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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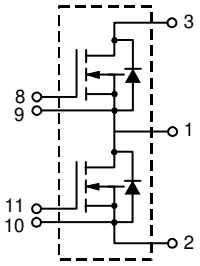
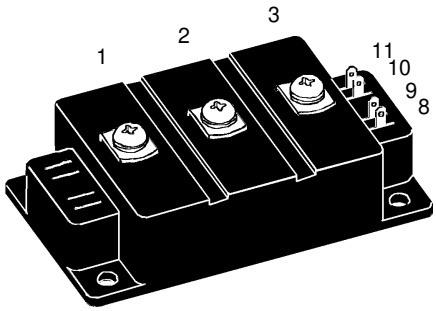
Dual Power HiPerFET™ Module

VMM 300-03F

V_{DSS} = 300 V
I_{D25} = 290 A
$R_{DS(on)}$ typ. = 7.4 mΩ

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





Symbol	Conditions	Maximum Ratings	
V_{DSS}	T_J = 25°C to 150°C	300	V
V_{DGR}	T_J = 25°C to 150°C; R_{GS} = 10 kΩ	300	V
V_{GS}	Continuous	±20	V
V_{GSM}	Transient	±30	V
I_{D25}	T_C = 25°C	290	A
I_{D80}	T_C = 80°C	220	A
I_{DM}	T_C = 25°C; t_p = 10 µs ①	1160	A
P_D	T_C = 25°C	1500	W
T_J		-40 ...+150	°C
T_{JM}		150	°C
T_{stg}		-40 ... +125	°C
V_{ISOL}	50/60 Hz, t = 1 min	3000	V~
	I_{ISOL} ≤ 1 mA, t = 1 s	3600	
M_d	Mounting torque (M6)	2.25-2.75/20-25	Nm/lb.in.
	Terminal connection torque (M5)	2.5-3.7/22-33	Nm/lb.in.
Weight	typical including screws	250	g

Symbol	Conditions	Characteristic Values (T_J = 25°C, unless otherwise specified) min.	typ.	max.	
V_{DSS}	V_{GS} = 0 V, I_D = 12 mA	300			V
$V_{GS(th)}$	V_{DS} = 20 V, I_D = 30 mA	2		4	V
I_{GSS}	V_{GS} = ±20 V DC, V_{DS} = 0			±500	nA
I_{DSS}	V_{DS} = V_{DSS}, T_J = 25°C			0.5	mA
	V_{GS} = 0 V, T_J = 125°C			8	mA
$R_{DS(on)}$	V_{GS} = 10 V, I_D = 0.5 • I_{D25} Pulse test, t ≤ 300 µs, duty cycle d ≤ 2 %		7.4	8.6	mΩ

① Additional current limitation by external leads

Features

- Low $R_{DS(on)}$ HDMOS™ process
- International standard package
- Low package inductance for high speed switching
- Kelvin Source contact for easy drive
- **D**irect **C**opper **B**onded Al_2O_3 ceramic base plate

Applications

- AC motor speed control for electric vehicles
- DC servo and robot drives
- Switched-mode and resonant-mode power supplies
- DC choppers

Advantages

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

IXYS reserves the right to change limits, test conditions and dimensions.

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Symbol	Conditions	Characteristic Values (T_J = 25°C, unless otherwise specified) min.	typ.	max.	
g_{fs}	V_{DS} = 10 V; I_D = 0.5 • I_{D25} pulsed		280		S
C_{iss}	V_{GS} = 0 V, V_{DS} = 25 V, f = 1 MHz		40		nF
C_{oss}			7.2		nF
C_{rss}			2.8		nF
$t_{d(on)}$	V_{GS} = 10 V, V_{DS} = 0.5 • V_{DSS}, I_D = 0.5 • I_{D25} R_G = 1 Ω		200		ns
t_r			400		ns
$t_{d(off)}$			400		ns
t_f			150		ns
Q_g	V_{GS} = 10 V, V_{DS} = 150 V, I_D = 150 A		1440		nC
Q_{gs}			240		nC
Q_{gd}			720		nC
R_{thJC}				0.08	K/W
R_{thJS}	with heat transfer paste		0.12		K/W

Source-Drain Diode

Symbol	Conditions	Characteristic Values (T_J = 25°C, unless otherwise specified) min.	typ.	max.	
I_S	V_{GS} = 0 V, T_C = 25°C, T_J = T_{JM}			290	A
I_{SM}	②			1160	A
V_{SD}	I_F = 300 A, V_{GS} = 0 V, Pulse test, t ≤ 300 µs, duty cycle d ≤ 2 %		0.9	1.1	V
t_{rr}	I_F = 300 A, -di/dt = 400 A/µs, V_{DS} = 0.5 • V_{DSS}		300		ns

② Additional current limitation by external leads

Dimensions in mm (1 mm = 0.0394")