

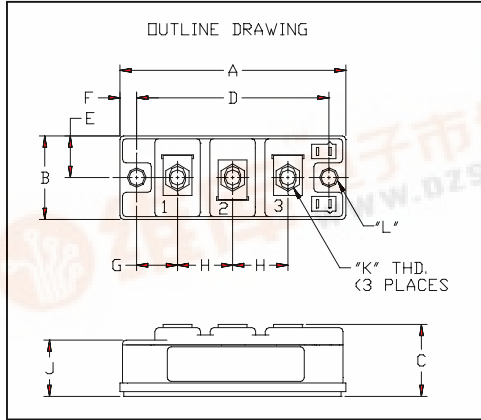


Preliminary

QIC0620003
200 Amp/600 Volts

Powerex, Inc., 200 Hillis Street, Youngwood, Pennsylvania 15697-1800 (724) 925-7272

Dual IGBT Common Emitter Module
200 Amp/600 Volts



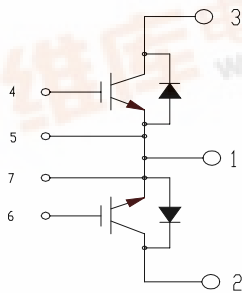
QIC0620003
Dual IGBT Module
Common Emitter
200 Amperes / 600 Volts

Description:

Powerex Fast Recovery Diode Modules are designed for use in applications requiring fast switching. The modules are isolated for easy mounting with other components on a common heatsink.

Features:

- Isolated Mounting
- Isolation Material - DBC Alumina
- Low Drive Power
- Internal Series Gate Resistors
- Super-Fast FWD (110ns)
- Copper Baseplate
- 2500 V isolating voltage



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



Preliminary

QIC0620003
200 Amp/600 Volts

Powerex, Inc., 200 Hillis Street, Youngwood, Pennsylvania 15697-1800 (724) 925-7272

Dual IGBT Common Emitter Module
200 Amp/600 Volts

Maximum Ratings, Tj=25°C unless otherwise specified

Ratings	Symbol	QIC0620003	Units
Collector Emitter Voltage	V _{CES}	600	Volts
Gate Emitter Voltage	V _{GES}	±20	Volts
Collector Current	I _C	200	Amperes
Peak Collector Current	I _{CM}	400*	Amperes
Diode Forward Current	I _F	50	Amperes
Diode Forward Surge Current	I _{FM}	500	Amperes
Junction Temperature	T _j	-40 to 150	°C
Storage Temperature	T _{stg}	-40 to 125	°C
Mounting Torque, M6 Terminal Screws	-	40	In-lb
Mounting Torque, M6 Mounting Screws	-	40	In-lb
Module Weight (Typical)	-	200	Grams
V Isolation	V _{RMS}	2500	Volts

*Pulse width and repetition rate should be such that device junction temperature does not exceed the device rating.

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

Characteristic	Symbol	Test Conditions	Min.	Typ.	Max.	Units
Collector Cutoff Current	I _{CES}	V _{CE} =V _{CES} V _{GE} =0V	-	-	1.0	mA
Gate Leakage Current	I _{GES}	V _{GE} =V _{GES} V _{CE} =0V	-	-	0.5	µA
Gate-Emitter Threshold Voltage	V _{GE(th)}	I _C =20mA, V _{CE} =10V	4.5	6.0	7.5	Volts
Collector-Emitter Saturation Voltage	V _{CE(sat)}	I _C =200A, V _{GE} =15V	-	2.1	2.8	Volts
		I _C =200A, V _{GE} =15V, T _j =150°C	-	2.15	-	Volts
Total Gate Charge	Q _G	V _{CC} =300V, I _C =200A, V _{GS} =15V	-	600	-	nC
Diode Forward Voltage	V _{FM}	I _F =50A, V _{GS} =0V	-	-	2.8	Volts

Dynamic Electrical Characteristics, Tj=25°C unless otherwise specified

Characteristic	Symbol	Test Conditions	Min.	Typ.	Max.	Units
Input Capacitance	C _{ies}	V _{GE} =0V	-	-	20	nF
Output Capacitance	C _{oes}	V _{CE} =10V	-	-	7	nF
Reverse Transfer Capacitance	C _{res}	f=1MHz	-	-	4	ns
Turn on Delay time	t _{d(on)}	V _{CC} =300V	-	-	200	ns
Rise Time	t _r	I _C =200A	-	-	550	ns
Turn- off Delay Time	t _{d(off)}	V _{GE1} =V _{GE2} =15V	-	-	300	ns
Fall Time	t _f	R _G =3.1Ω	-	-	300	ns
Diode Reverse Recovery Time	t _{rr}	I _F =50A	-	-	110	ns
Diode Reverse Recovery Charge	Q _{rr}	di _F /dt=-100A/µS	-	0.37	-	µC

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

Characteristic	Symbol	Test Conditions	Min.	Typ.	Max.	Units
Thermal Resistance, Junction to Case	R _{θJC}	Per IGBT	-	0.14	TBD	°C/W
Thermal Resistance, Junction to Case	R _{θJC}	Per Diode	-	0.70	TBD	°C/W
Contact Thermal Resistance, Thermal Grease Applied	R _{θCF}	Per Module	-	-	0.075	°C/W