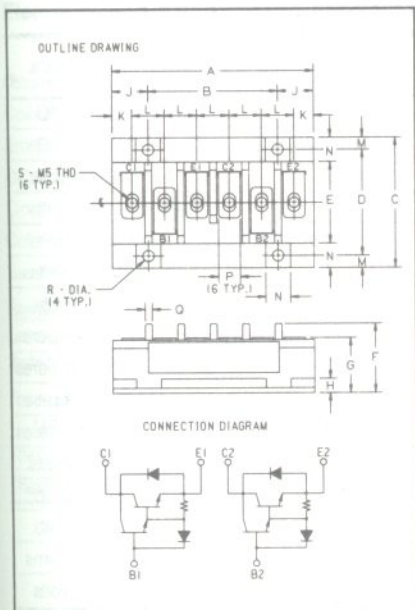


Mitsubishi sold the same part as QM100DX-H
QM100DX-H and KT224510 are 100% equivalent

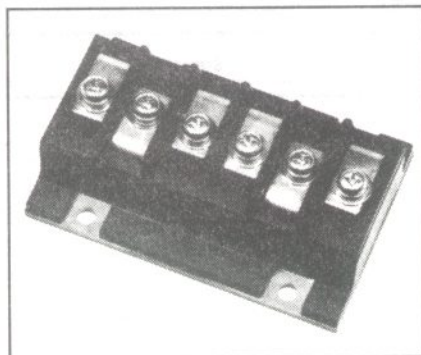
KT224510

Split-Dual Darlington Transistor Module 100 Amperes/600 Volts



600 Volt KT224510
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/-0.00	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



KT224510
Split-Dual Darlington
Transistor Module
100 Amperes/600 Volts

Description

Powerex Split-Dual Darlington Transistor Modules are 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 Feed-Back Diode
- High Gain (h_{FE})
- Base Emitter Speed Up Diode

Applications:

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

Ordering Information

Example: Select the complete eight digit module part number you desire from the table - i.e. KT224510 is a 450 $V_{CE0(SUS)}$ (600 V_{CEV}), 100 Ampere Split-Dual Darlington Module.

Type	$V_{CE0(SUS)}$ Volts ($\times 10$)	Current Rating Amperes ($\times 10$)
KT22	45	10



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

KT224510
Split-Dual Darlington Transistor Module
100 Amperes/600 Volts

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

	Symbol	KT224510	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	$V_{CEO(SUS)}$	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_{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	—	420	Grams
V isolation	V_{RMS}	2000	Volts

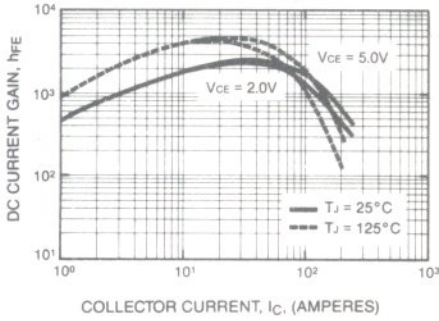
KT224510
Split-Dual Darlington Transistor Module
 100 Amperes/600 Volts

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

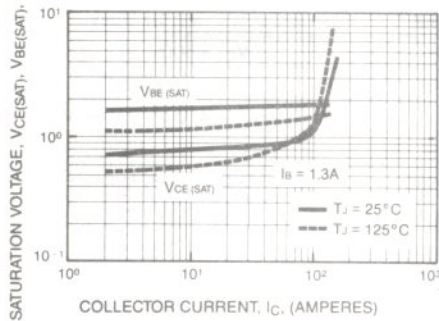
Characteristics	Symbol	Test Conditions	Min.	KT224510 Typ.	Max.	Units
Collector Cutoff Current	I_{CEV}	$V_{CE} = 600V, V_{BE} = -2V$	—	—	2	mA
Emitter Cutoff Current	I_{EBO}	$V_{EB} = 7V$	—	—	300	mA
DC Current Gain	h_{FE}	$I_C = 100A, V_{CE} = 2V$	75	—	—	—
Diode Forward Voltage	V_{FM}	$I_{FM} = 100A$	—	—	1.75	V
Collector-Emitter Saturation Voltage	$V_{CE(SAT)}$	$I_C = 100A, I_B = 1.3A$	—	—	2.0	V
Base-Emitter Saturation Voltage	$V_{BE(SAT)}$	$I_C = 100A, I_B = 1.3A$	—	—	2.5	V
Resistive Load	Turn On	t_{on}	—	—	2.0	μs
	Storage Time	t_s	—	—	12	μs
Switch Times	Fall Time	t_f	—	—	3.0	μs
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	—	—	.2	$^\circ\text{C/W}$
Thermal Resistance, Junction to Case	$R_{\theta JC}$	Diode Part	—	—	0.6	$^\circ\text{C/W}$

