

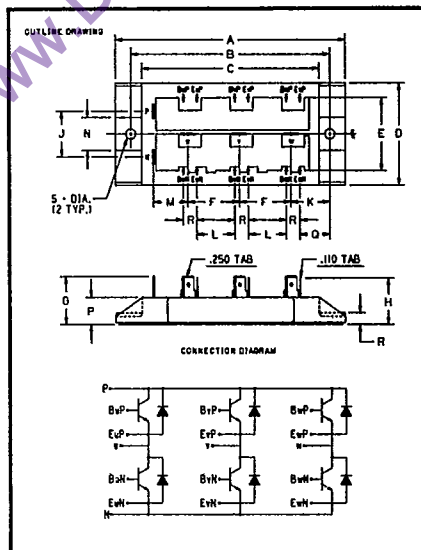
POWEREX**KE721K03HB**

T-33-35

Powerex, Inc., Hillis Street, Youngwood, Pennsylvania 15697 (412) 925-7272
 Powerex Europe, S.A., 428 Avenue G, Durand, BP107, 72003 Le Mans, France (43) 41.14.14

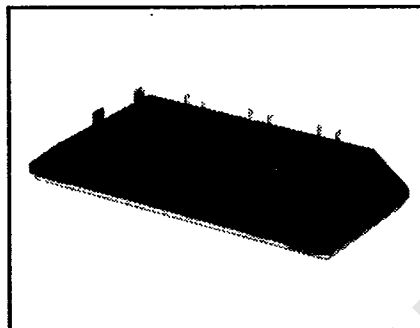
High-Beta Six-Darlington Transistor Module

30 Amperes/1000 Volts



**1000 Volts KE721K03HB
Outline Drawing**

Dimension	Inches	Millimeters
A	5.000	127
B	4.331 ± .012	110 ± 0.3
C	3.858	98
D	2.205	56
E	1.575	40
F	1.122	28.5
G	1.043	26.5
H	1.008	25.6
J	.984	25
K	.846	21.5
L	.827	21
M	.748	19
N	.709	18
P	.689	17.5
Q	.650	16.5
R	.295	7.5
S	.216 Dia.	5.5 Dia.



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Description

Powerex High-Beta 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. The transistors are connected in a three phase bridge configuration.

Features:

- ☐ Isolated Mounting
- ☐ Planar Chips
- ☐ Discrete Fast Recovery Feed-Back Diode
- ☐ Very High Gain (h_{FE})
- ☐ Quick Connect Terminals
- ☐ Base Emitter Speed Up Diode

Applications:

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

Ordering Information

Example: Select the complete ten digit module part number you desire from the table - i.e. KE721K03HB is an 850 $V_{CE0(SUS)}$, (1000 V_{CEV}), 30 Ampere High-Beta Six-Darlington Module with a gain of 750 at rated current (30 Amperes).

Type	$V_{CE0(SUS)}$ Volts (1000)	Current Rating Amperes ($\times 10$)	High Beta
KE72	1K	03	HB



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KE721K03HB**High-Beta Six-Darlington Transistor Module****30 Amperes/1000 Volts****Absolute Maximum Ratings**

	Symbol	KE721K03HB	Units
Junction Temperature	T_J	-40 to 150	°C
Storage Temperature	T_{STG}	-40 to 125	°C
Collector-Emitter Sustaining Voltage	$V_{CEQ(SUS)}$	850	Volts
Collector-Emitter Sustaining Voltage $V_{BE} = -2V$	$V_{CEV(SUS)}$	1000	Volts
Collector-Base Voltage	V_{CBO}	1000	Volts
Emitter-Base Voltage	V_{EBO}	7	Volts
Collector-Emitter Voltage $V_{BE} = -2V$	V_{CEV}	1000	Volts
Continuous Collector Current	I_C	30	Amperes
Diode Forward Current	I_{FM}	30	Amperes
Continuous Base Current	I_B	2	Amperes
Diode Surge Current	I_{FSM}	300	Amperes
Power Dissipation	P_T	300	Watts
Maximum Mounting Torque M5 Mounting Screws	—	17	in.-lb.
Module Weight (Typical)	—	500	Grams
V Isolation	V_{RMS}	2500	Volts

