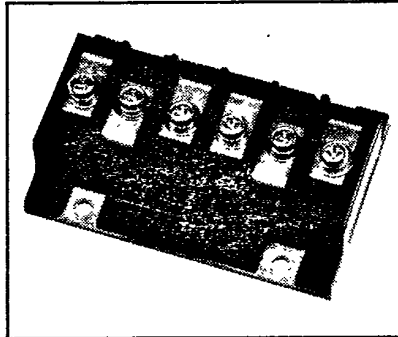
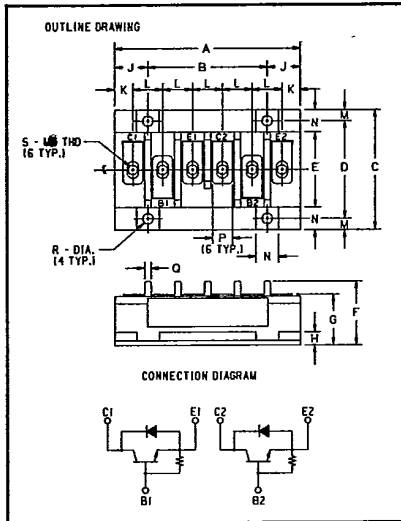




Powerex, Inc., Hillis Street, Youngwood, Pennsylvania 15697 (412) 925-7272

**KT234510**

**Split-Dual Bipolar Transistor Module  
100 Amperes/600 Volts**



**KT234510**  
**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

**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  $V_{CEQ(SUS)}$  (600  $V_{CEV}$ ), 100 Ampere Split-Dual Bipolar Module.

Type	$V_{CEQ(SUS)}$ Volts (x10)	Current Rating Amperes (x10)
KT23	45	10



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

	Symbol	KT234510	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	$V_{CBO}$	600	Volts
Emitter-Base Voltage	$V_{EBO}$	7	Volts
Collector-Emitter Voltage $V_{BE} = -2\text{V}$	$V_{CEV}$	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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100 Amperes/600 Volts

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

Characteristics	Symbol	Test Conditions	KT234510			Units
			Min.	Typ.	Max.	
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 Turn On	$t_{on}$	$V_{CC} = 300V$	—	—	2.0	$\mu\text{s}$
Load Storage Time	$t_s$	$I_C = 80A$	—	—	7	$\mu\text{s}$
Switch Times Fall Time	$t_f$	$I_{B1} = -I_{B2} = 15A$	—	—	1.0	$\mu\text{s}$
Thermal Resistance, Case to Sink Lubricated	$R_{\theta CS}$	Per Half Module	—	—	0.15	$^\circ\text{C/W}$
Thermal Resistance, Junction to Case	$R_{\theta JC}$	Transistor Part	—	—	0.2	$^\circ\text{C/W}$
Thermal Resistance, Junction to Case	$R_{\theta JC}$	Diode Part	—	—	0.6	$^\circ\text{C/W}$

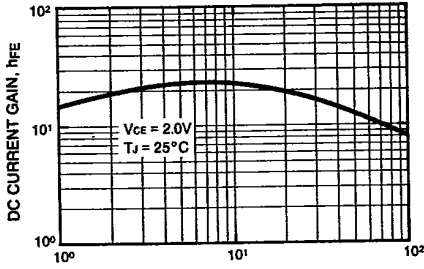


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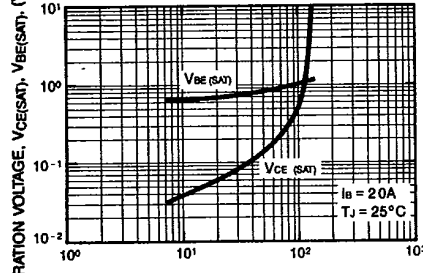
KT234510  
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DC CURRENT GAIN (TYPICAL)



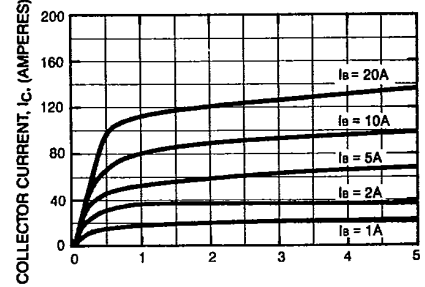
COLLECTOR CURRENT,  $I_C$ , (AMPERES)

SATURATION VOLTAGE (TYPICAL)



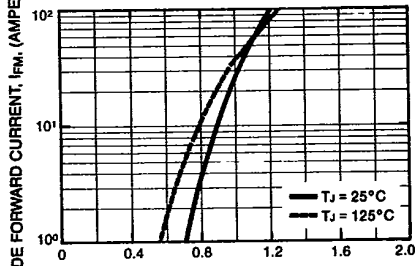
COLLECTOR CURRENT,  $I_C$ , (AMPERES)

COMMON EMITTER OUTPUT CHARACTERISTICS (TYPICAL)



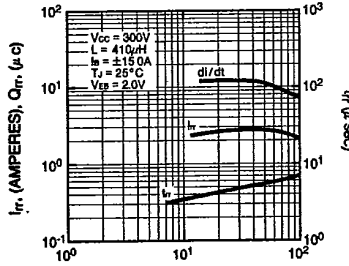
COLLECTOR-EMITTER VOLTAGE,  $V_{CE}$ , (VOLTS)

DIODE CHARACTERISTICS (TYPICAL)



DIODE FORWARD VOLTAGE,  $V_{FM}$ , (VOLTS)

REVERSE RECOVERY CHARACTERISTICS OF FREE-WHEEL DIODE (TYPICAL)



FORWARD CURRENT,  $I_F$ , (AMPERES)