



Micro Commercial Components

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TPT5609

NPN Epitaxial Silicon Transistor

Features

- Excellent linearity of Current Gain
- Low saturation voltage

Maximum Ratings

| Symbol | Rating | Rating | Unit |
|------------------|-----------------------------|-------------|------|
| V _{CEO} | Collector-Emitter Voltage | 20 | V |
| V _{CBO} | Collector-Base Voltage | 25 | V |
| V _{EBO} | Emitter-Base Voltage | 5.0 | V |
| I _C | Collector Current | 1.0 | A |
| P _C | Collector power dissipation | 0.75 | W |
| T _J | Junction Temperature | -55 to +150 | °C |
| T _{STG} | Storage Temperature | -55 to +150 | °C |

Electrical Characteristics @ 25°C Unless Otherwise Specified

| Symbol | Parameter | Min | Typ | Max | Units |
|--------|-----------|-----|-----|-----|-------|
|--------|-----------|-----|-----|-----|-------|

OFF CHARACTERISTICS

| | | | | | |
|-------------------|---|-----|-----|-----|------|
| BV _{CBO} | Collector-Base Breakdown Voltage (I _C =10 μAdc, I _E =0) | 25 | --- | --- | Vdc |
| BV _{CEO} | Collector-Emitter Breakdown Voltage (I _C =1mAdc, I _B =0) | 20 | --- | --- | Vdc |
| BV _{EBO} | Emitter-Base Breakdown Voltage (I _E =10uAdc, I _C =0) | 5.0 | --- | --- | Vdc |
| I _{CBO} | Collector Cutoff Current (V _{CB} =20Vdc, I _E =0) | --- | --- | 1 | uAdc |
| I _{EBO} | Emitter Cutoff Current (V _{EB} =5.0Vdc, I _C =0) | --- | --- | 1 | uAdc |

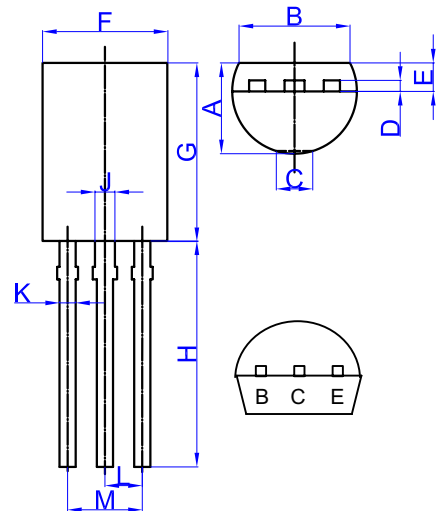
ON CHARACTERISTICS

| | | | | | |
|----------------------|---|-----|-----|-----|-----|
| h _{FE} | DC Current gain (I _C =500mAdc, V _{CE} =2.0Vdc) | 60 | --- | 240 | --- |
| V _{BE(on)} | Base-Emitter On Voltage (V _{CE} =2.0Vdc, I _C =500mAdc) | --- | --- | 1.0 | Vdc |
| V _{CE(sat)} | Collector-Emitter Saturation Voltage (I _C =800mAdc, I _B =80mAdc) | --- | --- | 0.5 | Vdc |
| f _T | Current Gain Bandwidth Product (V _{CE} =2.0Vdc, I _C =500mAdc) | --- | 190 | --- | MHz |
| C _{ob} | Output Capacitance (V _{CB} =10Vdc, I _E =0, f=1.0MHz) | --- | 22 | --- | pF |

CLASSIFICATION OF h_{FE}

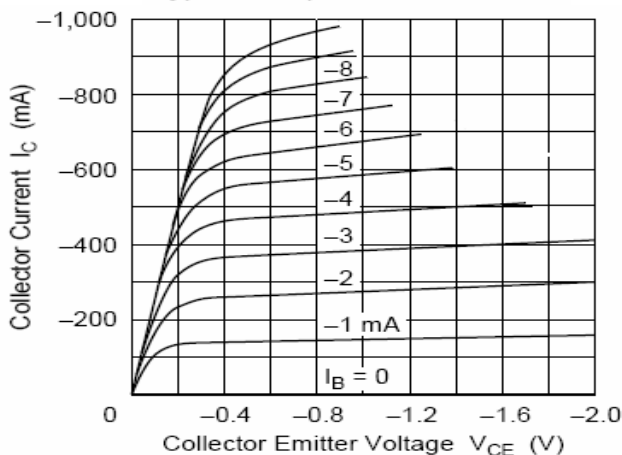
| Rank | A | B | C |
|-------|--------|--------|---------|
| Range | 60-120 | 85-170 | 120-240 |