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

Characteristics	Symbol	Test Conditions	Min.	KE721K03HB Typ.	Max.	Units
Collector Cutoff Current	I_{CEV}	$V_{CE} = 1000V, V_{BE} = -2V$	—	—	2	mA
Emitter Cutoff Current	I_{EBO}	$V_{EB} = 7V$	—	—	50	mA
DC Current Gain	h_{FE}	$I_C = 30A, V_{CE} = 4.0V$	750	—	—	—
Diode Forward Voltage	V_{FM}	$I_{FM} = 30A$	—	—	1.8	Volts
Collector-Emitter Saturation Voltage	$V_{CE(SAT)}$	$I_C = 30A, I_B = 40mA$	—	—	4.0	Volts
Base-Emitter Saturation Voltage	$V_{BE(SAT)}$	$I_C = 30A, I_B = 40mA$	—	—	4.0	Volts
Resistive Turn-on	t_{on}	$V_{CC} = 600V$	—	—	2.5	μs
Load Storage Time	t_s	$I_C = 30A$	—	—	15.0	μs
Switch Times Fall Time	t_f	$I_{B1} = 0.06A, I_{B2} = -0.6A$	—	—	3.0	μs
Thermal Resistance, Case to Sink Lubricated	$R_{\theta CS}$	Per 1/6 Module	—	—	0.25	°C/W
Thermal Resistance, Junction to Case	$R_{\theta JC}$	Transistor Part	—	—	0.4	°C/W
Thermal Resistance, Junction to Case	$R_{\theta JC}$	Diode Part	—	—	1.5	°C/W

