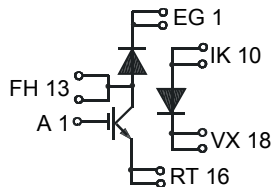


### IGBT Module

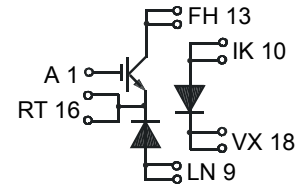
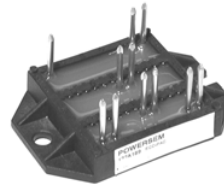
**PSSI 45D/06**  
**PSSI 46D/06**

$I_{C80} = 48 \text{ A}$   
 $V_{CES} = 600 \text{ V}$   
 $V_{CE(sat)typ.} = 2.3 \text{ V}$

Preliminary Data Sheet



**PSSI 45D/06**



**PSSI 46D/06**

### IGBTs

Symbol	Conditions	Maximum Ratings	
$V_{CES}$	$T_{VJ} = 25^{\circ}\text{C to } 150^{\circ}\text{C}$	600	V
$V_{GES}$		$\pm 20$	V
$I_{C25}$	$T_C = 25^{\circ}\text{C}$	69	A
$I_{C80}$	$T_C = 80^{\circ}\text{C}$	48	A
$I_{CM}$ $V_{CEK}$	$V_{GE} = \pm 15 \text{ V}; R_G = 22 \Omega; T_{VJ} = 125^{\circ}\text{C}$ RBSOA, Clamped inductive load; $L = 100 \mu\text{H}$	100	A
		$V_{CES}$	
$t_{SC}$ (SCSOA)	$V_{CE} = V_{CES}; V_{GE} = \pm 15 \text{ V}; R_G = 22 \Omega; T_{VJ} = 125^{\circ}\text{C}$ non-repetitive	10	$\mu\text{s}$
$P_{tot}$	$T_C = 25^{\circ}\text{C}$	208	W

### 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 registered, E 148688

### Advantages

- Easy to mount with two screws
- Space and weight savings
- Improved temperature and power cycling capability
- High power density
- Small and light weight

Symbol	Conditions	Characteristic Values ( $T_{VJ} = 25^{\circ}\text{C}$ , unless otherwise specified)			
		min.	typ.	max.	
$V_{CE(sat)}$	$I_C = 75 \text{ A}; V_{GE} = 15 \text{ V}; T_{VJ} = 25^{\circ}\text{C}$ $T_{VJ} = 125^{\circ}\text{C}$		2.3 2.8	V V	
$V_{GE(th)}$	$I_C = 1 \text{ mA}; V_{GE} = V_{CE}$	4.5		6.5 V	
$I_{CES}$	$V_{CE} = V_{CES}; V_{GE} = 0 \text{ V}; T_{VJ} = 25^{\circ}\text{C}$ $T_{VJ} = 125^{\circ}\text{C}$			0.8 mA 4.4 mA	
$I_{GES}$	$V_{CE} = 0 \text{ V}; V_{GE} = \pm 20 \text{ V}$			100 nA	
$t_{d(on)}$ $t_r$ $t_{d(off)}$ $t_f$ $E_{on}$ $E_{off}$	Inductive load, $T_{VJ} = 125^{\circ}\text{C}$ $V_{CE} = 300 \text{ V}; I_C = 40 \text{ A}$ $V_{GE} = 15/0 \text{ V}; R_G = 22 \Omega$		50 55 300 30	ns ns ns ns	
				1.8 1.4	mJ mJ
$C_{ies}$		$V_{CE} = 25 \text{ V}; V_{GE} = 0 \text{ V}; f = 1 \text{ MHz}$		2.8	nF
$R_{thJC}$ $R_{thJH}$		(per IGBT) with heatsink compound (0.42 K/m.K; 50 $\mu\text{m}$ )		1.2	0.6 K/W K/W

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

### Reverse diodes (FRED)

Symbol	Conditions	Maximum Ratings	
$I_{F25}$	$T_C = 25^\circ\text{C}$	134	A
$I_{F80}$	$T_C = 80^\circ\text{C}$	82	A

Symbol	Conditions	Characteristic Values		
		min.	typ.	max.
$V_F$	$I_F = 60\text{ A}; T_{VJ} = 25^\circ\text{C}$ $T_{VJ} = 125^\circ\text{C}$	1.78	1.99	V
		1.33		V
$I_{RM}$	$I_F = 60\text{ A}; di_F/dt = 500\text{ A}/\mu\text{s}; T_{VJ} = 125^\circ\text{C}$	28		A
$t_{rr}$	$V_R = 300\text{ V}; V_{GE} = 0\text{ V}$	100		ns
$R_{thJC}$			0.66	K/W
$R_{thJH}$	with heatsink compound (0.42 K/m.K; 50 $\mu\text{m}$ )	1.32		K/W

### Module

Symbol	Conditions	Maximum Ratings	
$T_{VJ}$		-40...+150	$^\circ\text{C}$
$T_{stg}$		-40...+150	$^\circ\text{C}$
$V_{ISOL}$	$I_{ISOL} \leq 1\text{ mA}; 50/60\text{ Hz}$	3000	V~
$M_d$	Mounting torque (M4)	1.5 - 2.0	Nm
		14 - 18	lb.in.
$a$	Max. allowable acceleration	50	$\text{m/s}^2$

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
<b>Weight</b>		24		g

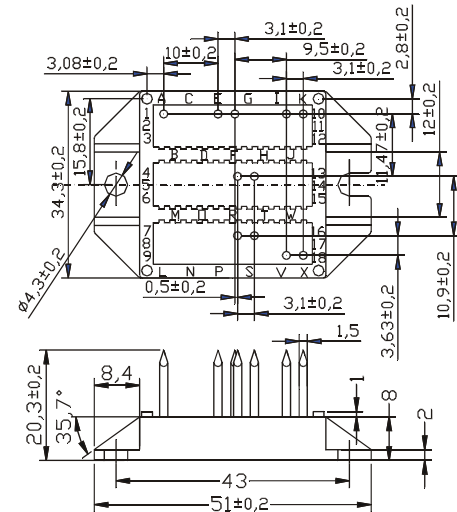
### Standard Diode

Symbol	Test Conditions	Characteristic Value	
$I_{FAVM}$	rectangular, $T_J = 150^\circ\text{C}$	53	A
$V_F$	$I_F = 80\text{ A}, T_J = 25^\circ\text{C}$	1.2	V
$V_{RRM}$		1200	V
$I_R$	$T_J = 25^\circ\text{C}$	50	$\mu\text{A}$
	$T_J = 150^\circ\text{C}$	4	mA
$I_{FSM}$	$T_{VJ} = 45^\circ\text{C}$ $t = 10\text{ ms}$ (50 Hz), sine	800	A
	$V_R = 0$ $t = 8.3\text{ ms}$ (60 Hz), sine	880	A
	$T_{VJ} = T_{VJM}$ $t = 10\text{ ms}$ (50 Hz), sine	720	A
	$V_R = 0$ $t = 8.3\text{ ms}$ (60 Hz), sine	790	A
$V_{TO}$	For power-loss calculations only ( $T_{VJ} = T_{VJM}$ )	0.8	V
$r_T$		4.8	$\text{m}\Omega$
$R_{thJC}$	Standard Diode	tbid	K/W

### Package style and outline

Dimensions in mm (1mm = 0.0394")

#### PSSI 45D/06



#### PSSI 46D/06

