ARTISAN®
TECHNOLOGY GROUP

Your **definitive** source for quality pre-owned equipment.

Artisan Technology Group
(217) 352-9330 | sales@artisantg.com | artisantg.com

Full-service, independent repair center
with experienced engineers and technicians on staff.

We buy your excess, underutilized, and idle equipment
along with credit for buybacks and trade-ins.

Custom engineering
so your equipment works exactly as you specify.

- Critical and expedited services
- In stock / Ready-to-ship
- Leasing / Rentals / Demos
- ITAR-certified secure asset solutions

Expert team | Trust guarantee | 100% satisfaction

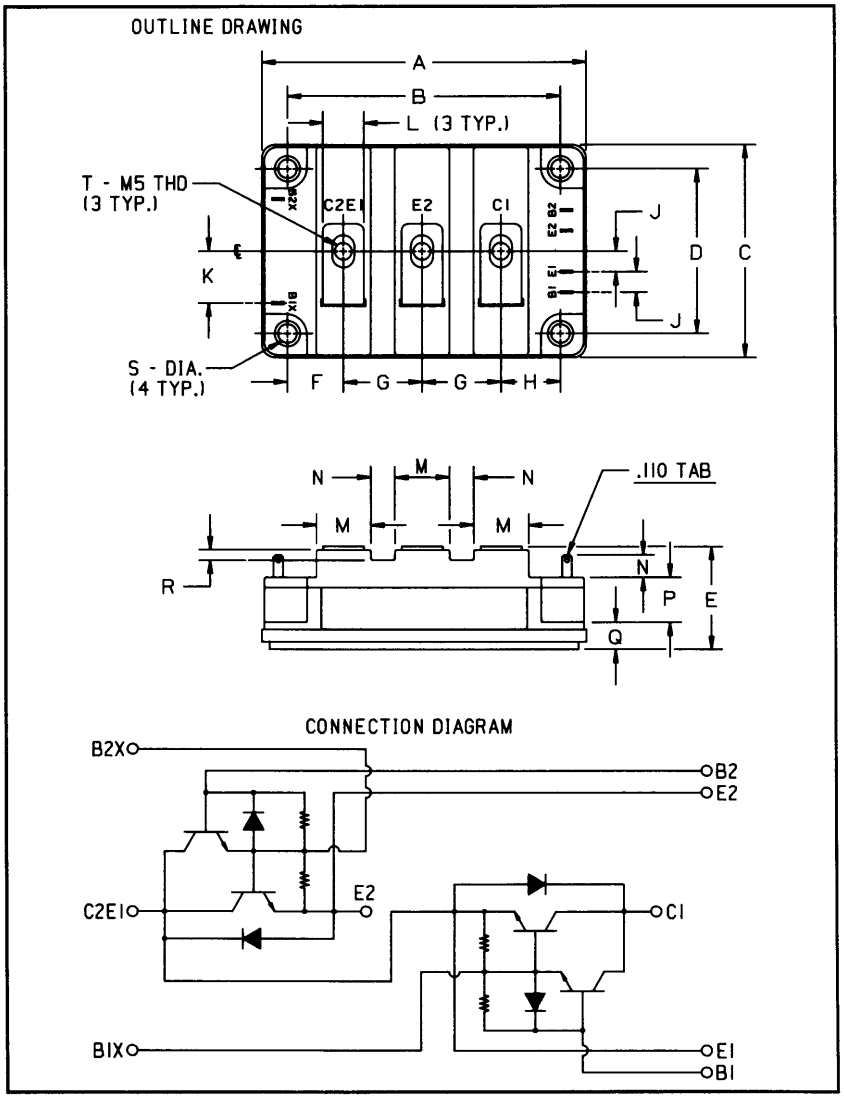
All trademarks, brand names, and brands appearing herein are the property of their respective owners.

Find the *Powerex KD324510* at our website: ***Click HERE***

Powerex, Inc., 200 Hillis Street, Youngwood, Pennsylvania 15697-1800 (412) 925-7272

Dual Darlington Transistor Module

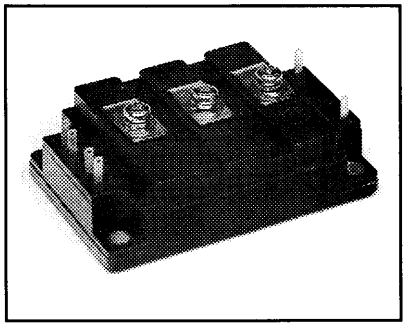
100 Amperes/600 Volts



Outline Drawing

Dimensions	Inches	Millimeters
A	3.740 Max.	95 Max.
B	3.150 ± 0.01	80 ± 0.25
C	2.441 Max.	62 Max.
D	1.890 ± 0.01	48 ± 0.25
E	1.181 Max.	30 Max.
F	0.650	16.5
G	0.906	23
H	0.689	17.5
J	0.236	6

Dimensions	Inches	Millimeters
K	0.596	15
L	0.472	12
M	0.630	16
N	0.276	7
P	0.512	13
Q	0.315	8
R	0.118	3
S	0.216 Dia.	5.5 Dia.
T	M5 Metric	M5



Description:
The Powerex Dual Darlington Transistor Modules are high power devices designed for use in switching applications. The modules are isolated, consisting of two Darlington Transistors with each transistor having a reverse parallel connected high-speed diode.

