

IGBT Module PSII 100/06*

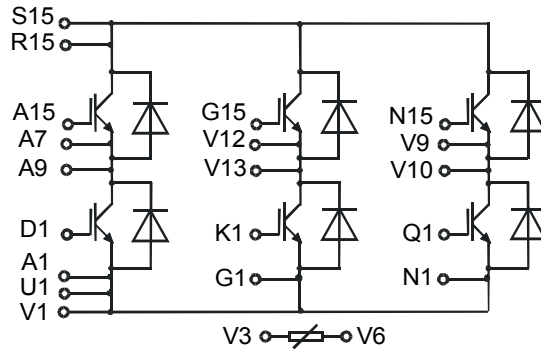
$$I_{C80} = 80 \text{ A}$$

$$V_{CES} = 600 \text{ V}$$

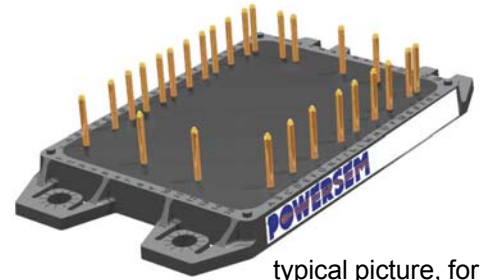
$$V_{CE(sat)typ.} = 2.3 \text{ V}$$

Short Circuit SOA Capability
Square RBSOA

Preliminary Data Sheet



ECO-TOP™ 1



typical picture, for pin configuration see outline drawing

IGBTs

Symbol	Conditions	Maximum Ratings	
V_{CES}	$T_{VJ} = 25^{\circ}\text{C to } 150^{\circ}\text{C}$	600	V
V_{GES}		± 20	V
I_{C25}	$T_C = 25^{\circ}\text{C}$	120	A
I_{C80}	$T_C = 80^{\circ}\text{C}$	80	A
I_{CM}	$V_{GE} = \pm 15 \text{ V}; R_G = 2.2 \Omega; T_{VJ} = 125^{\circ}\text{C}$ RBSOA, Clamped inductive load; $L = 100 \mu\text{H}$	200	A
V_{CEK}		360	V
t_{SC} (SCSOA)	$V_{CE} = V_{CES}; V_{GE} = \pm 15 \text{ V}; R_G = 2.2 \Omega; T_{VJ} = 125^{\circ}\text{C}$ non-repetitive	10	μs
P_{tot}	$T_C = 25^{\circ}\text{C}$	379	W

*NTC optional

Features

- Package with DCB ceramic base plate
- Isolation voltage 3000 V~
- Planar glass passivated chips
- Low forward voltage drop
- Leads suitable for PC board soldering
- UL Release applied

Applications

- AC and DC motor control
- AC servo and robot drives
- Power supplies
- Welding inverters

Advantages

- Easy to mount with four screws
- Space and weight savings
- Improved temperature and power cycling capability
- High power density
- Small and light weight
- Leads with expansion bend for stress relief

Caution: These Devices are sensitive to electrostatic discharge. Users should observe proper ESD handling precautions.

Symbol	Conditions	Characteristic Values ($T_{VJ} = 25^{\circ}\text{C}$, unless otherwise specified)			
		min.	typ.	max.	
$V_{CE(sat)}$	$I_C = 130 \text{ A}; V_{GE} = 15 \text{ V}; T_{VJ} = 25^{\circ}\text{C}$ $T_{VJ} = 125^{\circ}\text{C}$		2.3 2.6	2.9 V V	
$V_{GE(th)}$	$I_C = 1.5 \text{ mA}; V_{GE} = V_{CE}$	4.5		6.5 V	
I_{CES}	$V_{CE} = V_{CES}; V_{GE} = 0 \text{ V}; T_{VJ} = 25^{\circ}\text{C}$ $T_{VJ} = 125^{\circ}\text{C}$			1.2 mA 7.5 mA	
I_{GES}	$V_{CE} = 0 \text{ V}; V_{GE} = \pm 20 \text{ V}$			400 nA	
$t_{d(on)}$ t_r $t_{d(off)}$ t_f E_{on} E_{off}	Inductive load, $T_{VJ} = 125^{\circ}\text{C}$ $V_{CE} = 300 \text{ V}; I_C = 80 \text{ A}$ $V_{GE} = 15/0 \text{ V}; R_G = 2.2 \Omega$		25 11 150 30 0.8 2.3	ns ns ns ns mJ mJ	
C_{ies}		$V_{CE} = 25 \text{ V}; V_{GE} = 0 \text{ V}; f = 1 \text{ MHz}$		4.2	nF
R_{thJC} R_{thJH}		(per IGBT) with heatsink compound (0.42 K/m.K; 50 μm)	0.66		0.33 K/W K/W

Reverse diodes (FRED)

Symbol	Conditions	Maximum Ratings	
I_{F25}	$T_C = 25^\circ\text{C}$	130	A
I_{F80}	$T_C = 80^\circ\text{C}$	80	A

Symbol	Conditions	Characteristic Values		
		min.	typ.	max.
V_F	$I_F = 80\text{ A}; T_{VJ} = 25^\circ\text{C}$ $T_{VJ} = 125^\circ\text{C}$	1.85	2.06	V
		1.40		V
I_{RM} t_{rr}	$I_F = 60\text{ A}; di_F/dt = 500\text{ A}/\mu\text{s}; T_{VJ} = 125^\circ\text{C}$ $V_R = 300\text{ V}; V_{GE} = 0\text{ V}$	28		A
		100		ns
R_{thJC} R_{thJH}	with heatsink compound (0.42 K/m.K; 50 μm)	1.32	0.66	K/W K/W

Temperature Sensor NTC

Symbol	Conditions	Characteristic Values		
		min.	typ.	max.
R_{25}	$T = 25^\circ\text{C}$	4.75	5.0	5.25 k Ω
$B_{25/50}$			3375	K

Module

Symbol	Conditions	Maximum Ratings	
T_{VJ}		-40...+125	$^\circ\text{C}$
T_{stg}		-40...+150	$^\circ\text{C}$
V_{ISOL}	$I_{ISOL} \leq 1\text{ mA}; 50/60\text{ Hz}$	3000	V~
M_d	Mounting torque (M5)	3	Nm
		26	lb.in.
a	Max. allowable acceleration	50	m/s^2

Symbol	Conditions	Characteristic Values		
		min.	typ.	max.
d_s	Creepage distance on surface (Pin to heatsink)	11.2		mm
d_A	Strike distance in air (Pin to heatsink)	11.2		mm
Weight		86		g

Data according to IEC 60747 and refer to a single transistor or diode unless otherwise stated.

Package style and outline

Dimensions in mm (1mm = 0.0394")

