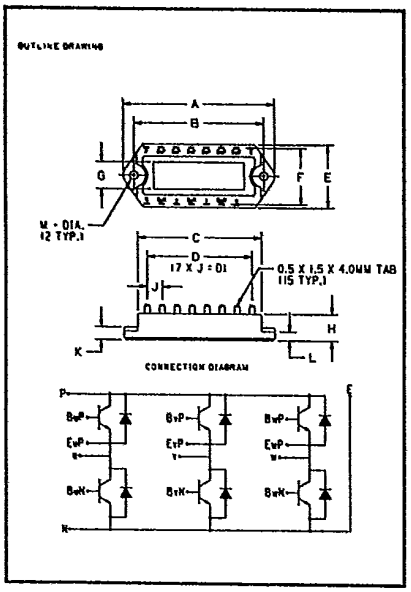
POWEREX

# KEE225B0

Powerex, Inc., Hillis Street, Youngwood, Pennsylvania 15697 (412) 925-7272

## Six- Darlington Transistor Module

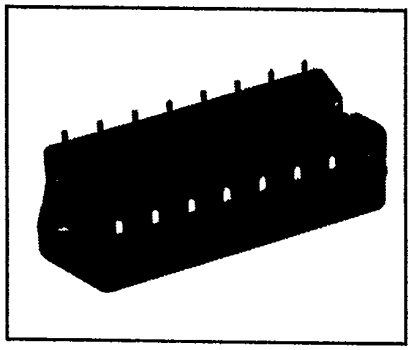
### 8 Amperes/300 Volts




**300 Volt KEE225B0 Outline Drawing**

| Dimension | Inches | Millimeters |
|---|---|---|
| A | 3.031 | 77 |
| B | 2.598 ± .006 | 66 ± 0.15 |
| C | 2.480 | 63 |
| D | 2.100 | 53.34 |
| E | 1.287 | 32.7 |
| F | 1.150 | 29.2 |
| G | .551 | 14 |
| H | .531 | 13.5 |
| J | .300 | 7.62 |
| K | .256 | 6.5 |
| L | .177 | 4.5 |
| M | .169 ± .004 Dia. | 4.3 ± 0.1 Dia. |

Note: Each Transistor symbol represents a Darlington Transistor with base emitter resistors on each stage and a base emitter speed up diode on the input stage.



**KEE225B0**
**Six-Darlington Module**
**Transistor Module**
8 Amperes/300 Volts

**Description**
Powerex Six-Darlington Transistor Modules are designed for use in switching applications. The modules are isolated, consisting of six Darlington Transistors with each transistor having a reverse parallel connected high-speed diode and a base emitter speed up diode. The transistors are connected in a three phase bridge configuration.

**Features:**
- ☐ Isolated Mounting
- ☐ Planar Chips
- ☐ Fast Recovery Feed-Back Diode
- ☐ High Gain ($h_{FE}$)
- ☐ Base Emitter Speed Up Diode
- ☐ Base Emitter Resistors

**Applications:**
- ☐ Inverters
- ☐ Switching Power Supplies
- ☐ AC Motor Control

**Ordering Information**
Example: Select the complete eight digit module part number you desire from the table - i.e. KEE225B0 is a 250 $V_{CEO(SUS)}$ (300 $V_{CEV}$), 8 Ampere Six-Darlington Module.

| Type | $V_{CEO(SUS)}$ Volts (×10) | Current Rating Amperes (8) |
|---|---|---|
| KEE2 | 25 | B0 |

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***KEE225B0***
***Six-Darlington Transistor Module***
*8 Amperes/300 Volts*

## Maximum Ratings $T_J$ = 25°C unless otherwise specified

| | Symbol | KEE225B0 | Units |
|---|---|---|---|
| Junction Temperature | $T_J$ | −40 to 150 | °C |
| Storage Temperature | $T_{STG}$ | −40 to 125 | °C |
| Collector-Emitter Sustaining Voltage | $V_{CEO(SUS)}$ | 250 | Volts |
| Collector-Emitter Sustaining Voltage $V_{BE}$ = −2V | $V_{CEV(SUS)}$ | 300 | Volts |
| Collector-Base Voltage | $V_{CBO}$ | 300 | Volts |
| Emitter-Base Voltage | $V_{EBO}$ | 7 | Volts |
| Collector-Emitter Voltage $V_{BE}$ = −2V | $V_{CEV}$ | 300 | Volts |
| Continuous Collector Current | $I_C$ | 8 | Amperes |
| Diode Forward Current | $I_{FM}$ | 8 | Amperes |
| Continuous Base Current | $I_B$ | 2 | Amperes |
| Diode Surge Current | $I_{FSM}$ | 80 | Amperes |
| Power Dissipation Each Transistor | $P_T$ | 62.5 | Watts |
| Max. Mounting Torque M4 Mounting Screws | — | 12 | in.-lb. |
| Module Weight | — | 50 | Grams |
| V isolation | $V_{RMS}$ | 2000 | Volts |

## Electrical and Mechanical Characteristics $T_J$ = 25°C unless otherwise specified

| Characteristics | | Symbol | Test Conditions | KEE225B0 Min. | Typ. | Max. | Units |
|---|---|---|---|---|---|---|---|
| Collector Cutoff Current | | $I_{CEV}$ | $V_{CE}$ = 300V, $V_{BE}$ = −2V | — | — | 1 | mA |
| Emitter Cutoff Current | | $I_{EBO}$ | $V_{EB}$ = 7V | — | — | 200 | mA |
| DC Current Gain | | $h_{FE}$ | $I_C$ = 7.5A, $V_{CE}$ = 2V | 250 | — | — | — |
| Diode Forward Voltage | | $V_{FM}$ | $I_{FM}$ = 7.5A | — | — | 1.4 | V |
| Collector-Emitter Saturation Voltage | | $V_{CE(SAT)}$ | $I_C$ = 7.5A, $I_B$ = 0.03A | — | — | 1.5 | V |
| Base-Emitter Saturation Voltage | | $V_{BE(SAT)}$ | $I_C$ = 7.5A, $I_B$ = 0.03A | — | — | 2.2 | V |
| Resistive Load Switch Times | Turn On | $t_{on}$ | $V_{CC}$ = 150V | — | .32 | 0.6 | μs |
| | Storage Time | $t_s$ | $I_C$ = 7.5A | — | 1.3 | 3.0 | μs |
| | Fall Time | $t_f$ | $I_{B1}$ = 0.08 $-I_{B2}$ = 0.5A | — | .52 | 1.0 | μs |
| Diode Reverse Recovery | | $t_{rr}$ | $V_{CC}$ = 150V $I_F$ = 7.5A $I_{B1}$ = 0.8A, $I_{B1}$ = 1.5A (peak) $-I_{B2}$ = 0.5A | | .3 | .5 | μs |
| Thermal Resistance, Case to Sink Lubricated | | $R_{\theta CS}$ | — | — | — | 0.6 | °C/W |
| Thermal Resistance, Junction to Case | | $R_{\theta JC}$ | Transistor Part | — | — | 2.0 | °C/W |
| Thermal Resistance, Junction to Case | | $R_{\theta JC}$ | Diode Part | — | — | 3.0 | °C/W |