POWERSEM

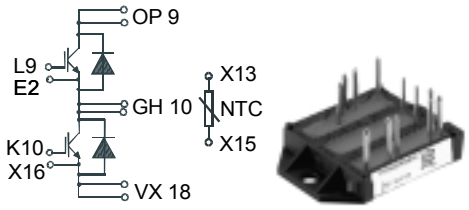
ECO-PAC™ 2

IGBT Module

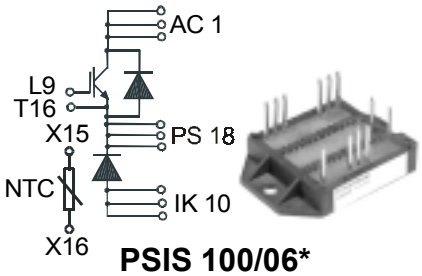
Preliminary Data Sheet

PSIG 100/06
PSI 100/06*
PSIS 100/06*
PSSI 100/06*

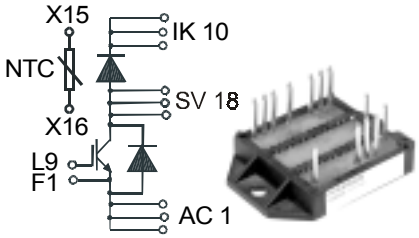
I_{C25} = 93 A
V_{CES} = 600 V
$V_{CE(sat)typ.}$ = 2.4 V



PSI 100/06*



PSIS 100/06*

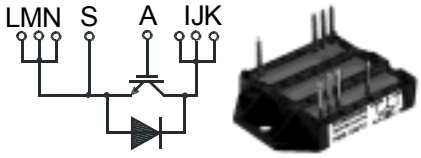


PSSI 100/06*

IGBTs

Symbol	Conditions	Maximum Ratings	
V_{CES}	T_{VJ} = 25°C to 150°C	600	V
V_{GES}		± 20	V
I_{C25}	T_C = 25°C	93	A
I_{C80}	T_C = 80°C	63	A
I_{CM}	V_{GE} = ±15 V; R_G = 15 Ω; T_{VJ} = 125°C	150	A
V_{CEK}	RBSOA, Clamped inductive load; L = 100 µH	V_{CES}	
t_{SC} (SCSOA)	V_{CE} = V_{CES}; V_{GE} = ±15 V; R_G = 15 Ω; T_{VJ} = 125°C non-repetitive	10	µs
P_{tot}	T_C = 25°C	294	W

Symbol	Conditions	Characteristic Values (T_{VJ} = 25°C, unless otherwise specified) min.	typ.	max.	
$V_{CE(sat)}$	I_C = 100 A; V_{GE} = 15 V; T_{VJ} = 25°C		2.4	2.8	V
	T_{VJ} = 125°C		2.8		V
$V_{GE(th)}$	I_C = 1.5 mA; V_{GE} = V_{CE}	4.5		6.5	V
I_{CES}	V_{CE} = V_{CES}; V_{GE} = 0 V; T_{VJ} = 25°C			1.4	mA
	T_{VJ} = 125°C			6.5	mA
I_{GES}	V_{CE} = 0 V; V_{GE} = ± 20 V			150	nA
$t_{d(on)}$	Inductive load, T_{VJ} = 125°C		150		ns
t_r	V_{CE} = 300 V; I_C = 60 A		60		ns
$t_{d(off)}$	V_{GE} = 15/0 V; R_G = 15 Ω		450		ns
t_f			40		ns
E_{on}			3.2		mJ
E_{off}			2.2		mJ
C_{ies}	V_{CE} = 25 V; V_{GE} = 0 V; f = 1 MHz		4.2		nF
R_{thJC}	(per IGBT)			0.43	K/W
R_{thJH}	with heatsink compound (0.42 K/m.K; 50 µm)		0.85		K/W