Features:
- ☐ Isolated Mounting
- ☐ Planar Chips
- ☐ Discrete Fast Recovery Feedback Diode
- ☐ High Gain (h_{FE})
- ☐ Quick Connect Base-Emitter Signal Terminals
- ☐ Base-Emitter Speed-up Diodes

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

Ordering Information:
Example: Select the complete eight digit module part number you desire from the table - i.e. KD324510 is a 450 $V_{CEO(sus)}$ (600 V_{CEV}), 100 Ampere Dual Darlington Module.

Type	$V_{CEO(sus)}$ Volts (X 10)	Current Rating Amperes (X 10)
KD32	45	10

Powerex, Inc., 200 Hillis Street, Youngwood, Pennsylvania 15697-1800 (412) 925-7272

KD324510
Dual Darlington Transistor Module
100 Amperes/600 Volts

Absolute Maximum Ratings, T_j = 25 °C unless otherwise specified

Ratings	Symbol	KD324510	Units
Junction Temperature	T_j	-40 to 150	°C
Storage Temperature	T_{stg}	-40 to 125	°C
Collector-Emitter Sustaining Voltage	$V_{CEO(sus)}$	450	Volts
Collector-Emitter Sustaining Voltage, V_{BE} = -2V	$V_{CEV(sus)}$	600	Volts
Collector-Base Voltage	V_{CBO}	600	Volts
Emitter-Base Voltage	V_{EBO}	7	Volts
Collector-Emitter Voltage, V_{BE} = -2V	V_{CEV}	600	Volts
Continuous Collector Current	I_C	100	Amperes
Diode Forward Current	I_{FM}	100	Amperes
Continuous Base Current	I_B	6	Amperes
Diode Surge Current	I_{FSM}	1000	Amperes
Power Dissipation (Each Transistor)	P_t	620	Watts
Max. Mounting Torque M5 Terminal Screws	–	17	in.-lb.
Max. Mounting Torque M5 Mounting Screws	–	17	in.-lb.
Module Weight (Typical)	–	420	Grams
V Isolation	V_{RMS}	2500	Volts

Electrical Characteristics, T_j = 25 °C unless otherwise specified

Characteristics		Symbol	Test Conditions	Min.	Typ.	Max.	Units
Collector Cutoff Current		I_{CEV}	V_{CE} = 600V, V_{BE} = -2V	–	–	2	mA
			V_{CE} = 600V, V_{BE} = -2V, T_C = 125°C	–	–	15	mA
Emitter Cutoff Current		I_{EBO}	V_{EB} = 7V	–	–	100	mA
DC Current Gain		h_{FE}	I_C = 100A, V_{CE} = 2V	75	–	–	–
			I_C = 100A, V_{CE} = 5V	100	–	–	–
Diode Forward Voltage		V_{FM}	I_{FM} = 100A	–	–	1.75	Volts
Collector-Emitter Saturation Voltage		$V_{CE(sat)}$	I_C = 100A, I_B = 1.3A	–	–	2.0	Volts
Base-Emitter Saturation Voltage		$V_{BE(sat)}$	I_C = 100A, I_B = 1.3A	–	–	2.5	Volts
Resistive	Turn-on	t_{on}	V_{CC} = 300V	–	–	2.0	µs
Load	Storage Time	t_s	I_C = 100A	–	–	12	µs
Switch Times	Fall Time	t_f	I_{B1} = 2A, I_{B2} = -2A	–	–	3.0	µs

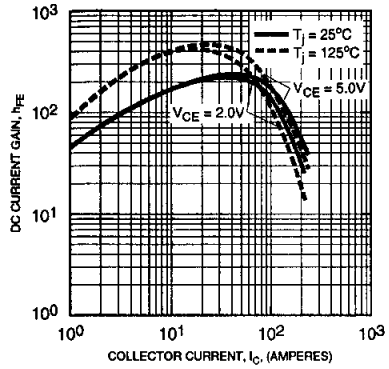
Thermal and Mechanical Characteristics, T_j = 25 °C unless otherwise specified

Characteristics	Symbol	Test Conditions	Min.	Typ.	Max.	Units
Thermal Resistance, Case-to-Sink	$R_{\theta(c-s)}$	Per 1/2 Module	–	–	0.1	°C/W
Thermal Resistance, Junction-to-Case	$R_{\theta(j-c)}$	Transistor Part	–	–	0.2	°C/W
Thermal Resistance, Junction-to-Case	$R_{\theta(j-c)}$	Diode Part	–	–	0.65	°C/W