TO-92L

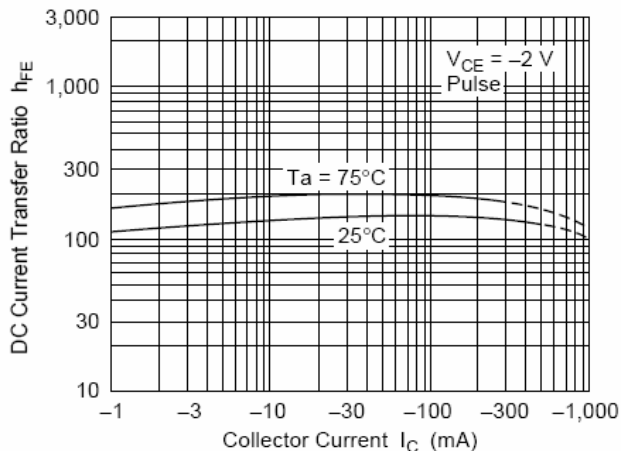


| DIM | INCHES | | MM | | NOTE |
|-----|--------|-------|-------|-------|------|
| | MIN | MAX | MIN | MAX | |
| A | 3.700 | 4.100 | .146 | .161 | |
| B | 4.000 | --- | .157 | --- | |
| C | 0.000 | 0.300 | 0.000 | 0.012 | |
| D | 0.350 | 0.450 | .014 | .018 | |
| E | 1.280 | 1.580 | .050 | .062 | |
| F | 4.700 | 5.100 | .185 | .201 | |
| G | 7.800 | 8.200 | .307 | .323 | |
| H | 13.80 | 14.20 | .543 | .559 | |
| J | .600 | .800 | .024 | .031 | |
| K | 0.350 | .550 | .014 | .022 | |
| L | 1.270 | | .050 | | |
| M | 2.440 | 2.640 | .096 | .104 | |

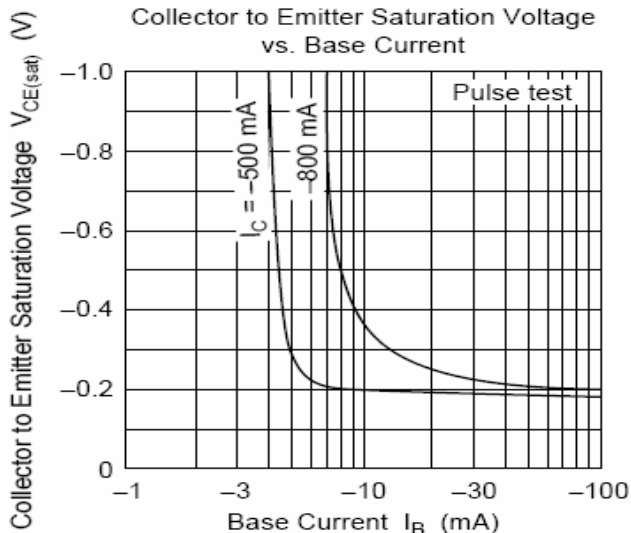
Typical Output Characteristics



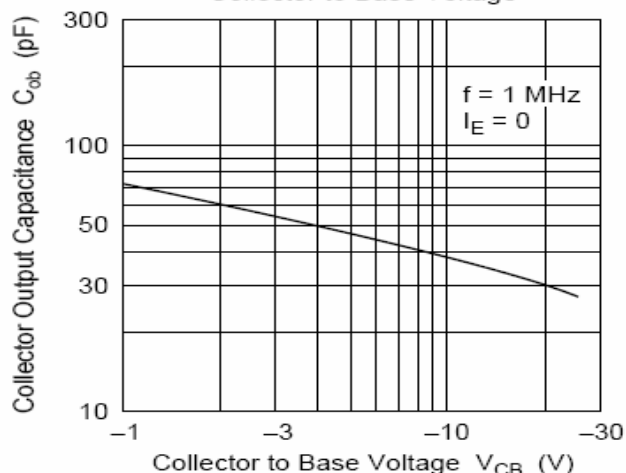
DC Current Transfer Ratio vs. Collector Current



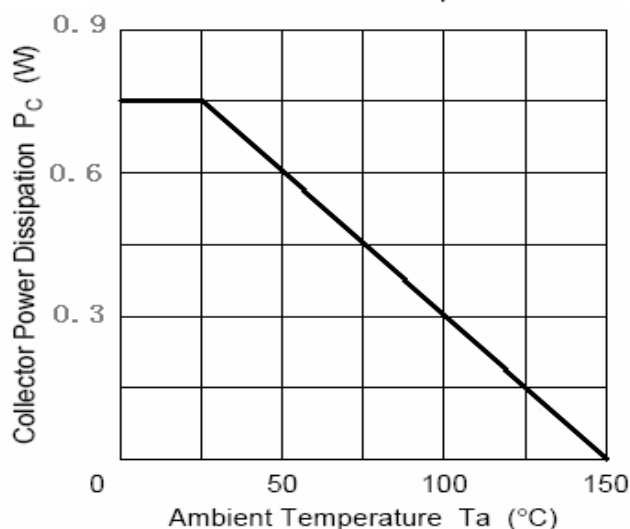
Collector to Emitter Saturation Voltage vs. Base Current



Collector Output Capacitance vs. Collector to Base Voltage



Maximum Collector Dissipation Curve





TM

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