



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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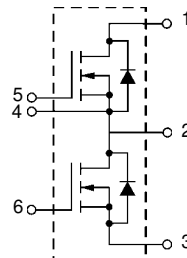
Dual Power HiPerFET™ Module

VMM 45-02F

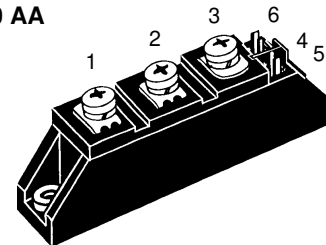
$V_{DSS} = 200\text{ V}$
 $I_{D25} = 45\text{ A}$
 $R_{DS(on)} = 45\text{ m}\Omega$

Phaseleg Configuration
 High dv/dt, Low t_{rr} , HDMOS™ Family

Preliminary Data



TO-240 AA



1 = Drain 1
 2 = Source 1, Drain 2
 3 = Source 2
 4 = Kelvin Source 1
 5 = Gate 1
 6 = Gate 2

Symbol	Conditions	Maximum Ratings	
V_{DSS}	$T_J = 25^\circ\text{C}$ to 150°C	200	V
V_{DGR}	$T_J = 25^\circ\text{C}$ to 150°C ; $R_{GS} = 10\text{ k}\Omega$	200	V
V_{GS}	Continuous	± 20	V
V_{GSM}	Transient	± 30	V
I_{D25}	$T_C = 25^\circ\text{C}$	45	A
I_{D80}	$T_C = 80^\circ\text{C}$	34	A
I_{DM}	$T_C = 25^\circ\text{C}$, $t_p = 10\text{ }\mu\text{s}$, pulse width limited by T_{JM}	180	A
P_{tot}	$T_C = 25^\circ\text{C}$	190	W
T_J		-40 ... +150	$^\circ\text{C}$
T_{JM}		150	$^\circ\text{C}$
T_{stg}		-40 ... +125	$^\circ\text{C}$
V_{ISOL}	50/60 Hz $I_{ISOL} \leq 1\text{ mA}$	$t = 1\text{ min}$ $t = 1\text{ s}$	3000 3600 V~ V~
M_d	Mounting torque(M5 or 10-32 UNF) Terminal connection torque (M5)	2.5-4.0/22-35 Nm/lb.in. 2.5-4.0/22-35 Nm/lb.in.	
Weight	Typical including screws	90	g

Features

- Two MOSFET's in phaseleg config.
- International standard package
- Direct copper bonded Al_2O_3 ceramic base plate
- Isolation voltage 3600 V~
- Low $R_{DS(on)}$ HDMOS™ process

Applications

- Switched-mode and resonant-mode power supplies
- Uninterruptible power supplies (UPS)

Advantages

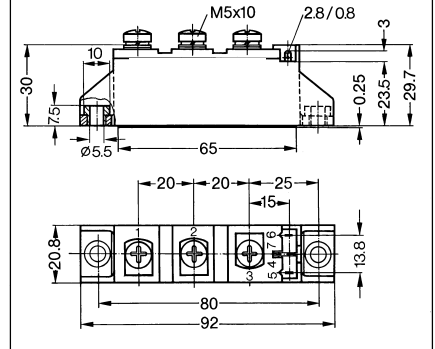
- Easy to mount with two screws
- Space and weight savings
- High power density
- Low losses

Symbol	Conditions	Characteristic Values ($T_J = 25^\circ\text{C}$, unless otherwise specified)		
		min.	typ.	max.
V_{DSS}	$V_{GS} = 0\text{ V}$, $I_D = 1\text{ mA}$	200		V
$V_{GS(th)}$	$V_{DS} = V_{GS}$, $I_D = 4\text{ mA}$	2		4 V
I_{GSS}	$V_{GS} = \pm 20\text{ V DC}$, $V_{DS} = 0$			500 nA
I_{DSS}	$V_{DS} = V_{DSS}$, $V_{GS} = 0\text{ V}$, $T_J = 25^\circ\text{C}$ $V_{DS} = 0.8 \cdot V_{DSS}$, $V_{GS} = 0\text{ V}$, $T_J = 125^\circ\text{C}$			15 μA 1 mA
$R_{DS(on)}$	$V_{GS} = 10\text{ V}$, $I_D = 0.5 \cdot I_{D25}$ Pulse test, $t \leq 300\text{ }\mu\text{s}$, duty cycle $d \leq 2\%$		39	45 m Ω

Data per MOSFET unless otherwise stated.

Symbol	Conditions	Characteristic Values ($T_J = 25^\circ\text{C}$, unless otherwise specified)		
		min.	typ.	max.
g_{fs}	$V_{DS} = 10\text{ V}; I_D = 0.5 \cdot I_{D25}$ pulsed	20	30	S
C_{iss}	$V_{GS} = 0\text{ V}, V_{DS} = 25\text{ V}, f = 1\text{ MHz}$	4800	7500	pF
C_{oss}		900	2250	pF
C_{rss}		310	750	pF
$t_{d(on)}$	$V_{GS} = 10\text{ V}, V_{DS} = 0.5 \cdot V_{DSS}, I_D = 0.5 \cdot I_{D25}$ $R_G = 1\ \Omega$ (External), resistive load	40		ns
t_r		45		ns
$t_{d(off)}$		300		ns
t_f		45		ns
Q_g	$V_{GS} = 10\text{ V}, V_{DS} = 0.5 \cdot V_{DSS}, I_D = 0.5 \cdot I_{D25}$	190	225	nC
Q_{gs}		35	55	nC
Q_{gd}		95	115	nC
R_{thJC}				0.63 K/W
R_{thCH}	heatsink compound applied	0.3		K/W
d_s	Creepage distance on surface	12.7		mm
d_A	Strike distance through air	9.6		mm
a	Allowable acceleration			50 m/s ²

Dimensions in mm (1 mm = 0.0394")



Source-Drain Diode		Characteristic Values ($T_J = 25^\circ\text{C}$, unless otherwise specified)		
Symbol	Conditions	min.	typ.	max.
I_S	$V_{GS} = 0\text{ V}$			45 A
I_{SM}	Repetitive; pulse width limited by T_{JM}			180 A
V_{SD}	$I_F = I_S, V_{GS} = 0\text{ V}$, Pulse test, $t \leq 300\ \mu\text{s}$, duty cycle $d \leq 2\%$		0.9	1.2 V
t_{rr}	$I_F = I_S, -di/dt = 100\text{ A}/\mu\text{s}$, $V_{DS} = 100\text{ V}, V_{GS} = 0\text{ V}$		200	400 ns