

# MJD112(NPN)

TO-251/TO-525-2L Transistor



1. BASE
2. COLLECTOR
3. EMITTER

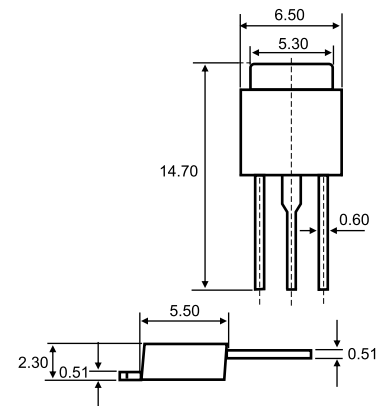
## Features

- ◇ Complementary darlington power transistors  
dpak for surface mount applications

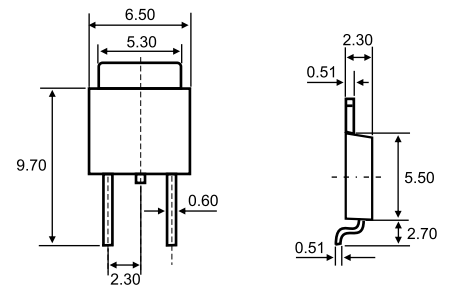
## MAXIMUM RATINGS ( $T_A=25^\circ\text{C}$ unless otherwise noted)

| Symbol          | Parameter                               | Value   | Units                     |
|-----------------|---|---------|---------------------------|
| $V_{CBO}$       | Collector-Base Voltage                  | 100     | V                         |
| $V_{CEO}$       | Collector-Emitter Voltage               | 100     | V                         |
| $V_{EBO}$       | Emitter-Base Voltage                    | 5       | V                         |
| $I_C$           | Collector Current -Continuous           | 2       | A                         |
| $P_C$           | Collector Power Dissipation             | 1       | W                         |
| $R_{\theta JC}$ | Thermal resistance, junction to case    | 6.25    | $^\circ\text{C}/\text{W}$ |
| $R_{\theta JA}$ | Thermal resistance, junction to Ambient | 71.4    | $^\circ\text{C}/\text{W}$ |
| $T_J$           | Junction Temperature                    | 150     | $^\circ\text{C}$          |
| $T_{stg}$       | Storage Temperature                     | -55-150 | $^\circ\text{C}$          |

### TO-251



### TO-525-2L



Dimensions in inches and (millimeters)

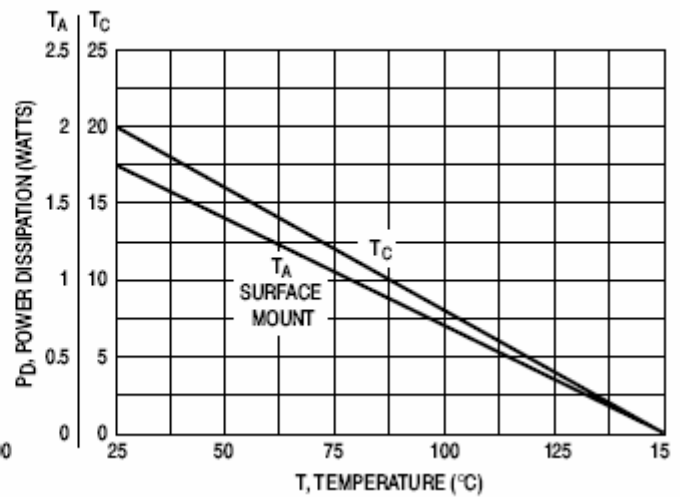
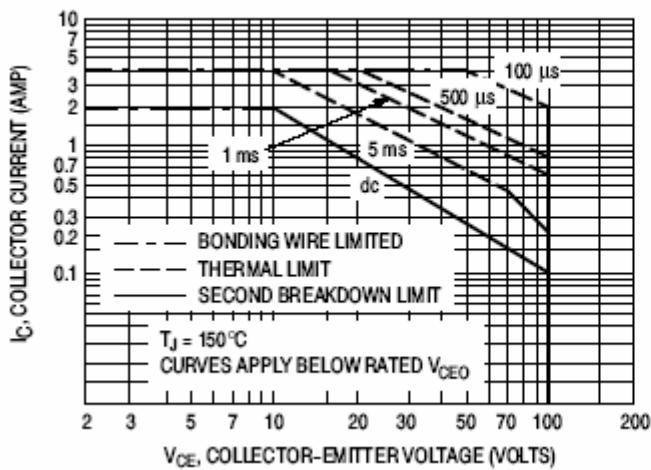
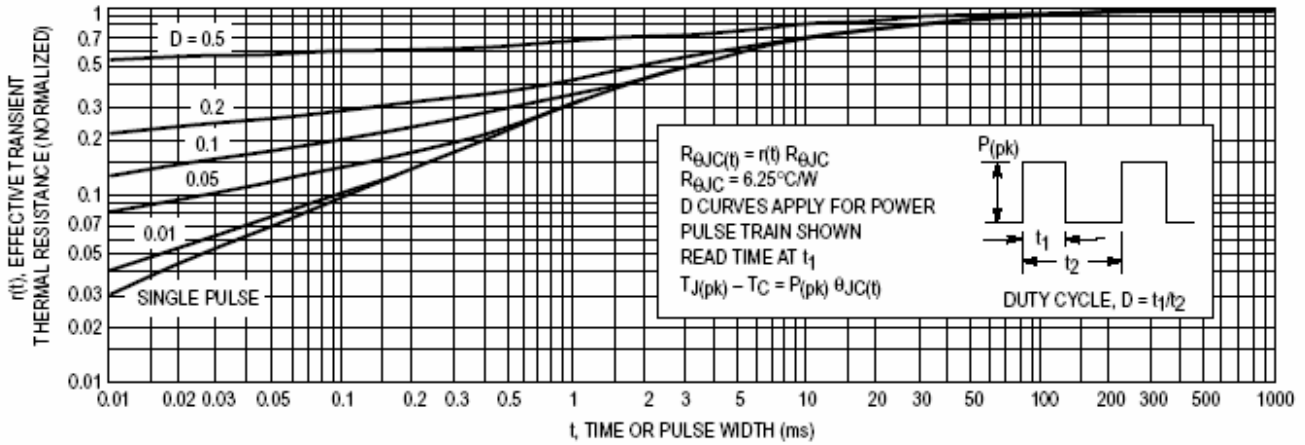
## ELECTRICAL CHARACTERISTICS ( $T_{amb}=25^\circ\text{C}$ unless otherwise specified)

