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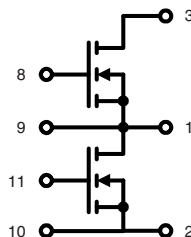
VMM 1000-01P

Dual Trench MOSFET Module

Phaseleg Configuration

$V_{DSS} = 100\text{ V}$
 $I_{D25} = 1000\text{ A}$
 $R_{DS(on)} = 0.75\text{ m}\Omega$

Preliminary data



MOSFET T1 + T2

Symbol	Conditions	Maximum Ratings	
V_{DSS}	$T_{VJ} = 25^{\circ}\text{C to } 150^{\circ}\text{C}$	100	V
V_{GS}		± 20	V
I_{D25}	$T_C = 25^{\circ}\text{C}$ ①	1000	A
I_{D80}	$T_C = 80^{\circ}\text{C}$ ①	800	A
I_{F25}	(diode) $T_C = 25^{\circ}\text{C}$ ①	1000	A
I_{F80}	(diode) $T_C = 80^{\circ}\text{C}$ ①	800	A

Features

- Trench MOSFETs
 - low $R_{DS(on)}$
 - optimized intrinsic reverse diode
- package
 - low inductive current path
 - screw connection to high current main terminals
 - use of non interchangeable connectors for auxiliary terminals possible
 - Kelvin source terminals for easy drive
 - isolated DCB ceramic base plate

Symbol Conditions Characteristic Values

($T_{VJ} = 25^{\circ}\text{C}$, unless otherwise specified)

Symbol	Conditions	Characteristic Values		
		min.	typ.	max.
$R_{DS(on)}$	$V_{GS} = 10\text{ V}; I_D = I_{D80}$		0.75	1.2 m Ω
$V_{GS(th)}$	$V_{DS} = 20\text{ V}; I_D = 10\text{ mA}$	2		4 V
I_{DSS}	$V_{DS} = V_{DSS}; V_{GS} = 0\text{ V}; T_{VJ} = 25^{\circ}\text{C}$ $T_{VJ} = 125^{\circ}\text{C}$		1.5	0.15 mA mA
I_{GSS}	$V_{GS} = \pm 20\text{ V}; V_{DS} = 0\text{ V}$			1.5 μA
Q_g Q_{gs} Q_{gd}	$V_{GS} = 10\text{ V}; V_{DS} = 80\text{ V}; I_D = 1000\text{ A}$		2355	nC
			495	nC
			1000	nC
$t_{d(on)}$ t_r $t_{d(off)}$ t_f	$V_{GS} = 10\text{ V}; V_{DS} = 50\text{ V};$ $I_D = 250\text{ A}; R_G = 0.68\ \Omega$		50	ns
			100	ns
			260	ns
			100	ns
V_F	(diode) $I_F = 500\text{ A}; V_{GS} = 0\text{ V}$		1.0	1.5 V
t_{rr}	(diode) $I_F = 200\text{ A}; -di/dt = 1000\text{ A}/\mu\text{s}; V_{DS} = 30\text{ V}$		100	ns
R_{thJC} R_{thJS}	with heat transfer paste		0.12	0.06 K/W K/W

① additional current limitation by external leads

Applications

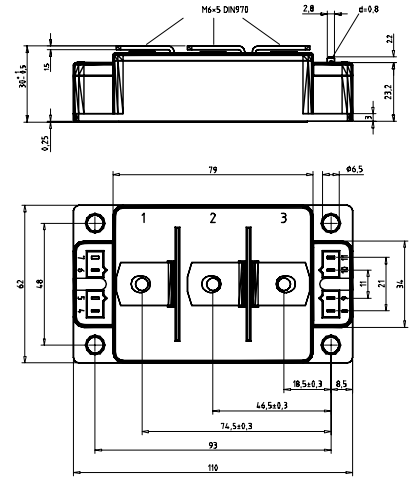
- converters with high power density for
 - main and auxiliary AC drives of electric vehicles
 - 4 quadrant DC drives
- power supplies with low input voltage, e.g. from fuel cells or solar cells

Module

Symbol	Conditions	Maximum Ratings	
I_{RMS}	per main terminal	500	A
T_{VJ}		-40...+175	°C
T_{stg}		-40...+125	°C
V_{ISOL}	$I_{ISOL} \leq 1 \text{ mA}; 50/60 \text{ Hz}$	3600	V~
M_d	Mounting torque (M6)	2.25 - 2.75	Nm
	Terminal connection torque (M6)	4.5 - 5.5	Nm

Symbol	Conditions	Characteristic Values		
		min.	typ.	max.
Weight		250		g

Dimensions in mm (1 mm = 0.0394")



Optional accessories for modules

keyed twin plugs
 (UL758, style 1385, CSA class 5851, guide 460-1-1)

- Type ZY180L with wire length 350mm
 – for pins 4 (yellow wire) and 5 (red wire)
 – for pins 11 (yellow wire) and 10 (red wire)
- Type ZY180R with wire length 350mm
 – for pins 7 (yellow wire) and 6 (red wire)
 – for pins 8 (yellow wire) and 9 (red wire)

PHASE-OUT