

NPN/PNP POWER DARLINGTON TRANSISTOR ARRAY



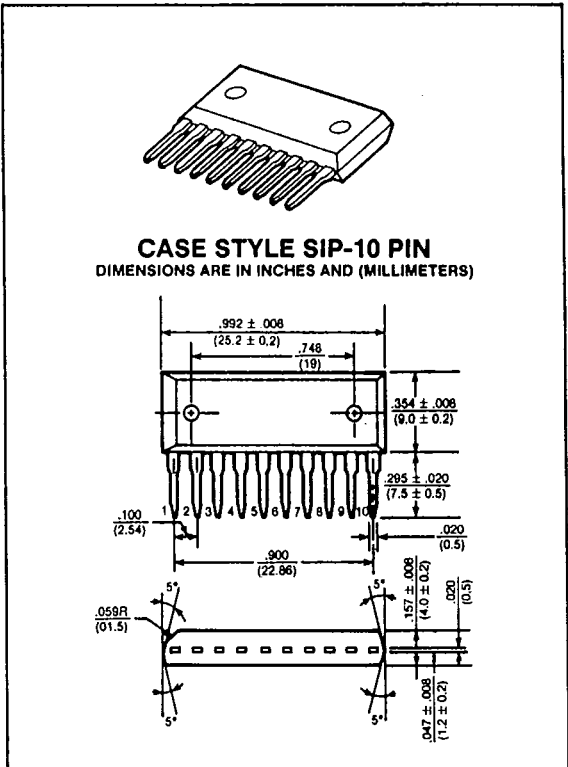
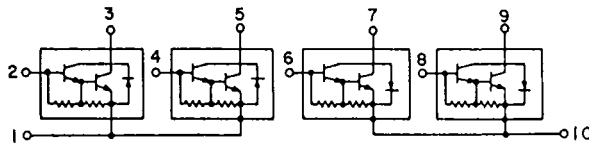
D76FY4D
80 VOLTS
4 AMP, 4.0 WATTS

Designed for high power switching applications, hammer drive, pulse motor drive and inductive load drive applications.

Features:

- High reliability small-sized available (4 in 1)
- Epoxy single-inline package (10 pin)
- High collector power dissipation: $P_D = 4.0W @ T_A = 25^\circ C$ (Four device action)
- High collector current: $I_C = \pm 4A$ (Max.)
- High DC current gain: $h_{FE} = 2000$ (Min.) @ $V_{CE} = \pm 2V, I_C = \pm 1A$

ARRAY CONFIGURATION



maximum ratings ($T_A = 25^\circ C$) (unless otherwise specified)

| RATING | SYMBOL | D76FY4D | UNITS |
|---|----------------|-------------|------------|
| Collector-Emitter Voltage | V_{CEO} | 80 | Volts |
| Collector-Base Voltage | V_{CBO} | 100 | Volts |
| Emitter Base Voltage | V_{EBO} | 5 | Volts |
| Collector Current — Continuous | I_C | 4 | A |
| Peak | I_{CM} | 6 | A |
| Base Current — Continuous | I_B | 0.4 | A |
| Collector Power Dissipation (One Device Action, $T_A = 25^\circ C$) | P_D | 2.0 | Watts |
| Collector Power Dissipation (Four Device Action, $T_A = 25^\circ C$) | P_D | 4.0 | Watts |
| Operating and Storage Junction Temperature Range | T_J, T_{STG} | -55 to +150 | $^\circ C$ |

thermal characteristics

| | | | |
|---|------------------------|------|--------------|
| Thermal Resistance, Junction to Ambient (Four Device Action) | $\Sigma R_{\theta JA}$ | 31.3 | $^\circ C/W$ |
| Maximum Lead Temperature for Soldering Purpose: $\frac{1}{8}$ " from Case for 5 Seconds | T_L | 260 | $^\circ C$ |

electrical characteristics ($T_A = 25^\circ C$) (unless otherwise specified)

| CHARACTERISTIC | SYMBOL | MIN | TYP | MAX | UNIT |
|--|---------------|-----|-----|-----|---------|
| Collector-Emitter Breakdown Voltage ($I_C = 10mA, I_B = 0$) | $V_{BR(CEO)}$ | 80 | — | — | Volts |
| Collector-Base Breakdown Voltage ($I_C = 1mA, I_E = 0$) | $V_{BR(CBO)}$ | 100 | — | — | Volts |
| Collector Cutoff Current ($V_{CB} = 100V, I_E = 0$) | I_{CBO} | — | — | 20 | μA |
| Collector Cutoff Current ($V_{CE} = 80V, I_B = 0$) | I_{CEO} | — | — | 20 | μA |
| Emitter Cutoff Current ($V_{EB} = 5V, I_C = 0$) | I_{EBO} | — | — | 2.5 | mA |

on characteristics

| | | | | | |
|---|---------------|------|---|-----|-------|
| DC Current Gain ($I_C = 1A, V_{CE} = 2V$) ($I_C = 3A, V_{CE} = 2V$) | $h_{FE(1)}$ | 2000 | — | — | — |
| | $h_{FE(2)}$ | 1000 | — | — | — |
| Collector-Emitter Saturation Voltage ($I_C = 3A, I_B = 6mA$) | $V_{CE(sat)}$ | — | — | 1.5 | Volts |
| Base-Emitter Saturation Voltage ($I_C = 3A, I_B = 6mA$) | $V_{BE(sat)}$ | — | — | 2.0 | Volts |

switching characteristics

| | | | | | | |
|--------------|---|-----------|---|-----|---|---------|
| Turn-on Time | $V_{CC} = 30V$ $I_{B1} = -I_{B2} = 6mA$ Duty Cycle = 1% | t_{on} | — | 0.2 | — | μs |
| Storage Time | | t_{stg} | — | 1.5 | — | |
| Fall Time | | t_f | — | 0.6 | — | |

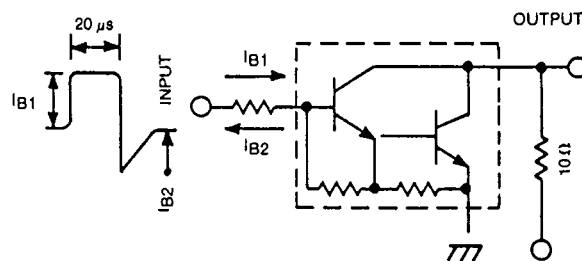


FIG. 1 SWITCHING TIME TEST CIRCUIT