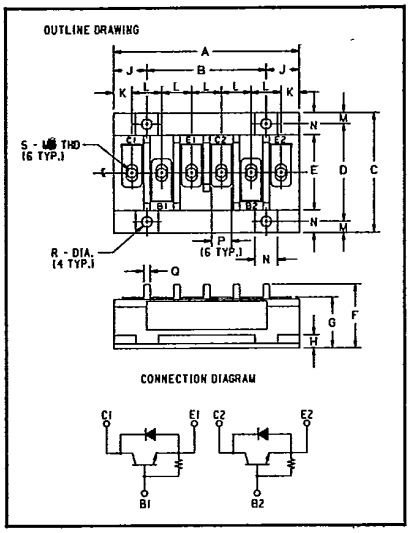
POWEREX

KT234510

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

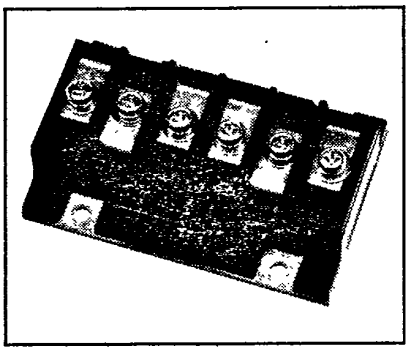
Split-Dual Bipolar Transistor Module

100 Amperes/600 Volts



600 Volt KT234510 Outline Drawing

Dimension	Inches	Millimeters
A	3.858±.016	98±0.4
B	2.48±.012	63±0.3
C	2.52±.016	64±0.4
D	2.047±.012	52±0.3
E	1.575±.012	40±0.3
F	1.339 Max.	34 Max.
G	1.063+.02/−.00	27+0.5/−0.0
H	.276	7
J	.689	17.5
K	.374	9.5
L	.622	15.8
M	.236	6
N	.472	12
P	.413±.008	10.5±0.2
Q	.134	3.4
R	.216±.006 Dia.	5.5±0.15 Dia.
S	M5 Metric	M5



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Description
Powerex Split-Dual Bipolar Transistor Modules are designed for use in switching applications. The modules are isolated consisting of two Bipolar Transistors each having a reverse parallel connected high-speed diode.

Features:
- ☐ Isolated Mounting
- ☐ Planar Chips
- ☐ Discrete Fast Recovery Feed-Back Diode
- ☐ Low $V_{CE(SAT)}$
- ☐ Fast Switching

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

Ordering Information
Example: Select the complete eight digit module part number you desire from the table - i.e. KT234510 is a 450 $V_{CEO(SUS)}$ (600 V_{CEV}), 100 Ampere Split-Dual Bipolar Module.

Type	$V_{CEO(SUS)}$ Volts (×10)	Current Rating Amperes (×10)
KT23	45	10

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Maximum Ratings T_J=25°C unless otherwise specified

	Symbol	KT234510	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	30	Amperes
Diode Surge Current	I_{FSM}	1000	Amperes
Power Dissipation	P_T	625	Watts
Max. Mounting Torque M5 Terminal Screws	—	17	in.-lb.
Max. Mounting Torque M5 Mounting Screws	—	17	in.-lb.
Module Weight	—	420	Grams
V isolation	V_{RMS}	2000	Volts

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Electrical and Mechanical Characteristics T_J=25°C unless otherwise specified

Characteristics		Symbol	Test Conditions	KT234510 Min.	Typ.	Max.	Units
Collector Cutoff Current		I_{CEV}	V_{CE}=600V, V_{BE}=−2V	—	—	1	mA
Emitter Cutoff Current		I_{EBO}	V_{EB}=7V	—	—	300	mA
DC Current Gain		h_{FE}	I_C=80A, V_{CE}=5V	8	—	—	—
DC Current Gain		h_{FE}	I_C=100A, V_{CE}=2V	—	8	—	—
Diode Forward Voltage		V_{FM}	I_{FM}=100A	—	—	1.8	V
Collector-Emitter Saturation Voltage		$V_{CE(SAT)}$	I_C=100A, I_B=20A	—	—	1.0	V
Base-Emitter Saturation Voltage		$V_{BE(SAT)}$	I_C=100A, I_B=20A	—	—	1.5	V
Resistive Load Switch Times	Turn On	t_{on}	V_{CC}=300V	—	—	2.0	μs
	Storage Time	t_s	I_C=80A	—	—	7	μs
	Fall Time	t_f	I_{B1}=−I_{B2}=15A	—	—	1.0	μs
Thermal Resistance, Case to Sink Lubricated		$R_{\theta CS}$	Per Half Module	—	—	0.15	°C/W
Thermal Resistance, Junction to Case		$R_{\theta JC}$	Transistor Part	—	—	0.2	°C/W
Thermal Resistance, Junction to Case		$R_{\theta JC}$	Diode Part	—	—	0.6	°C/W

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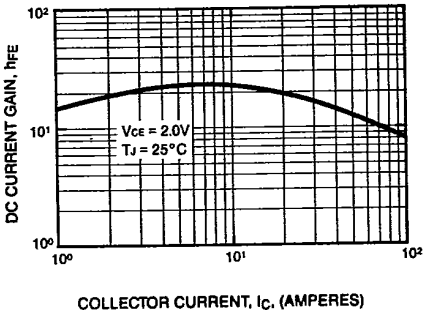
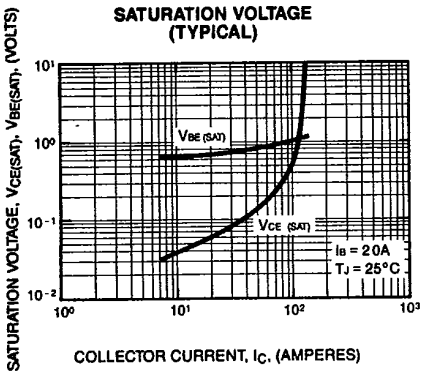
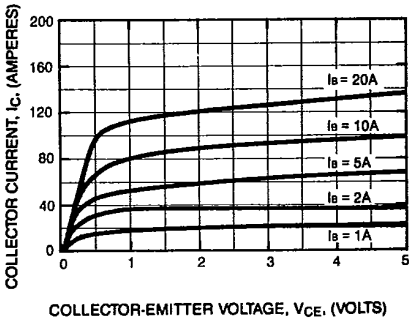
DC CURRENT GAIN (TYPICAL)



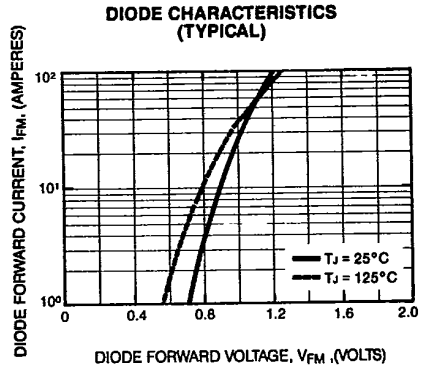
SATURATION VOLTAGE (TYPICAL)



COMMON EMITTER OUTPUT CHARACTERISTICS (TYPICAL)



DIODE CHARACTERISTICS (TYPICAL)



REVERSE RECOVERY CHARACTERISTICS OF FREE-WHEEL DIODE (TYPICAL)