

isc Silicon NPN Darlington Power Transistor

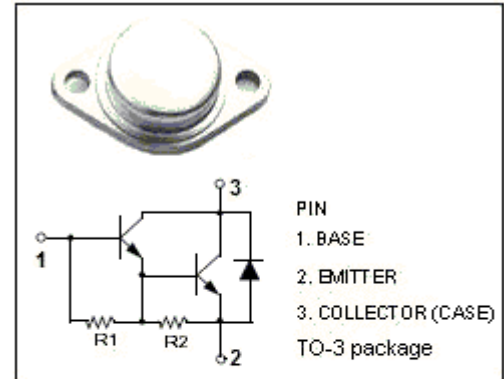
PMD1603K

DESCRIPTION

- High DC current gain
- Collector-Emitter Breakdown Voltage-
 $V_{(BR)CEO} = 100V(\text{Min})$
- Complement to type PMD1703K

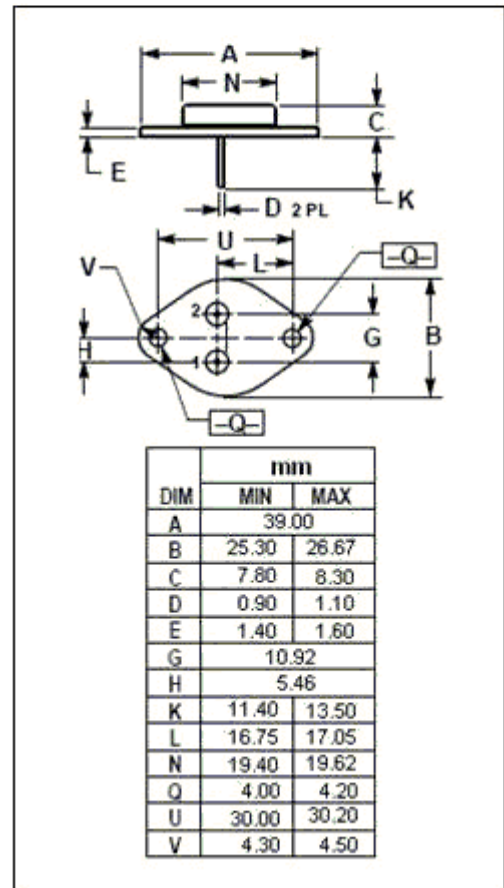
APPLICATIONS

- Designed for general purpose amplifier and low frequency switching applications



ABSOLUTE MAXIMUM RATINGS($T_C=25^\circ\text{C}$)

| SYMBOL | PARAMETER | VALUE | UNIT |
|-----------|---|---------|------------------|
| V_{CBO} | Collector-Base Voltage | 100 | V |
| V_{CEO} | Collector-Emitter Voltage | 100 | V |
| V_{EBO} | Emitter-Base Voltage | 5.0 | V |
| I_C | Collector Current -Continuous | 20 | A |
| I_{CP} | Collector Current-Peak | 40 | A |
| I_B | Base Current | 0.5 | A |
| P_C | Collector Power Dissipation@ $T_C=25^\circ\text{C}$ | 180 | W |
| T_j | Junction Temperature | 150 | $^\circ\text{C}$ |
| T_{stg} | Storage Temperature | -65~200 | $^\circ\text{C}$ |



THERMAL CHARACTERISTICS

| SYMBOL | PARAMETER | MAX | UNIT |
|---------------|-------------------------------------|------|--------------------|
| $R_{th\ j-c}$ | ThermalResistance, Junction to Case | 0.97 | $^\circ\text{C/W}$ |

isc Silicon NPN Darlington Power Transistor**PMD1603K****ELECTRICAL CHARACTERISTICS** $T_C=25^{\circ}\text{C}$ unless otherwise specified

| SYMBOL | PARAMETER | CONDITIONS | MIN | MAX | UNIT |
|---------------|--------------------------------------|--|-----|-------|------|
| $V_{(BR)CEO}$ | Collector-Emitter Breakdown Voltage | $I_C=100\text{mA}; I_B=0$ | 100 | | V |
| $V_{(BR)CER}$ | Collector-Emitter Breakdown Voltage | $I_C=100\text{mA}; R_{BE}=2.2\text{k}\Omega$ | 100 | | V |
| $V_{CE(sat)}$ | Collector-Emitter Saturation Voltage | $I_C=10\text{A}; I_B=40\text{mA}$ | | 2.0 | V |
| $V_{BE(sat)}$ | Base-Emitter Saturation Voltage | $I_C=10\text{A}; I_B=40\text{mA}$ | | 2.8 | V |
| $V_{BE(on)}$ | Base-Emitter On Voltage | $I_C=10\text{A}; V_{CE}=3\text{V}$ | | 2.8 | V |
| I_{CER} | Collector Cutoff current | $V_{CE}=100\text{V}; R_{BE}=2.2\text{K}\Omega$ | | 7.0 | mA |
| I_{EBO} | Emitter Cut-off current | $V_{EB}=5\text{V}; I_C=0$ | | 3.0 | mA |
| h_{FE} | DC Current Gain | $I_C=10\text{A}; V_{CE}=3\text{V}$ | 750 | 20000 | |
| f_T | Current-Gain—Bandwidth Product | $I_C=7\text{A}; V_{CE}=3\text{V}; f=1\text{kHz}$ | 4 | | MHz |
| C_{OB} | Output Capacitance | $I_E=0; V_{CB}=10\text{V}; f_{test}=1.0\text{MHz}$ | | 400 | pF |