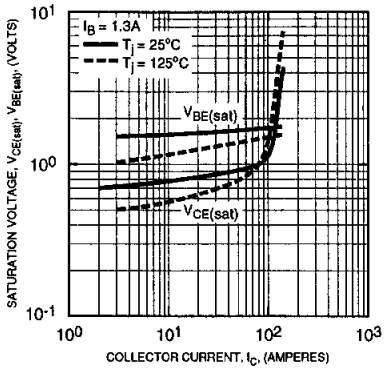
Powerex, Inc., 200 Hillis Street, Youngwood, Pennsylvania 15697-1800 (412) 925-7272

KD324510
Dual Darlington Transistor Module
100 Amperes/600 Volts

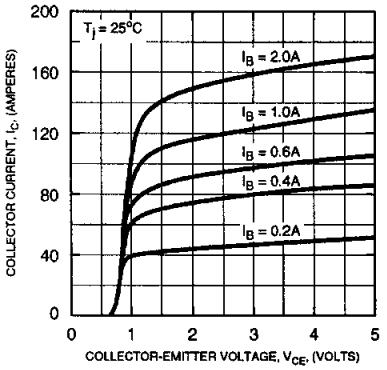
DC CURRENT GAIN (TYPICAL)



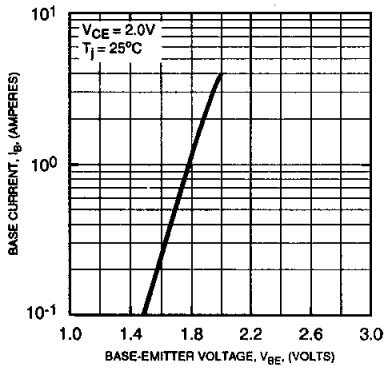
SATURATION VOLTAGE (TYPICAL)



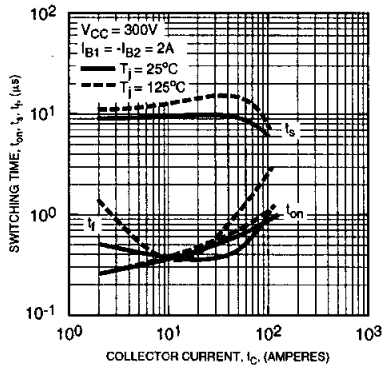
COMMON EMITTER OUTPUT CHARACTERISTICS (TYPICAL)



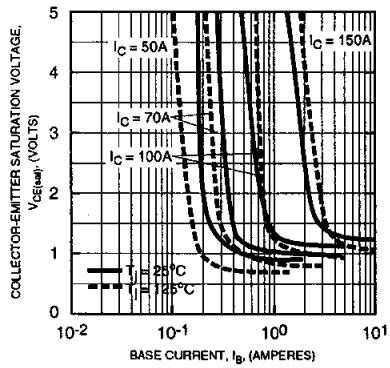
COMMON EMITTER INPUT CHARACTERISTICS (TYPICAL)



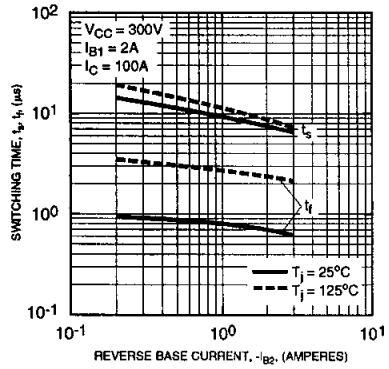
SWITCHING CHARACTERISTICS (TYPICAL)



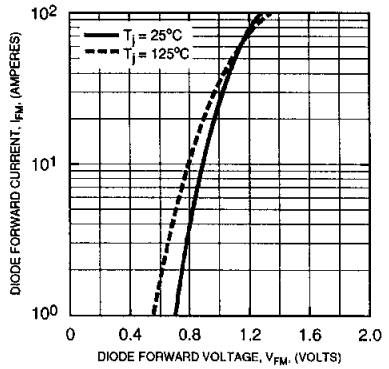
COLLECTOR-EMITTER SATURATION VOLTAGE (TYPICAL)



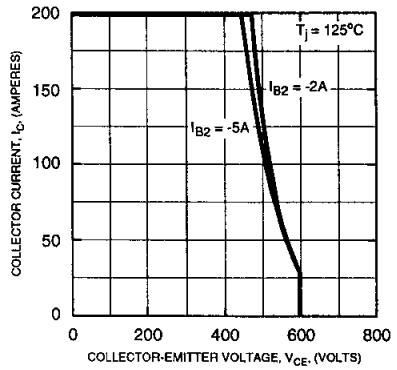
SWITCHING TIME VS. BASE CURRENT (TYPICAL)



