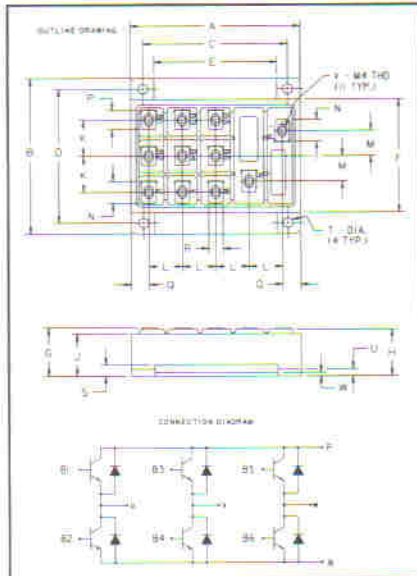


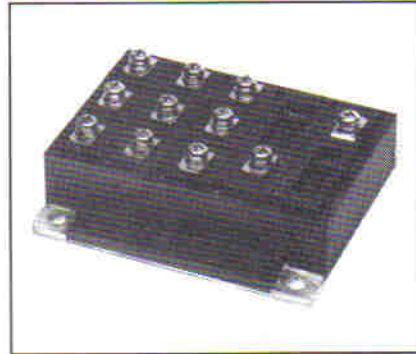
Six-Darlington Transistor Module 50 Amperes/600 Volts



600 Volt KE524505
Outline Drawing

Dimension	Inches	Millimeters
A	3.701	94
B	3.386	86
C	3.150 ± .010	80 ± 0.25
D	2.913 ± .010	74 ± 0.25
E	2.677	68
F	2.461	62.5
G	1.063 ± .016	27 ± 0.4
H	1.024	26
J	.925	23.5
K	.787	20
L	.728	18.5
M	.551	14
N	.472	12
P	.413	10.5
Q	.394	10
R	.315	8
S	.256	6.5
T	.212 ± .004 Dia.	5.4 ± 0.1 Dia.
U	.157	4
V	M4 Metric	M4
W	.079	2

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.



KE524505
Six-Darlington
Transistor Module
50 Amperes/600 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 base emitter speed up diodes. The transistors are connected in a three phase bridge configuration.

Features:

- Isolated Mounting
- Planar Chips
- Discrete 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. KE524505 is a 450 $V_{CE0(SUS)}$ (600 V_{CEV}), 50 Ampere Six-Darlington Module.

Type	$V_{CE0(SUS)}$ Volts ($\times 10$)	Current Rating Amperes ($\times 10$)
KE52	45	05

KE524505

Six-Darlington Transistor Module

50 Amperes/600 Volts

Maximum Ratings $T_J = 25^\circ\text{C}$ unless otherwise specified

	Symbol	KE524505	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	$V_{CE(SUS)}$	450	Volts
Collector-Emitter Sustaining Voltage $V_{BE} = -2\text{V}$	$V_{CEV(SUS)}$	600	Volts
Collector-Base Voltage	V_{CB0}	600	Volts
Emitter-Base Voltage	V_{EB0}	7	Volts
Collector-Emitter Voltage $V_{BE} = -2\text{V}$	V_{CEV}	600	Volts
Continuous Collector Current	I_C	50	Amperes
Diode Forward Current	I_{FM}	50	Amperes
Continuous Base Current	I_B	3	Amperes
Diode Surge Current	I_{FSM}	500	Amperes
Power Dissipation Each Transistor	P_T	310	Watts
Max. Mounting Torque M4 Terminal Screw	—	12	in.-lb.
Max. Mounting Torque M5 Mounting Screw	—	17	in.-lb.
Module Weight	—	580	Grams
V Isolation	V_{RMS}	2000	Volts

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

Characteristics	Symbol	Test Conditions	KE524505			Units
			Min.	Typ.	Max.	
Collector Cutoff Current	I_{CEV}	$V_{CE} = 600\text{V}, V_{BE} = -2\text{V}$	—	—	1	mA
Collector Cutoff Current	I_{CEV}	$V_{CE} = 600\text{V}, V_{BE} = -2\text{V}$ $T_C = 125^\circ\text{C}$	—	—	5	mA
Emitter Cutoff Current	I_{EBO}	$V_{EB} = 7\text{V}$	—	—	200	mA
DC Current Gain	h_{FE}	$I_C = 50\text{A}, V_{CE} = 2\text{V}$	75	—	—	—
DC Current Gain	h_{FE}	$I_C = 50\text{A}, V_{CE} = 5\text{V}$	100	—	—	—
Diode Forward Voltage	V_{FM}	$I_{FM} = 50\text{A}$	—	—	1.75	V
Collector-Emitter Saturation Voltage	$V_{CE(SAT)}$	$I_C = 50\text{A}, I_B = 65\text{A}$	—	—	2.0	V
Base-Emitter Saturation Voltage	$V_{BE(SAT)}$	$I_C = 50\text{A}, I_B = 65\text{A}$	—	—	2.5	V
Resistive Turn On	t_{on}	$V_{CC} = 300\text{V}$	—	—	1.5	μs
Load Storage Time	t_s	$I_C = 50\text{A}$	—	—	12	μs
Switch Times Fall Time	t_f	$I_{B1} = -I_{B2} = 1.0\text{A}$	—	—	3.0	μs
Thermal Resistance, Case to Sink Lubricated	$R_{\theta CS}$	—	—	—	0.15	$^\circ\text{C/W}$
Thermal Resistance, Junction to Case	$R_{\theta JC}$	Transistor Part	—	—	0.4	$^\circ\text{C/W}$
Thermal Resistance, Junction to Case	$R_{\theta JC}$	Diode Part	—	—	1.3	$^\circ\text{C/W}$