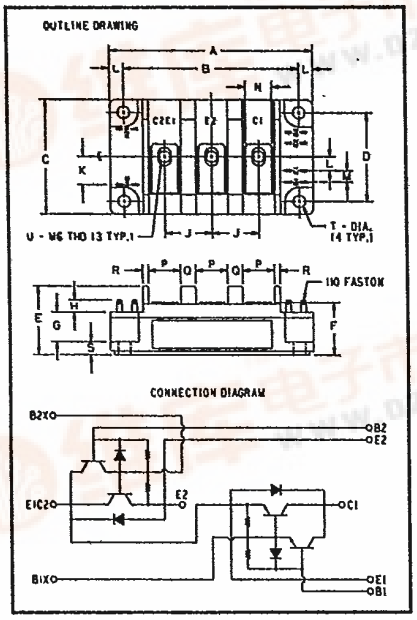
POWEREX

KD421A20 Tentative

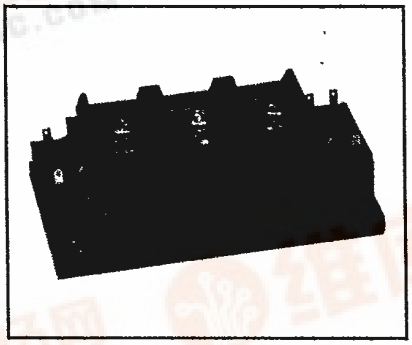
Powerex, Inc., Hillis Street, Youngwood, Pennsylvania 15697 (412) 925-7272

Fast Switching Dual Darlington Transistor Module

200 Amperes/125 Volts



125 Volt KD421A20 Outline Drawing



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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

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.

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

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Maximum Ratings T_J=25°C unless otherwise specified

	Symbol	KD421A20	Units
Junction Temperature	T_J	−40 to 150	°C
Storage Temperature	T_{STG}	−40 to 125	°C
Collector-Emitter Sustaining Voltage	$V_{CEO(SUS)}$	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°C unless otherwise specified

Characteristics		Symbol	Test Conditions	KD421A20 Min.	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°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 Load Switch Times	Turn On	t_{on}	V_{CC} =75V	—	—	2.0	μs
	Storage Time	t_s	I_C =200A	—	—	4.0	μs
	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	°C/W
Thermal Resistance, Junction to Case		$R_{\theta JC}$	Transistor Part	—	—	0.155	°C/W
Thermal Resistance, Junction to Case		$R_{\theta JC}$	Diode Part	—	—	0.6	°C/W

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