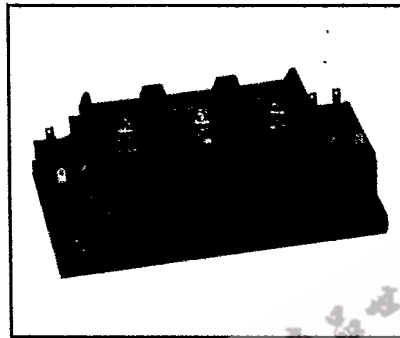
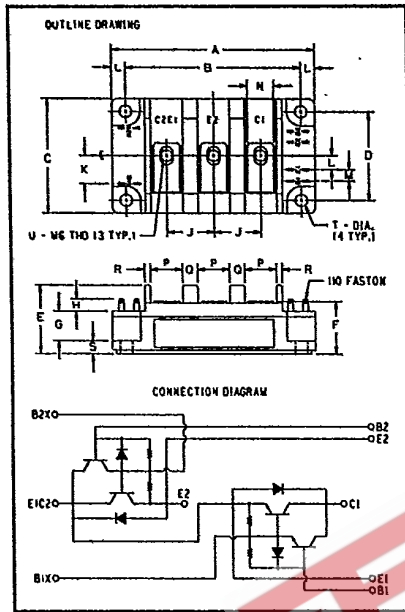




KD421A20 Tentative

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

**Fast Switching
Dual Darlington
Transistor Module
200 Amperes/125 Volts**



**KD421A20
Fast Switching Dual Darlington
Transistor Module
200 Amperes/125 Volts**

Description

Powerex Fast Switching Dual Darlington Transistor Modules are designed for use in Low Voltage switching applications. The modules are isolated for easy mounting of multiple units.

Features:

- Isolated Mounting
- Planar Chips
- Low $V_{CE(SAT)}$
- Fast Switching

Applications:

- 20 KiloHertz Inverters
- AC & DC Motor Control
- Switching Power Supplies

Ordering Information

Example: Select the complete eight digit module part number for the rating you desire from the table - i.e. KD421A20 is a 125 Volt, 200 Ampere Fast Switching Dual Darlington Module.

**125 Volt KD421A20
Outline Drawing**

| Dimension | Inches | Millimeters |
|-----------|--------------|-------------|
| A | 4.252 Max. | 108 Max. |
| B | 3.661 ± .012 | 93 ± 0.3 |
| C | 2.441 Max. | 62 Max. |
| D | 1.890 ± .012 | 48 ± 0.3 |
| E | 1.457 | 37 |
| F | 1.181 Max. | 30 Max. |
| G | .630 | 16 |
| H | .256 Min. | 6.5 Min. |
| J | .984 | 25 |
| K | .591 | 15 |
| L | .295 | 7.5 |
| M | .236 | 6 |
| N | .551 | 14 |
| P | .669 | 17 |
| Q | .315 | 8 |
| R | .118 | 3 |
| S | .276 | 7 |
| T | .256 Dia. | 6.5 Dia. |
| U | M6 Metric | M6 |

| Type | $V_{CE(SUS)}$ Volts (125) | Current Rating Amperes (×10) |
|------|------------------------------|---------------------------------|
| KD42 | 1A | 20 |

POWEREX**Tentative**

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

KD421A20**Fast Switching Dual Darlington Transistor Module**
200 Amperes/125 Volts**Maximum Ratings $T_J = 25^\circ\text{C}$ unless otherwise specified**

| Symbol | KD421A20 | Units |
|---|---------------|--------------------------------|
| Junction Temperature | T_J | -40 to 150 $^\circ\text{C}$ |
| Storage Temperature | T_{STG} | -40 to 125 $^\circ\text{C}$ |
| Collector-Emitter Sustaining Voltage | $V_{CE(SUS)}$ | 125 Volts |
| Collector-Base Voltage | V_{CBO} | 150 Volts |
| Emitter-Base Voltage | V_{EBO} | 7 Volts |
| Collector-Emitter Voltage $V_{BE} = -2V$ | V_{CEV} | 150 Volts |
| Continuous Collector Current | I_C | 200 Amperes |
| Diode Forward Current | I_{FM} | 200 Amperes |
| Continuous Base Current | I_B | 10 Amperes |
| Diode Surge Current | I_{FSM} | 2000 Amperes |
| Power Dissipation | P_T | 800 Watts |
| Max. Mounting Torque (M6) Terminal Screws | — | 26 in.-lb. |
| Max. Mounting Torque (M6) Mounting Screws | — | 26 in.-lb. |
| Module Weight | — | — Grams |
| V isolation | V_{RMS} | 1500 Volts |

Electrical and Mechanical Characteristics $T_J = 25^\circ\text{C}$ unless otherwise specified

| Characteristics | Symbol | Test Conditions | Min. | KD421A20 Typ. | Max. | Units |
|--|-----------------|--|------|------------------|-------|--------------------|
| Collector Cutoff Current | I_{CEV} | $V_{CE} = 150V, V_{BE} = -2V$ | — | — | 1 | mA |
| Collector Cutoff Current | I_{CEV} | $V_{CE} = 150V, V_{BE} = -2V$ $T_C = 125^\circ\text{C}$ | — | — | 3 | mA |
| Emitter Cutoff Current | I_{EBO} | $V_{EB} = 7V$ | — | — | 200 | mA |
| DC Current Gain | h_{FE} | $I_C = 200A, V_{CE} = 2.0V$ | 300 | — | — | — |
| Diode Forward Voltage | V_{FM} | $I_{FM} = 200A$ | — | — | 1.60 | V |
| Collector-Emitter Saturation Voltage | $V_{CE(SAT)}$ | $I_C = 200A, I_B = 1.0A$ | — | — | 1.5 | V |
| Base-Emitter Saturation Voltage | $V_{BE(SAT)}$ | $I_C = 200A, I_B = 1.0A$ | — | — | 2.0 | V |
| Resistive Turn On | t_{on} | $V_{CC} = 75V$ | — | — | 2.0 | μs |
| Load Storage Time | t_s | $I_C = 200A$ | — | — | 4.0 | μs |
| Switch Times Fall Time | t_f | $I_{B1} = -I_{B2} = 1.0A$ | — | — | 2.0 | μs |
| Thermal Resistance, Junction to Sink Lubricated | $R_{\theta CS}$ | Per Half Module | — | — | 0.075 | $^\circ\text{C/W}$ |
| Thermal Resistance, Junction to Case | $R_{\theta JC}$ | Transistor Part | — | — | 0.155 | $^\circ\text{C/W}$ |
| Thermal Resistance, Junction to Case | $R_{\theta JC}$ | Diode Part | — | — | 0.6 | $^\circ\text{C/W}$ |

This specification is tentative;
therefore, performance curves are not
included. Please contact the Powerex
sales representative nearest you for
further information.