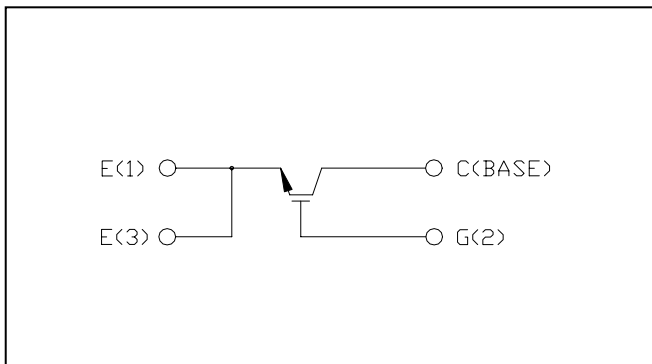


**Description:**  
Powerex Single Non-Isolated Discrete is designed specially for customer high voltage applications

### Schematic



### Features:

- Low Drive Requirement
- Low  $V_{CE(sat)}$
- Molybdenum Mounting Plate

**Maximum Ratings, T<sub>j</sub>=25°C unless otherwise specified**

Ratings	Symbol	QIS4506001	Units
Collector Emitter Voltage	V <sub>CEs</sub>	4500	Volts
Gate Emitter Voltage	V <sub>GES</sub>	±20	Volts
Collector Current (Continuous)	I <sub>C</sub>	60	Amperes
Peak Collector Current (Pulsed)	I <sub>CM</sub>	120*	Amperes
Junction Temperature	T <sub>j</sub>	-55 to 150	°C
Storage Temperature	T <sub>stg</sub>	-55 to 125	°C
Mounting Torque, M5 Mounting Screws	-	30	In-lb
Weight (Typical)	-	21	Grams

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

**Static Electrical Characteristics, T<sub>j</sub>=25°C unless otherwise specified**

Characteristic	Symbol	Test Conditions	Min.	Typ.	Max.	Units
Collector Cutoff Current	I <sub>CEs</sub>	V <sub>CE</sub> =V <sub>CEs</sub> V <sub>GE</sub> =0V	-	-	1.0	mA
Gate Leakage Current	I <sub>GES</sub>	V <sub>GE</sub> =V <sub>GES</sub> V <sub>CE</sub> =0V	-	-	0.5	µA
Gate-Emitter Threshold Voltage	V <sub>GE(th)</sub>	I <sub>C</sub> =7mA, V <sub>CE</sub> =10V	4.5	6.0	7.5	Volts
Collector-Emitter Saturation Voltage	V <sub>CE(sat)</sub>	I <sub>C</sub> =67A, V <sub>GE</sub> =15V	-	3.0	3.9*	Volts
		I <sub>C</sub> =67A, V <sub>GE</sub> =15V, T <sub>j</sub> =125°C	-	3.6	-	Volts
Total Gate Charge	Q <sub>G</sub>	V <sub>CC</sub> =2250V, I <sub>C</sub> =67A, V <sub>GS</sub> =15V	-	800	-	nC

\*Pulse width and repetition rate should be such that device junction temperature rise is negligible.

**Dynamic Electrical Characteristics, T<sub>j</sub>=25°C unless otherwise specified**

Characteristic	Symbol	Test Conditions	Min.	Typ.	Max.	Units
Input Capacitance	C <sub>ies</sub>	V <sub>GE</sub> =0V	-	10	-	nF
Output Capacitance	C <sub>oes</sub>	V <sub>CE</sub> =10V	-	.7	-	nF
Reverse Transfer Capacitance	C <sub>res</sub>	f=1MHz	-	.2	-	nF
Turn on Delay time	t <sub>d(on)</sub>	V <sub>CC</sub> =2250V	-	-	2.4	µs
Rise Time	t <sub>r</sub>	I <sub>C</sub> =67A	-	-	2.4	µs
Turn- off Delay Time	t <sub>d(off)</sub>	V <sub>GE1</sub> =V <sub>GE2</sub> =15V	-	-	6.0	µs
Fall Time	t <sub>f</sub>	R <sub>G</sub> =120Ω	-	-	1.2	µs

**Thermal and Mechanical Characteristics, T<sub>j</sub>=25°C unless otherwise specified**

Characteristic	Symbol	Test Conditions	Min.	Typ.	Max.	Units
Thermal Resistance, Junction to Case	R <sub>θJC</sub>	IGBT	-	0.05	-	°C/W
Thermal Resistance, Case to Sink	R <sub>θCS</sub>	IGBT	-	TBD	-	°C/W