| Parameter                            | Symbol         | Test conditions                                      | MIN  | TYP | MAX   | UNIT          |
|--------------------------------------|----------------|--|------|-----|-------|---------------|
| Collector-base breakdown voltage     | $V_{(BR)CBO}$  | $I_C=1\text{mA}, I_E=0$                              | 100  |     |       | V             |
| Collector-emitter breakdown voltage  | $V_{(BR)CEO}$  | $I_C=30\text{mA}, I_B=0$                             | 100  |     |       | V             |
| Emitter-base breakdown voltage       | $V_{(BR)EBO}$  | $I_E=5\text{mA}, I_C=0$                              | 5    |     |       | V             |
| Collector cut-off current            | $I_{CBO}$      | $V_{CB}=100\text{V}, I_E=0$                          |      |     | 20    | $\mu\text{A}$ |
| Collector-emitter cut-off current    | $I_{CEO}$      | $V_{CE}=50\text{V}, I_E=0$                           |      |     | 20    | $\mu\text{A}$ |
| Emitter cut-off current              | $I_{EBO}$      | $V_{EB}=5\text{V}, I_C=0$                            |      |     | 2     | mA            |
| DC current gain                      | $h_{FE(1)}$    | $V_{CE}=3\text{V}, I_C=500\text{mA}$                 | 500  |     |       |               |
|                                      | $h_{FE(2)}$    | $V_{CE}=3\text{V}, I_C=2\text{A}$                    | 1000 |     | 12000 |               |
|                                      | $h_{FE(3)}$    | $V_{CE}=3\text{V}, I_C=4\text{A}$                    | 200  |     |       |               |
| Collector-emitter saturation voltage | $V_{CE(sat)1}$ | $I_C=2\text{A}, I_B=8\text{mA}$                      |      |     | 2     | V             |
|                                      | $V_{CE(sat)2}$ | $I_C=4\text{A}, I_B=40\text{mA}$                     |      |     | 3     | V             |
| Base-emitter voltage                 | $V_{BE}$       | $V_{CE}=3\text{V}, I_C=2\text{A}$                    |      |     | 2.8   | V             |
| Transition frequency                 | $f_T$          | $V_{CE}=10\text{V}, I_C=0.75\text{A}, f=1\text{MHz}$ | 25   |     |       | MHz           |
| Collector output capacitance         | $C_{ob}$       | $V_{CB}=10\text{V}, I_E=0, f=0.1\text{MHz}$          |      |     | 100   | pF            |

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## Typical Characteristics



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