

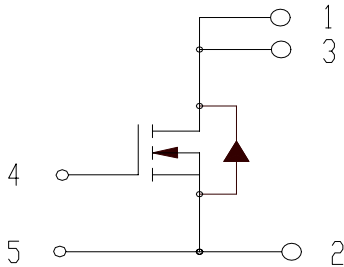
QJS0512001
Single MOSFET
120 Amperes / 500 Volts

Description:

Powerex Single MOSFET Module is designed specially for customer applications. The module is isolated for easy mounting with other components on a common heat sink.

Features:

- Typical $R_{DS(on)} = 0.022\Omega$
- High dv/dt capabilities
- (2) STY60NM50 chips
- Isolated Mounting
- Isolation Material - DBC AlN
- Copper Baseplate



CONNECTION DIAGRAM

Dimensions	Inches	Millimeters
A	3.70	94
B	1.34	34
C	1.18	30
D	3.15	80
E	0.67	17
F	0.28	6.99
G	0.67	17.1
H	0.91	23
J	0.91	23
K	M6X1.0	M6X1.0
L	DIA 0.256	DIA. 6.5

Maximum Ratings, T_j=25°C unless otherwise specified

Ratings	Symbol	QJS0512001	Units
Drain-source Voltage	V _{DS}	500	Volts
Drain-gate Voltage	V _{DGR}	500	Volts
Gate-source Voltage	V _{GS}	±30	Volts
Drain Current (continuous) at T _C = 25°C	I _D	120	Amperes
Drain Current (continuous) at T _C = 100°C	I _D	75.6	Amperes
Junction Temperature	T _J	-40 to 150	°C
Storage Temperature	T _{stg}	-40 to 125	°C
Mounting Torque, M6 Terminal Screws	-	26	in-lb
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Module Weight (Typical)	-	220	Grams
V Isolation	V _{RMS}	2500	Volts

Static Electrical Characteristics, T_j=25°C unless otherwise specified

Characteristic	Symbol	Test Conditions	Min.	Typ.	Max.	Units
Drain-source Breakdown Voltage	V _{(BR)DSS}	I _D =500μA, V _{GS} =0	500	-	-	Volts
Zero Gate Voltage Drain Current	I _{DSS}	V _{GS} =0, V _{DS} =500V	-	-	20	μA
Zero Gate Voltage Drain Current	I _{DSS}	V _{GS} =0, V _{DS} =500V, T _C =125°C	-	-	200	μA
Gate Leakage Current	I _{GSS}	V _{DS} =0, V _{GS} =±20V	-	-	±20	μA
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =500μA	3.0	4.0	5.0	Volts
Drain-source On Resistance	R _{DS(on)}	I _D =60A, V _{GS} =10V	-	0.022	0.025	Ohm
Total Gate Charge	Q _g	V _{DD} =400V I _D =120A, V _{GS} =10V	-	380	532	nC
Forward On Voltage Source-drain Diode	V _{SD}	I _{SD} =120A, V _{GS} =0	-	-	1.5	Volts

Thermal and Mechanical Characteristics, T_j=25°C unless otherwise specified

Characteristic	Symbol	Test Conditions	Min.	Typ.	Max.	Units
Thermal Resistance, Junction to Case	R _{θJC}	MOSFET	-	0.1	TBD	°C/W
Contact Thermal Resistance, Thermal Grease Applied	R _{θCF}	Module	-	-	0.075	°C/W