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Microsemi
Progress Powered by Technology

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# 2N3741

## APPLICATIONS:

- Drivers
- Switches
- Medium-Power Amplifiers

## FEATURES:

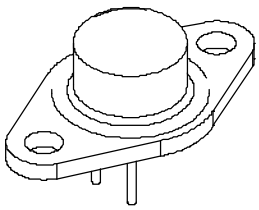
- Low Saturation Voltage: 0.6 $V_{CE(sat)}$ @ $I_C$ = 1.0 Amp
- High Gain Characteristics: hFE @ $I_C$ = 250 mA: 30-100
- Excellent Safe Area Limits
- Complementary to NPN 2N3767 (2N3741)

## Medium Power PNP Transistors

## DESCRIPTION:

These power transistors are produced by PPC's DOUBLE DIFFUSED PLANAR process. This technology produces high voltage devices with excellent switching speeds, frequency response, gain linearity, saturation voltages, high current gain, and safe operating areas. They are intended for use in Commercial, Industrial, and Military power switching, amplifier, and regulator applications.

Ultrasonically bonded leads and controlled die mount techniques are utilized to further increase the SOA capability and inherent reliability of these devices. The temperature range to 200°C permits reliable operation in high ambients, and the hermetically sealed package insures maximum reliability and long life.



TO-66

## ABSOLUTE MAXIMUM RATINGS:

| SYMBOL | CHARACTERISTIC | VALUE | UNITS |
|---|---|---|---|
| $V_{CEO}$* | Collector-Emitter Voltage | 80 | Vdc |
| $V_{EB}$* | Emitter-Base Voltage | 7.0 | Vdc |
| $V_{CB}$* | Collector-Base Voltage | 80 | Vdc |
| $I_C$* | Peak Collector Current | 10 | Adc |
| $I_C$* | Continuous Collector Current | 4.0 | Adc |
| $I_B$* | Base Current | 2.0 | Adc |
| $T_{STG}$* | Storage Temperature | -65 to 200 | °C |
| $T_J$* | Operating Junction Temperature | -65 to 200 | °C |
| $P_D$* | Total Device Dissipation<br>$T_C$ = 25°C | 25 | Watts |
| | Derate above 25°C | 0.143 | W/°C |
| θ JC | Thermal Impedance | 7 | °C/W |

* Indicates JEDEC registered data.

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## ELECTRICAL CHARACTERISTICS:
## (25°Case Temperature Unless Otherwise Noted)

| SYMBOL | CHARACTERISTIC | TEST CONDITIONS | VALUE | | Units |
|---|---|---|---|---|---|
| | | | Min. | Max. | |
| $V_{CEO(sus)}$* | Collector-Emitter Sustaining Voltage | $I_C$ = 100 mAdc, $I_B$ = 0 (Note 1) | 80 | ---- | Vdc |
| $I_{EB0}$* | Emitter Base Cutoff Current | $V_{EB}$ = 7.0 Vdc | ---- | 0.5 | mAdc |
| $I_{CEX}$* | Collector Cutoff Current | $V_{CE}$ = 80 Vdc, $V_{BE(off)}$ = 1.5 Vdc | ---- | 100 | µAdc |
| | | $V_{CE}$ = 60 Vdc, $V_{BE(off)}$ = 1.5 Vdc, $T_C$ = 150°C | ---- | 1.0 | mAdc |
| $I_{CEO}$* | Collector-Emitter Cutoff Current | $V_{CE}$ = 60 Vdc, $I_B$ = 0 | ---- | 1.0 | mAdc |
| $I_{CBO}$* | Collector Base Cutoff Current | $V_{CB}$ = 80 Vdc, $I_E$ = 0 | ---- | 100 | µAdc |
| $h_{FE}$* | DC Current Gain (Note 1) | $I_C$ = 100 mAdc, $V_{CE}$ = 1.0 Vdc | 40 | ---- | ---- |
| | | $I_C$ = 250 mAdc, $V_{CE}$ = 1.0 Vdc | 30 | 100 | ---- |
| | | $I_C$ = 500 mAdc, $V_{CE}$ = 1.0 Vdc | 20 | ---- | ---- |
| | | $I_C$ = 1.0 Adc, $V_{CE}$ = 1.0 Vdc | 10 | ---- | ---- |
| $V_{CE(sat)}$* | Collector-Emitter Saturation Voltage (Note 1) | $I_C$ = 1.0 Adc, $I_B$ = 125 mAdc | ---- | 0.6 | Vdc |
| $V_{BE}$* | Base-Emitter Voltage (Note 1) | $I_C$ = 250 mAdc, $V_{CE}$ = 1.0 Vdc | ---- | 1.0 | Vdc |
| $f_T$* | Current Gain Bandwidth Product | $I_C$ = 100 mAdc, $V_{CE}$ = 10 Vdc, f = 1.0 MHz | 3.0 | ---- | MHz |
| $h_{fe}$* | Small-Signal Current Gain | $I_C$ = 50 mAdc, $V_{CE}$ = 10 Vdc, f = 1.0 kHz | 25 | ---- | ---- |
| $C_{ob}$* | Common Base Output Capacitance | $V_{CB}$ = 10 Vdc, $I_C$ = 0, f = 100 kHz | ---- | 100 | pF |

**Note 1: Pulse Test: PW ≤ 300µs, Duty Cycle ≤ 2.0%**

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## PACKAGE MECHANICAL DATA: