 12.70 | — |
| L | 42 DEG | 48 DEG |



PIN CONFIGURATION
1. EMITTER
2. BASE
3. COLLECTOR

Packing Detail

| PACKAGE | STANDARD PACK | | INNER CARTON BOX | | OUTER CARTON BOX | | |
|---------|-----------------|----------------|------------------|-----|-------------------|-----|--------|
| | Details | Net Weight/Qty | Size | Qty | Size | Qty | Gr Wt |
| TO-39 | 500 pcs/polybag | 540 gm/500 pcs | 3" x 7.5" x 7.5" | 20K | 17" x 15" x 13.5" | 32K | 40 kgs |

Disclaimer

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