KT224510
Split-Dual Darlington Transistor Module
 100 Amperes/600 Volts

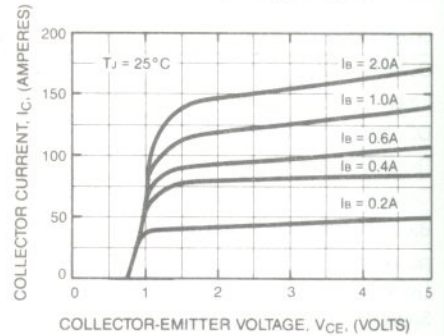
DC CURRENT GAIN (TYPICAL)



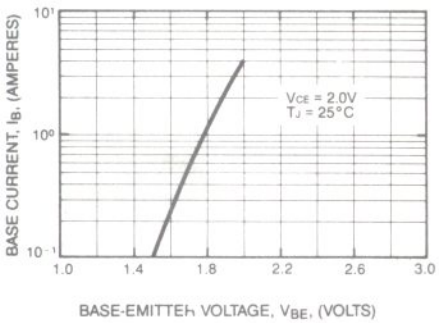
SATURATION VOLTAGE (TYPICAL)



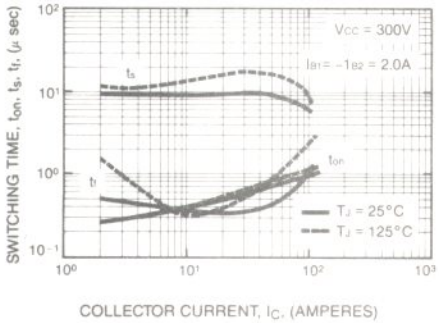
COMMON EMITTER OUTPUT CHARACTERISTICS (TYPICAL)



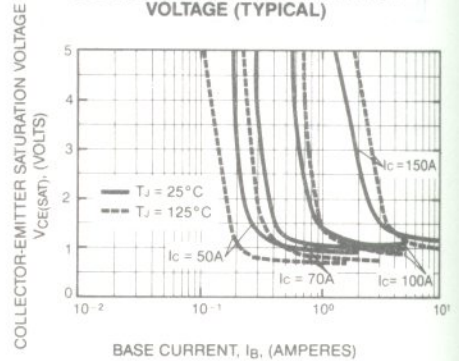
COMMON EMITTER INPUT CHARACTERISTICS (TYPICAL)



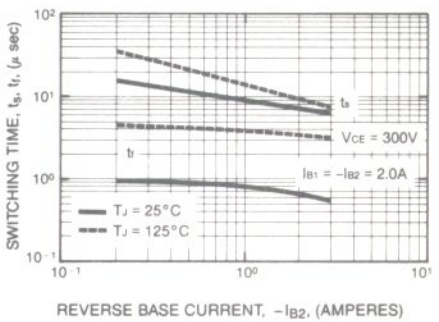
SWITCHING CHARACTERISTICS (TYPICAL)



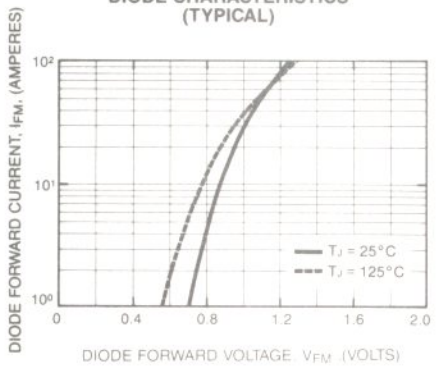
COLLECTOR-EMITTER SATURATION VOLTAGE (TYPICAL)



SWITCHING TIME VS. BASE CURRENT (TYPICAL)



DIODE CHARACTERISTICS (TYPICAL)



REVERSE RECOVERY CHARACTERISTICS OF FREE-WHEEL DIODE (TYPICAL)

