

New Jersey Semi-Conductor Products, Inc.

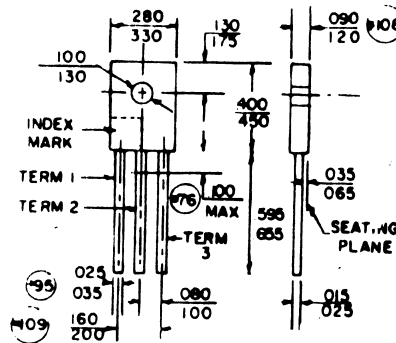
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2N6034 2N6035 2N6036 PNP
 2N6037 2N6038 2N6039 NPN

COMPLEMENTARY SILICON DARLINGTON
 TRANSISTORS

JEDEC TO-126 CASE



DESCRIPTION

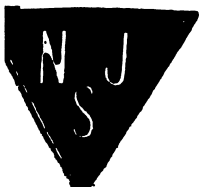
2N6034, 2N6037 series types are complementary silicon darlington power transistors manufactured by the epitaxial base process and designed for general purpose amplifier and switching applications.

MAXIMUM RATINGS ($T_C=25^\circ\text{C}$ unless otherwise noted)

| | SYMBOL | 2N6034 2N6037 | 2N6035 2N6038 | 2N6036 2N6039 | UNIT |
|--|----------------|------------------|------------------|------------------|--------------------|
| Collector-Base Voltage | V_{CB0} | 40 | 60 | 80 | V |
| Collector-Emitter Voltage | V_{CE0} | 40 | 60 | 80 | V |
| Emitter-Base Voltage | V_{EB0} | | 5.0 | | V |
| Collector Current | I_C | | 4.0 | | A |
| Collector Current-PEAK | I_{CM} | | 8.0 | | A |
| Base Current | I_B | | 100 | | mA |
| Power Dissipation | P_D | | 40 | | W |
| Power Dissipation ($T_A=25^\circ\text{C}$) | P_D | | 1.5 | | W |
| Operating and Storage | | | | | |
| Junction Temperature | T_J, T_{STG} | | -65 to +150 | | $^\circ\text{C}$ |
| Thermal Resistance | θ_{JC} | | 3.12 | | $^\circ\text{C/W}$ |
| Thermal Resistance | θ_{JA} | | 83.3 | | $^\circ\text{C/W}$ |

ELECTRICAL CHARACTERISTICS ($T_C=25^\circ\text{C}$ unless otherwise noted)

| SYMBOL | TEST CONDITIONS | 2N6034 | | 2N6035 | | 2N6036 | | UNIT |
|----------------------|---|--------|--------|--------|--------|--------|---------------|------|
| | | 2N6037 | 2N6038 | 2N6038 | 2N6039 | 2N6039 | | |
| I_{CBO} | $V_{CB}=\text{Rated } V_{CB0}$ | | 0.5 | 0.5 | 0.5 | 0.5 | mA | |
| I_{CEV} | $V_{CE}=\text{Rated } V_{CE0}, V_{BE}(\text{OFF})=1.5\text{V}$ | | 100 | 100 | 100 | 100 | μA | |
| I_{CEV} | $V_{CE}=\text{Rated } V_{CE0}, V_{BE}(\text{OFF})=1.5\text{V}, T_C=125^\circ\text{C}$ | | 500 | 500 | 500 | 500 | μA | |
| I_{CE0} | $V_{CE}=\text{Rated } V_{CE0}$ | | 100 | 100 | 100 | 100 | μA | |
| I_{EBO} | $V_{BE}=5.0\text{V}$ | | 2.0 | 2.0 | 2.0 | 2.0 | mA | |
| BV_{CE0} | $I_C=100\text{mA}$ | 40 | 60 | 80 | | | V | |
| $V_{CE}(\text{SAT})$ | $I_C=2.0\text{A}, I_B=8.0\text{mA}$ | | 2.0 | 2.0 | 2.0 | 2.0 | V | |
| $V_{CE}(\text{SAT})$ | $I_C=4.0\text{A}, I_B=40\text{mA}$ | | 3.0 | 3.0 | 3.0 | 3.0 | V | |
| $V_{BE}(\text{SAT})$ | $I_C=4.0\text{A}, I_B=40\text{mA}$ | | 4.0 | 4.0 | 4.0 | 4.0 | V | |
| $V_{BE}(\text{ON})$ | $V_{CE}=3.0\text{V}, I_C=2.0\text{A}$ | | 2.8 | 2.8 | 2.8 | 2.8 | V | |
| h_{FE} | $V_{CE}=3.0\text{V}, I_C=0.5\text{A}$ | 500 | - | 500 | - | 500 | - | |
| h_{FE} | $V_{CE}=3.0\text{V}, I_C=2.0\text{A}$ | 750 | 15K | 750 | 15K | 750 | 15K | |
| h_{FE} | $V_{CE}=3.0\text{V}, I_C=4.0\text{A}$ | 100 | - | 100 | - | 100 | - | |
| f_T | $V_{CE}=10\text{V}, I_C=0.75\text{A}, f=1.0\text{MHz}$ | 25 | | 25 | | 25 | MHz | |
| C_{ob} | $V_{CB}=10\text{V}, I_E=0, f=0.1\text{MHz}$ (PNP Types) | | 200 | 200 | 200 | 200 | pF | |
| C_{ob} | $V_{CB}=10\text{V}, I_E=0, f=0.1\text{MHz}$ (NPN Types) | | 100 | 100 | 100 | 100 | pF | |



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