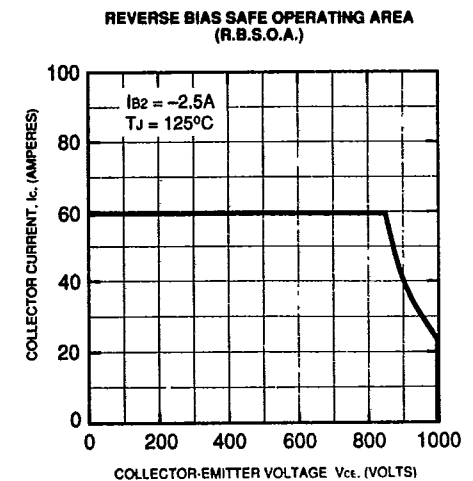
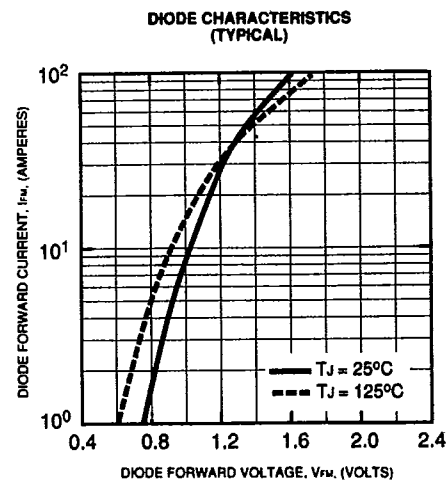
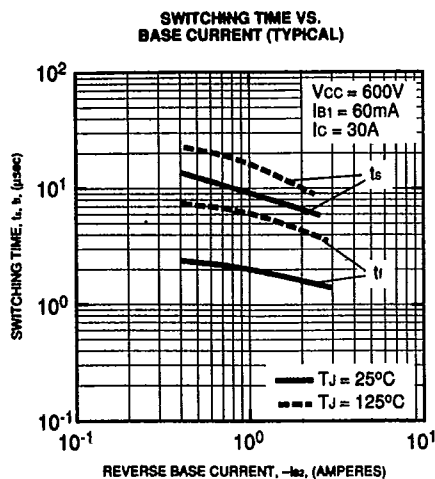
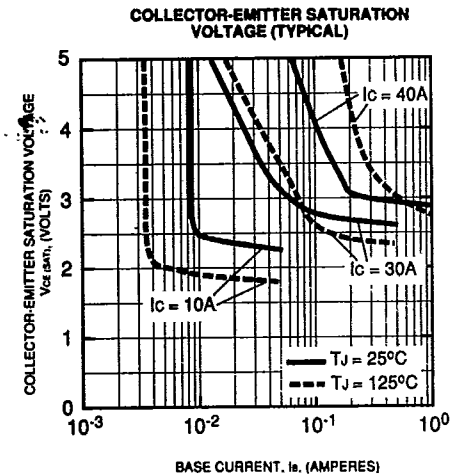
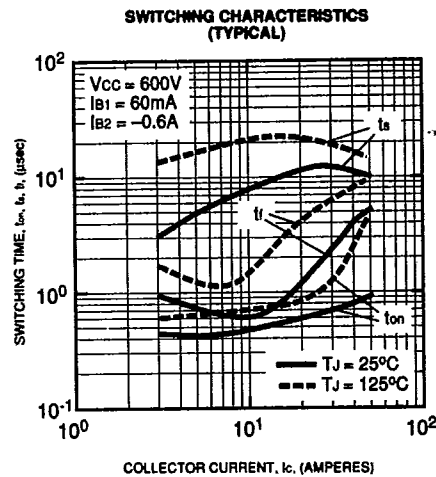
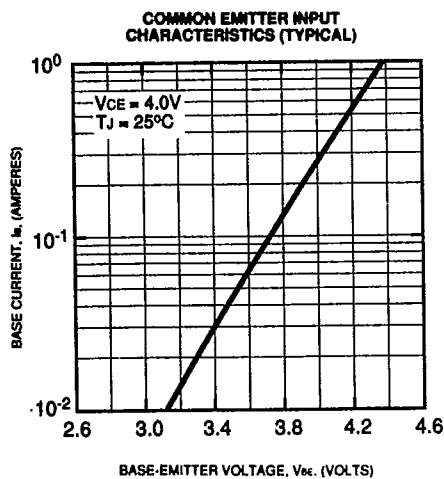
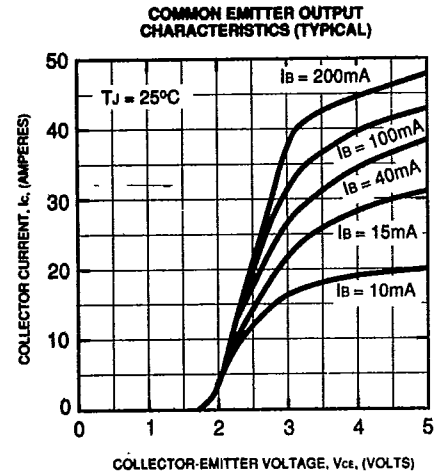
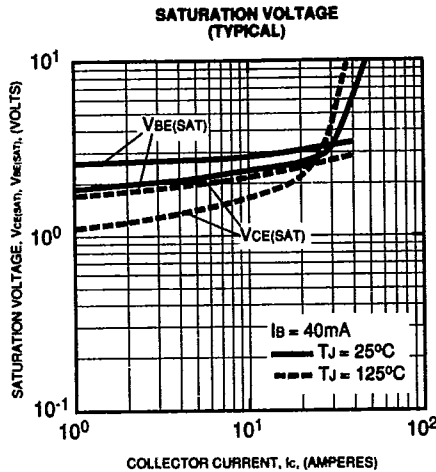
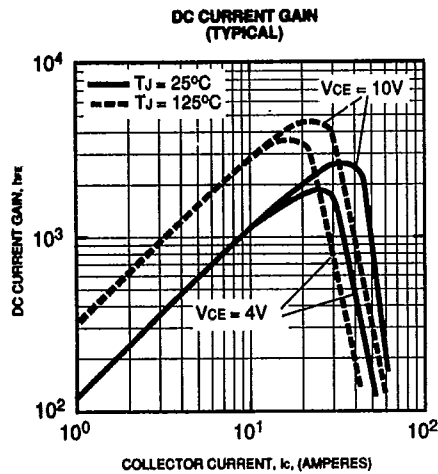