PSIG 100/06

*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 registered, E 148688

Applications

- AC and DC motor control
- AC servo and robot drives
- power supplies
- welding inverters

Advantages

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

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

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Reverse diodes (FRED)

Symbol	Conditions	Maximum Ratings	
I_{F25}	T_C = 25°C	134	A
I_{F80}	T_C = 80°C	82	A

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

Temperature Sensor NTC

Symbol	Conditions	Characteristic Values min.	typ.	max.	
R_{25}	T = 25°C	4.75	5.0	5.25	kΩ
$B_{25/50}$			3375		K

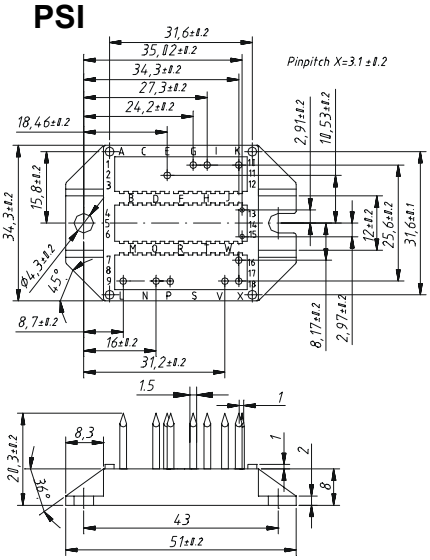
Module

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

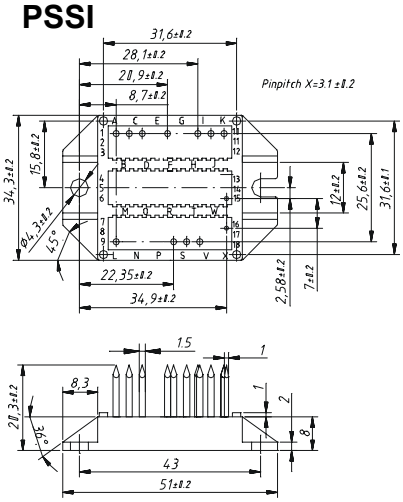
Symbol	Conditions	Characteristic Values min.	typ.	max.	
d_S	Creepage distance on surface (Pin to heatsink)	11.2			mm
d_A	Strike distance in air (Pin to heatsink)	11.2			mm
Weight			24		g

Package style and outline
Dimensions in mm (1mm = 0.0394“)

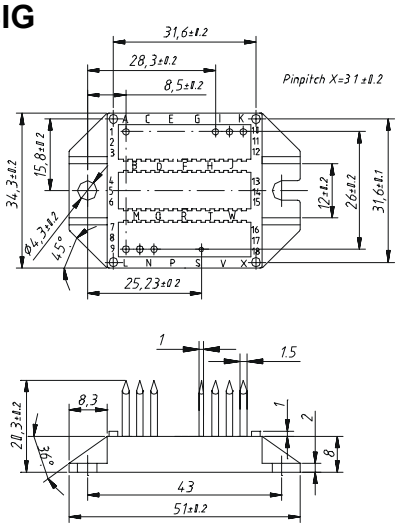
PSI



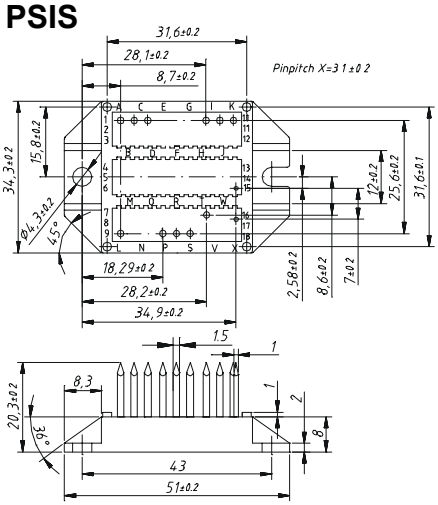
PSSI



PSIG



PSIS



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