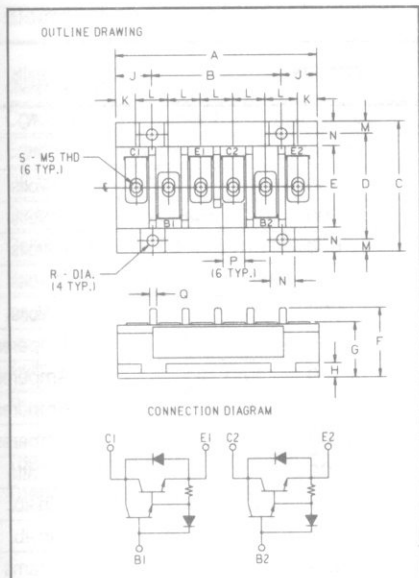


Mitsubishi QM150DX-H was sold in USA as KT224515
the parts are technically 100 % identical

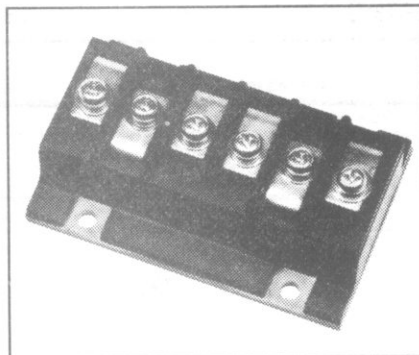
KT224515

Split-Dual Darlington Transistor Module 150 Amperes/600 Volts



600 Volt KT224515
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



KT224515
Split-Dual Darlington
Transistor Module
150 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. KT224515 is a 450 $V_{CE0(SUS)}$ (600 V_{CEV}), 150 Ampere Split-Dual Darlington Module.

Type	$V_{CE0(SUS)}$ Volts ($\times 10$)	Current Rating Amperes ($\times 10$)
KT22	45	15



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

KT224515

Split-Dual Darlington Transistor Module

150 Amperes/600 Volts

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

	Symbol	KT224515	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	$V_{CEQ(SUS)}$	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	150	Amperes
Diode Forward Current	I_{FM}	150	Amperes
Continuous Base Current	I_B	9	Amperes
Diode Surge Current	I_{FSM}	1500	Amperes
Power Dissipation, Each Transistor	P_T	690	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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KT224515
Split-Dual Darlington Transistor Module
150 Amperes/600 Volts

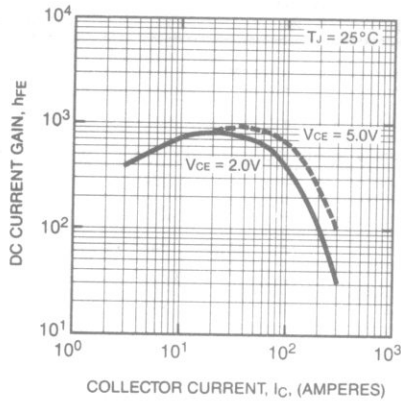
Electrical and Mechanical Characteristics $T_J = 25^\circ\text{C}$ unless otherwise specified

Characteristics		Symbol	Test Conditions	Min.	KT224515 Typ.	Max.	Units
Collector Cutoff Current		I_{CEV}	$V_{CE} = 600V, V_{BE} = -2V$	—	—	2	mA
Emitter Cutoff Current		I_{EBO}	$V_{EB} = 7V$	—	—	350	mA
DC Current Gain		h_{FE}	$I_C = 150A, V_{CE} = 5V$	100	—	—	—
Diode Forward Voltage		V_{FM}	$I_{FM} = 150A$	—	—	1.85	V
Collector-Emitter Saturation Voltage		$V_{CE(SAT)}$	$I_C = 150A, I_B = 3.0A$	—	—	2.0	V
Base-Emitter Saturation Voltage		$V_{BE(SAT)}$	$I_C = 150A, I_B = 3.0A$	—	—	2.5	V
Resistive Load Switch Times	Turn On	t_{on}	$V_{CC} = 300V$	—	—	2.5	μs
	Storage Time	t_s	$I_C = 150A$	—	—	12	μs
	Fall Time	t_f	$I_{B1} = -I_{B2} = 3.0A$	—	—	3.0	μs
Thermal Resistance, Case to Sink Lubricated		$R_{\theta CS}$	Per Half Module	—	—	0.1	$^\circ\text{C/W}$
Thermal Resistance, Junction to Case		$R_{\theta JC}$	Transistor Part	—	—	0.18	$^\circ\text{C/W}$
Thermal Resistance, Junction to Case		$R_{\theta JC}$	Diode Part	—	—	0.6	$^\circ\text{C/W}$