DIODE CHARACTERISTICS (TYPICAL)



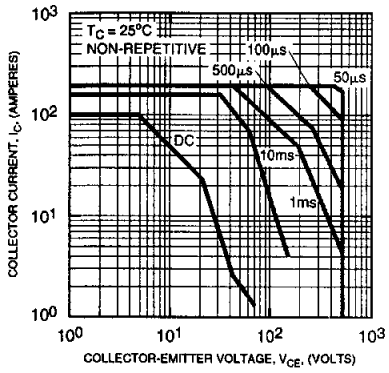
REVERSE BIAS SAFE OPERATING AREA (RBSOA)



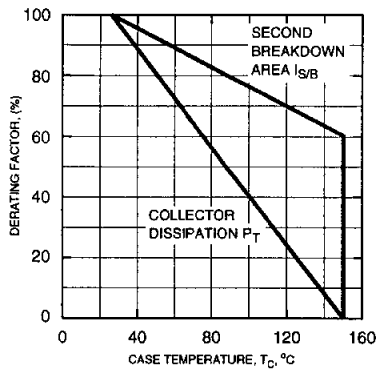
Powerex, Inc., 200 Hillis Street, Youngwood, Pennsylvania 15697-1800 (412) 925-7272

KD324510
Dual Darlington Transistor Module
100 Amperes/600 Volts

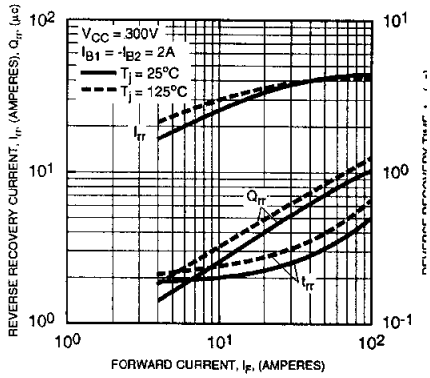
FORWARD BIAS SAFE OPERATING AREA (SOA)



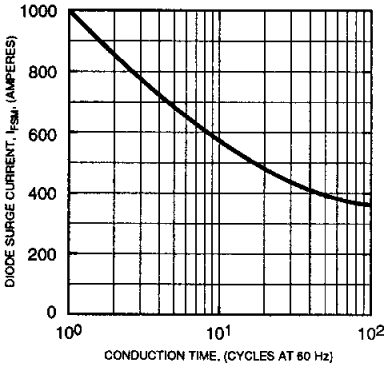
DERATING FACTOR OF SAFE OPERATING AREA (SOA)



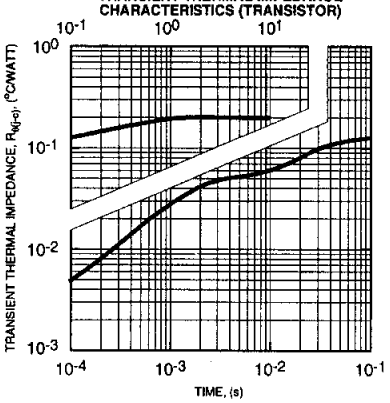
REVERSE RECOVERY CHARACTERISTICS OF FREE-WHEEL DIODE (TYPICAL)



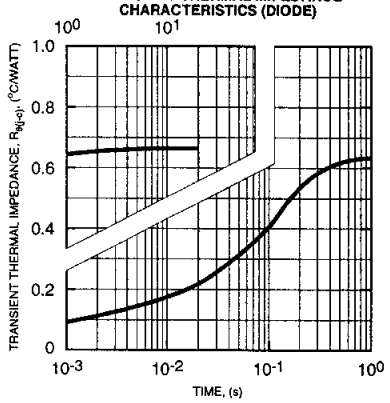
DIODE FORWARD SURGE CURRENT



TRANSIENT THERMAL IMPEDANCE CHARACTERISTICS (TRANSISTOR)



TRANSIENT THERMAL IMPEDANCE CHARACTERISTICS (DIODE)



Artisan Technology Group is an independent supplier of quality pre-owned equipment

Gold-standard solutions

Extend the life of your critical industrial, commercial, and military systems with our superior service and support.

We buy equipment

Planning to upgrade your current equipment? Have surplus equipment taking up shelf space? We'll give it a new home.

Learn more!

Visit us at **artisantg.com** for more info on price quotes, drivers, technical specifications, manuals, and documentation.

Artisan Scientific Corporation dba Artisan Technology Group is not an affiliate, representative, or authorized distributor for any manufacturer listed herein.

We're here to make your life easier. How can we help you today?

(217) 352-9330 | sales@artisantg.com | artisantg.com

ARTISAN® TECHNOLOGY GROUP