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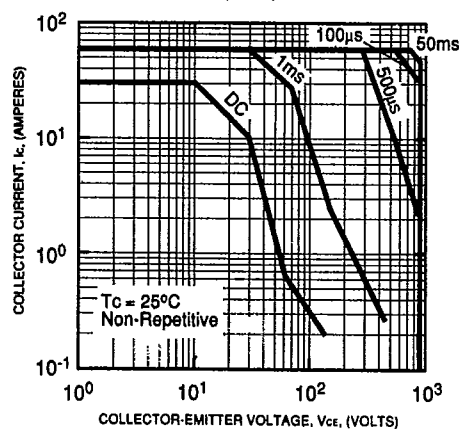
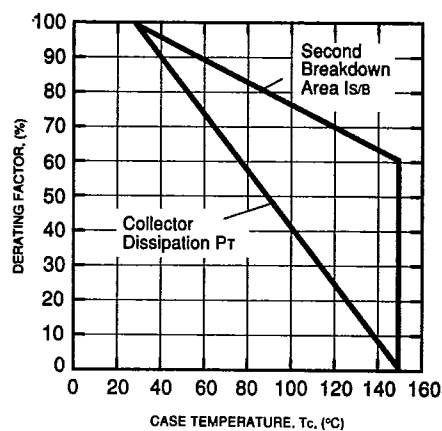
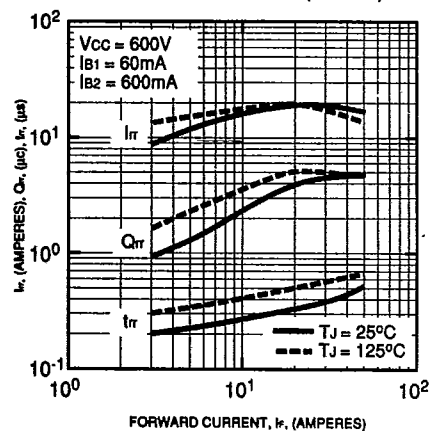
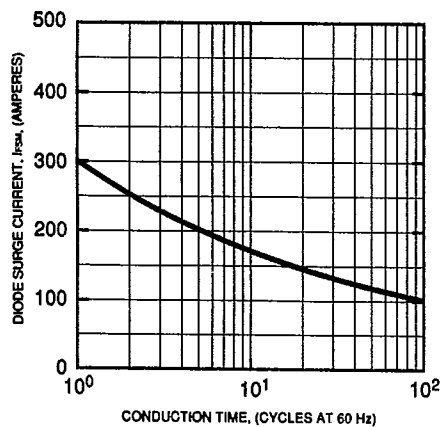
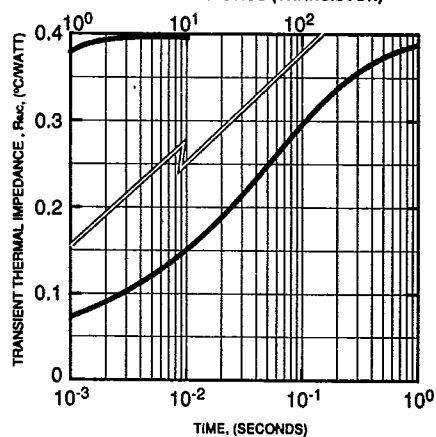
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KE721K03HB**High-Beta Six-Darlington Transistor Module****30 Amperes/1000 Volts****FORWARD BIAS SAFE OPERATING AREA (S.O.A.)****DERATING FACTOR OF S.O.A.****REVERSE RECOVERY CHARACTERISTICS OF FREE-WHEEL DIODE (TYPICAL)****DIODE FORWARD SURGE CURRENT****TRANSIENT THERMAL IMPEDANCE CHARACTERISTICS (TRANSISTOR)****TRANSIENT THERMAL IMPEDANCE CHARACTERISTICS (DIODE)**