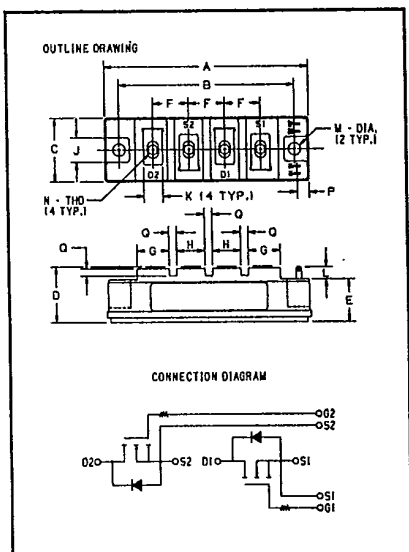
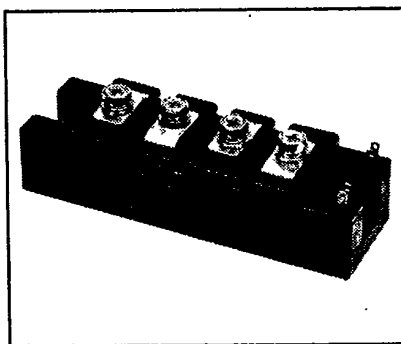



JT220510 Tentative

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

**Split-Dual FETMOD™
Power Module
100 Amperes/50 Volts**

**50 Volts JT220510
Outline Drawing**

Dimension	Inches	Millimeters
A	4.252 Max.	108 Max.
B	3.661 ± .012	93 ± 0.3
C	1.338 Max.	34 Max.
D	1.181 Max.	30 Max.
E	.906	23
F	.748	19
G	.650	16.5
H	.591	15
J	.512	13
K	.394	10
L	.256 Min.	6.5 Min.
M	.256 Dia.	6.5 Dia.
N	M5 Metric	M5
P	.197	5
Q	.157	4


**JT220510
Split-Dual FETMOD™
Power Module
100 Amperes/50 Volts**
Description

Powerex Split-Dual FETMOD™ Power Modules are designed for use in applications requiring high-frequency switching and low loss control. The modules are isolated, consisting of two MOSFETs with internal series gate resistors and independent connections.

Features:

- ☐ Isolated Mounting
- ☐ Vertical DMOS Chips
- ☐ High Speed Body Diode
- ☐ Low Drive Requirement
- ☐ Low $R_{DS(on)}$
- ☐ Internal Series Gate Resistors
- ☐ Fast Switching

Applications:

- ☐ Choppers
- ☐ UPS Inverters
- ☐ Switch Mode Power Supply
- ☐ PWM Regulators
- ☐ Welding Power Supply

Ordering Information

Example: Select the complete eight digit module part number you desire from the table - i.e. JT220510 is a 50 Volt, 100 Ampere Split-Dual FETMOD™ Module.

Type	Voss Volts (×10)	Current Rating Amperes (×10)
JT22	05	10



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JT220510
Split-Dual FETMOD™ Power Module
 100 Amperes/50 Volts

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

	Symbol	JT220510	Units
Junction Temperature	T_J	-55 to 150	$^\circ\text{C}$
Storage Temperature	T_{STG}	-40 to 125	$^\circ\text{C}$
Drain Source Voltage	V_{DS}	50	Volts
Gate-Source Voltage	V_{GS}	± 20	Volts
Continuous Drain Current	I_D	100	Amperes
Continuous Source Current	I_S	100	Amperes
Pulsed Drain Current Repetitive	I_{DM}	200	Amperes
Power Dissipation	P_T	310	Watts
Max. Mounting Torque Terminal Screws (M5)	—	17	in.-lb.
Max. Mounting Torque Mounting Screws (M6)	—	26	in.-lb.
Module Weight	—	250	Grams
V isolation	V_{RMS}	2500	Volts



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JT220510

Split-Dual FETMOD™ Power Module

100 Amperes/50 Volts

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

Characteristics	Symbol	Test Conditions	Min.	JT220510 Typ.	Max.	Units
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = V_{DSS}, V_{GS} = 0V$	—	—	1	mA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 0.8 V_{DSS}, V_{GS} = 0V$ $T_J = 150^\circ\text{C}$	—	—	4	mA
Gate Source Threshold	$V_{GS(th)}$	$I_D = 1 \text{ mA}, V_{DS} = 10V$	1.5	2.5	4	Volts
Gate Source Leakage	$\pm I_{GSS}$	$\pm V_{GS} = \pm 20V$ $V_{DS} = 0V$	—	—	0.5	μA
Drain Source On State Resistance*	$R_{DS(on)}$	$V_{GS} = 15V, I_D = 100A$ $V_{GS} = 15V, I_D = 100A, T_J = 150^\circ\text{C}$	—	—	15 25	m Ω m Ω
Drain Source On State Voltage*	$V_{DS(on)}$	$V_{GS} = 15V, I_D = 100A$ $V_{GS} = 15V, I_D = 100A, T_J = 150^\circ\text{C}$	—	—	1.5 2.5	Volts Volts
Thermal Resistance, Case to Sink Lubricated	$R_{\theta CS}$	—	—	—	—	$^\circ\text{C/W}$
Thermal Resistance, Junction to Case	$R_{\theta JC}$	Per Device	—	—	0.4	$^\circ\text{C/W}$

* Pulse Test: Pulse width $\leq 10\mu\text{s}$



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JT220510

Split-Dual FETMOD™ Power Module
100 Amperes/50 VoltsSource-Drain Diode Characteristics $T_J = 25^\circ\text{C}$ unless otherwise specified

Characteristics	Symbol	Test Conditions	Min.	JT220510 Typ.	Max.	Units
Source-Drain Voltage	V_{SD}	$I_S = 100\text{A}$, $V_{GS} = 0\text{V}$	—	—	—	Volts
Reverse Recovery Time	t_{rr}	$I_S = 100\text{A}$, $dI_S/dt = 200\text{A}/\mu\text{s}$, $V_{GS} = 0\text{V}$	—	—	2.5 500	 μs

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

Characteristics	Symbol	Test Conditions	Min.	JT220510 Typ.	Max.	Units
Forward Transconductance	g_{fs}	$I_D = 50\text{A}$, $V_{DS} = 10\text{V}$ $t_w \leq 300\mu\text{s}$, Duty = 2%	10	20	—	mhos
Input Capacitance	C_{iss}	$V_{GS} = 0\text{V}$, $V_{DS} = 10\text{V}$, $f = 1\text{ MHz}$	—	—	10	nf
Output Capacitance	C_{oss}		—	—	8	nf
Reverse Transfer Capacitance	C_{rss}		—	—	6	nf
Total Gate Charge	Q_G	$V_{DD} = 0.8 V_{DSS}$ $V_{GS} = 10\text{V}$, $I_D = 100\text{A}$	—	—	—	nC
Turn On Time**	t_{on}	$V_{DD} = 0.5 V_{DSS}$ $I_D = 100\text{A}$, $V_{GS} = 15\text{V}$ $R_{GEN} = R_{GS} = 3.3\Omega$	—	—	350	ns
Turn Off Time**	t_{off}		—	—	350	ns

** Turn on Time (t_{on}) = Turn on Delay ($t_{d(on)}$) + Rise Time (t_r)
 Turn-off Time (t_{off}) = Turn off Delay ($t_{d(off)}$) + Fall Time (t_f)

This specification is tentative;
 therefore, performance curves are not
 included. Please contact the Powerex
 sales representative nearest you for
 further information.