

Features

- High DC Current Gain : $h_{FE}=1000$ @ $V_{CE}=4.0V$, $I_C=1.0A$ (Min.)
- Low Collector-Emitter Saturation Voltage
- Complementary to TIP110/111/112
- Lead Free Finish/RoHS Compliant (Note1) ("P" Suffix designates RoHS Compliant. See ordering information)
- Epoxy meets UL 94 V-0 flammability rating
- Moisture Sensitivity Level 1

Measure Sensitivity Maximum Ratings

- Mounting Torque: 5 in-lbs Maximum

| Symbol | Rating | Rating | Unit |
|-----------|--|-------------|------------|
| V_{CEO} | Collector-Emitter Voltage | | |
| | TIP115 | 60 | V |
| | TIP116 | 80 | |
| V_{CBO} | Collector-Base Voltage | | |
| | TIP115 | 60 | V |
| | TIP116 | 80 | |
| V_{EBO} | TIP117 | 100 | |
| | Emitter-Base Voltage | 5.0 | V |
| I_C | Collector Current (DC) | 2.0 | A |
| I_{CP} | Collector Current (Pulse) | 4.0 | A |
| | Base Current (DC) | 50 | mA |
| P_C | Collector Dissipation @ $T_A=25^\circ C$ | 2.0 | W |
| | Collector Dissipation @ $T_C=25^\circ C$ | 50 | W |
| T_J | Junction Temperature | -55 to +150 | $^\circ C$ |
| T_{STG} | Storage Temperature | -55 to +150 | $^\circ C$ |

Electrical Characteristics @ 25°C Unless Otherwise Specified

| Electrical Characteristics @ 25°C unless otherwise Specified | | | | |
|--|---|--------|-----|-----------------------|
| Symbol | Parameter | Min | Max | Units |
| OFF CHARACTERISTICS | | | | |
| $V_{CEO(SUS)}$ | Collector-Emitter Sustaining Voltage ($I_C = 30\text{mA}_\text{dc}$, $I_B = 0$) | TIP115 | 60 | --- |
| | | TIP116 | 80 | --- |
| | | TIP117 | 100 | --- |
| I_{CEO} | Collector Cut-off Current ($V_{CE} = 30\text{V}_\text{dc}$, $I_B = 0$) | TIP115 | --- | 2.0 |
| | ($V_{CE} = 40\text{V}_\text{dc}$, $I_B = 0$) | TIP116 | --- | 2.0 |
| | ($V_{CE} = 50\text{V}_\text{dc}$, $I_B = 0$) | TIP117 | --- | 2.0 |
| I_{CBO} | Collector Cut-off Current ($V_{CB} = 60\text{V}_\text{dc}$, $I_E = 0$) | TIP115 | --- | 1.0 |
| | ($V_{CB} = 80\text{V}_\text{dc}$, $I_E = 0$) | TIP116 | --- | 1.0 |
| | ($V_{CB} = 100\text{V}_\text{dc}$, $I_E = 0$) | TIP117 | --- | 1.0 |
| I_{EBO} | Emitter Cut-off Current ($V_{RE} = 5.0\text{V}_\text{dc}$, $I_B = 0$) | --- | 2.0 | mA_dc |

ON CHARACTERISTICS

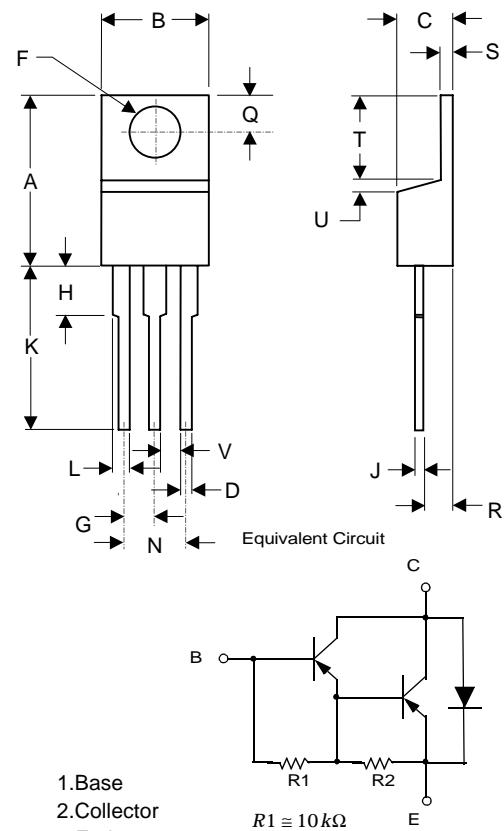
| UNCHARACTERISTICS | | | | |
|----------------------|---|-------------|-----|------|
| $h_{FE(1)}$ | DC Current Gain ($I_c=1.0\text{Adc}$, $V_{CE}=4.0\text{Vdc}$) ($b=2.0\text{Adc}$, $V_{CE}=4.0\text{Vdc}$) | 1000 500 | --- | ---- |
| $V_{CE(\text{sat})}$ | Collector-Emitter Saturation Voltage ($b=2.0\text{Adc}$, $I_B=8.0\text{mAdc}$) | --- | 2.5 | Vdc |
| $V_{BE(\text{ON})}$ | Base-Emitter On Voltage ($I_c=2.0\text{Adc}$, $V_{CE}=4.0\text{Adc}$) | --- | 2.8 | Vdc |
| C_{ob} | Output Capacitance ($V_{CE}=10\text{V}$, $I_E=0$, $f=0.1\text{MHz}$) | --- | 200 | pF |

Notes: 1. High Temperature Solder Exemption Applied, see EU Directive Annex 7.

TIP115
TIP116
TIP117

PNP Epitaxial Silicon Darlington Transistors

TO-220



| | | DIMENSIONS | | | | NOTE |
|-----|--------|------------|-------|-------|--|------|
| DIM | INCHES | | MM | | | NOTE |
| | MIN | MAX | MIN | MAX | | |
| A | .560 | .625 | 14.22 | 15.88 | | |
| B | .380 | .420 | 9.65 | 10.67 | | |
| C | .140 | .190 | 3.56 | 4.82 | | |
| D | .020 | .045 | 0.51 | 1.14 | | |
| F | .139 | .161 | 3.53 | 4.09 | | Ø |
| G | .190 | .110 | 2.29 | 2.79 | | |
| H | --- | .250 | --- | 6.35 | | |
| J | .012 | .025 | 0.30 | 0.64 | | |
| K | .500 | .580 | 12.70 | 14.73 | | |
| L | .045 | .060 | 1.14 | 1.52 | | |
| N | .190 | .210 | 4.83 | 5.33 | | |
| Q | .100 | .135 | 2.54 | 3.43 | | |
| R | .080 | .115 | 2.04 | 2.92 | | |
| S | .045 | .055 | 1.14 | 1.39 | | |
| T | .230 | .270 | 5.84 | 6.86 | | |
| U | ----- | .050 | ----- | 1.27 | | |
| V | .045 | ----- | 1.15 | ----- | | |

TM

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Ordering Information :

| Device | Packing |
|----------------|-----------------|
| Part Number-BP | Bulk; 1Kpcs/Box |

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