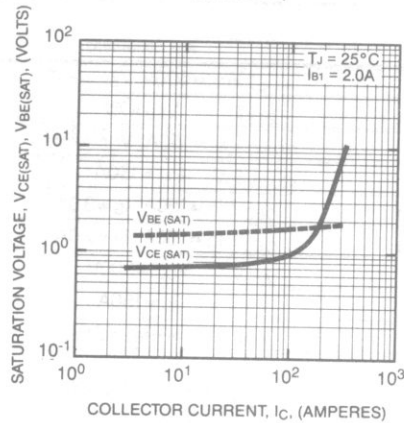
KT224515

Split-Dual Darlington Transistor Module
150 Amperes/600 Volts

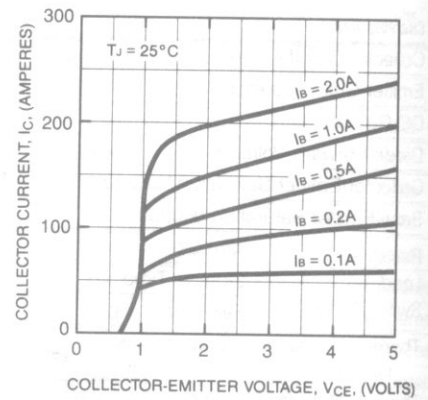
DC CURRENT GAIN
(TYPICAL)



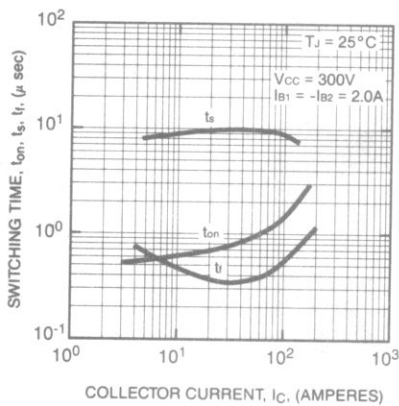
SATURATION VOLTAGE
(TYPICAL)



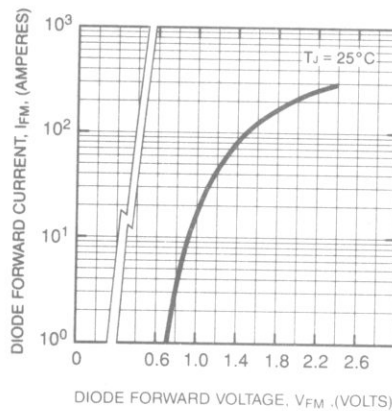
COMMON EMITTER OUTPUT
CHARACTERISTICS (TYPICAL)



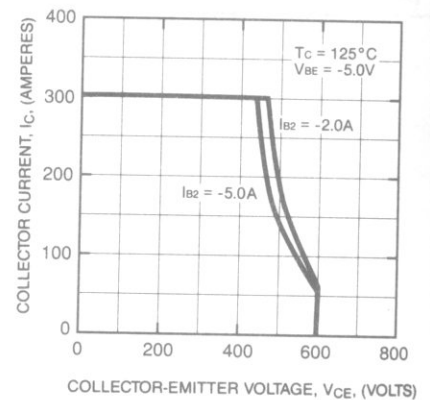
SWITCHING CHARACTERISTICS
(TYPICAL)



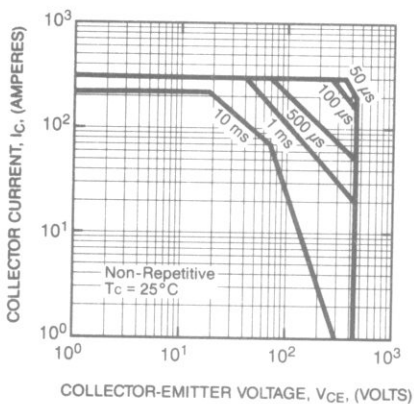
DIODE CHARACTERISTICS
(TYPICAL)



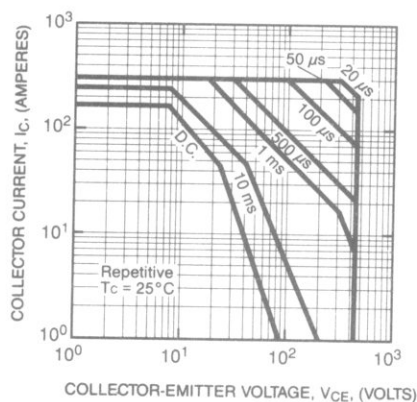
REVERSE BIAS SAFE OPERATING AREA
(R.B.S.O.A.)



FORWARD BIAS SAFE OPERATING AREA
(S.O.A.)



FORWARD BIAS SAFE OPERATING AREA
(S.O.A.)



DERATING FACTOR OF
SAFE OPERATING AREA (S.O.A.)

