



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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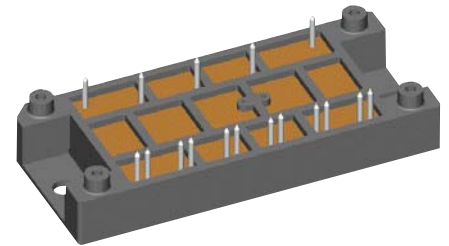
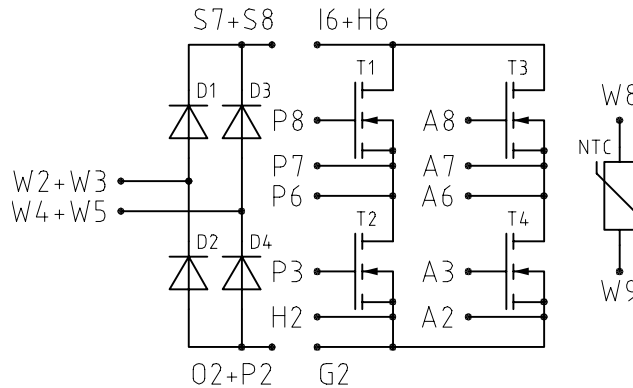
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Module with HiPerFET™ H-Bridge and Single Phase Mains Rectifier Bridge

Preliminary data

$$\begin{aligned} V_{DSS} &= 500 \text{ V} \\ R_{DSon} &= 116 \text{ m}\Omega \\ V_{RRM} &= 1200 \text{ V} \\ I_{DAV25} &= 90 \text{ A} \end{aligned}$$



pin configuration see outlines

Mains Rectifier Bridge D1 - D4

Symbol	Conditions	Maximum Ratings	
V_{RRM}		1200	V
I_{FAV25}	$T_C = 25^\circ\text{C}$; sine 180°	45	A
I_{FAV80}	$T_C = 80^\circ\text{C}$; sine 180°	33	A
I_{FSM}	$T_{VJ} = 25^\circ\text{C}$; $t = 10 \text{ ms}$ sine 50 Hz	400	A

Symbol	Conditions	Characteristic Values ($T_{VJ} = 25^\circ\text{C}$, unless otherwise specified)		
		min.	typ.	max.
V_F	$I_F = 20 \text{ A}$			
	$T_{VJ} = 25^\circ\text{C}$		1.1	1.2 V
	$T_{VJ} = 125^\circ\text{C}$		1.0	V
I_R	$V_R = V_{RRM}$			
	$T_{VJ} = 25^\circ\text{C}$			0.02 mA
	$T_{VJ} = 125^\circ\text{C}$		0.4	mA
R_{thJC}	(per diode)			1.42 K/W
R_{thJS}	with heat transfer paste		2.8	K/W

Application

- primary side of mains supplied
- welding converters
- switched mode power supplies
- induction heaters

Features

- H-bridge with HiPerFET™ technology:
 - low R_{DSon}
 - unclamped inductive switching (UIS) capability
 - dv/dt ruggedness
 - fast intrinsic reverse diode
 - Kelvin source for easy drive
 - low inductive, symmetrical current paths
- thermistor for internal temperature measurement
- package:
 - high level of integration - only one power semiconductor module required for the whole primary side
 - solder terminals for PCB mounting
 - isolated DCB ceramic base plate

MOSFET H - Bridge T1 - T4

Symbol	Conditions	Maximum Ratings	
V_{DSS}	$T_{VJ} = 25^{\circ}\text{C}$ to 150°C	500	V
V_{GS}		± 20	V
I_{D25}	$T_C = 25^{\circ}\text{C}$	40	A
I_{D80}	$T_C = 80^{\circ}\text{C}$	30	A
I_{F25}	(diode) $T_C = 25^{\circ}\text{C}$	40	A
I_{F80}	(diode) $T_C = 80^{\circ}\text{C}$	30	A

Symbol	Conditions	Characteristic Values ($T_{VJ} = 25^{\circ}\text{C}$, unless otherwise specified)		
		min.	typ.	max.
R_{DSon}	$V_{GS} = 10\text{ V}; I_D = I_{D80}$			116 m Ω
V_{GSth}	$V_{DS} = 20\text{ V}; I_D = 8\text{ mA}$	2		4 V
I_{DSS}	$V_{DS} = 0.8 \cdot V_{DSS}; V_{GS} = 0\text{ V}; T_{VJ} = 25^{\circ}\text{C}$ $T_{VJ} = 125^{\circ}\text{C}$		0.5	0.4 mA mA
I_{GSS}	$V_{GS} = \pm 20\text{ V}; V_{DS} = 0\text{ V}$			0.2 μA
Q_g Q_{gs} Q_{gd}	$V_{GS} = 10\text{ V}; V_{DS} = 0.5 \cdot V_{DSS}; I_D = 20\text{ A}$		270 56 124	nC nC nC
$t_{d(on)}$ t_r $t_{d(off)}$ t_f	$V_{GS} = 10\text{ V}; V_{DS} = 0.5 \cdot V_{DSS};$ $I_D = 20\text{ A}; R_G = 1\text{ }\Omega$		50 100 100 80	ns ns ns ns
V_F	(diode) $I_F = 20\text{ A}; V_{GS} = 0\text{ V}$			1.5 V
t_{rr}	(diode) $I_F = 40\text{ A}; -di/dt = 200\text{ A}/\mu\text{s}; V_{DS} = 100\text{ V}$		300	ns
R_{thJC} R_{thJS}	with heat transfer paste		0.47	0.32 K/W K/W

Temperature Sensor NTC

Symbol	Conditions	Characteristic Values		
		min.	typ.	max.
R_{25} $B_{25/100}$	$T = 25^{\circ}\text{C}$	1950	2057 3560	2170 Ω K

Module

Symbol	Conditions	Maximum Ratings	
T_{VJ}		-40...+150	°C
T_{stg}		-40...+125	°C
V_{ISOL}	$I_{ISOL} \leq 1 \text{ mA}$; 50/60 Hz; $t = 1 \text{ min}$	3000	V~
M_d	Mounting torque (M5)	2 - 2.5	Nm

Symbol	Conditions	Characteristic Values		
		(T _{VJ} = 25°C, unless otherwise specified)		
		min.	typ.	max.
d_s	Creepage distance on surface	8		mm
d_A	Strike distance through air	8		mm
Weight	typ.		80	g

Dimensions in mm (1 mm = 0.0394")

