

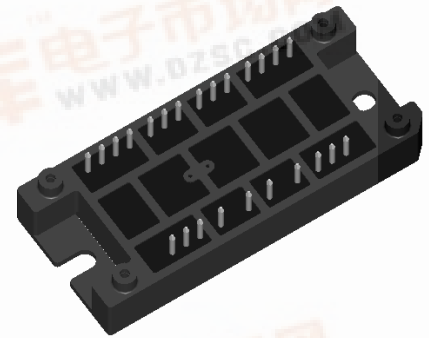
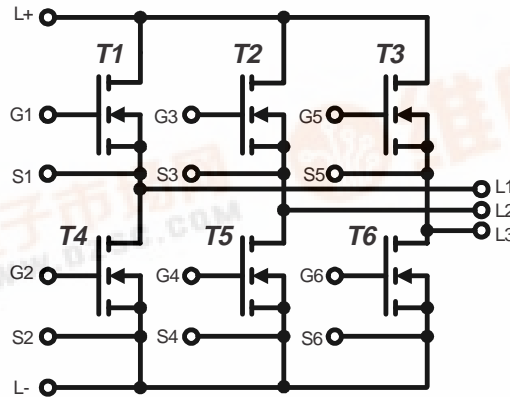


VWM 350-0075P

Three phase full bridge with Trench MOSFETs

$V_{DSS} = 75\text{ V}$
 $R_{DSon} = 2.3\text{ m}\Omega$
 $I_{D25} = 340\text{ A}$

Preliminary data



MOSFETs T1 - T6

Symbol	Conditions	Maximum Ratings	
V_{DSS}	$T_{VJ} = 25^{\circ}\text{C to } 150^{\circ}\text{C}$	75	V
V_{GS}		± 20	V
I_{D25}	$T_C = 25^{\circ}\text{C}$	340	A
I_{D80}	$T_C = 80^{\circ}\text{C}$	250	A
I_{D25}	$T_C = 25^{\circ}\text{C}$ (diode)	340	A
I_{D80}	$T_C = 80^{\circ}\text{C}$ (diode)	250	A

Applications

- AC drives
 - in automobiles
 - electric power steering
 - starter generator
 - etc...
 - in industrial vehicles
 - propulsion drives
 - fork lift drives
- in battery supplied equipment

Symbol	Conditions	Characteristic Values ($T_{VJ} = 25^{\circ}\text{C}$, unless otherwise specified)		
		min.	typ.	max.
R_{DSon}	$V_{GS} = 10\text{ V}; I_D = I_{D80}$		2.3	3.3 m Ω
V_{GSth}	$V_{DS} = 20\text{ V}; I_D = 2\text{ mA}$	2		4 V
I_{DSS}	$V_{DS} = 75\text{ V}; V_{GS} = 0\text{ V}; T_{VJ} = 25^{\circ}\text{C}$ $T_{VJ} = 125^{\circ}\text{C}$		0.25	0.02 mA mA
I_{GSS}	$V_{GS} = \pm 20\text{ V}; V_{DS} = 0\text{ V}$			0.2 μA
Q_g Q_{gs} Q_{gd}	$V_{GS} = 10\text{ V}; V_{DS} = 0.5 \cdot V_{DSS}; I_D = 175\text{ A}$		450	nC
			60	nC
			170	nC
$t_{d(on)}$ t_r $t_{d(off)}$ t_f	$V_{GS} = 10\text{ V}; V_{DS} = 0.5 \cdot V_{DSS};$ $I_D = 175\text{ A}; R_G = 2.2\ \Omega$		60	ns
			170	ns
			320	ns
			200	ns
V_F	(diode) $I_F = 175\text{ A}; V_{GS} = 0\text{ V}$		1.1	1.6 V
t_{rr}	(diode) $I_F = 40\text{ A}; -di/dt = 200\text{ A}/\mu\text{s}; V_{DS} = 30\text{ V}$		90	ns
R_{thJC} R_{thJH}	with heat transfer paste		0.51	0.26 K/W K/W

Features

- MOSFETs in trench technology:
 - low R_{DSon}
 - optimized intrinsic reverse diode
- package:
 - high level of integration
 - solder terminals for PCB mounting
 - isolated DCB ceramic base plate with optimized heat transfer

Ratings and characteristic values are per individual MOSFET
 IXYS reserves the right to change limits, test conditions and dimensions.

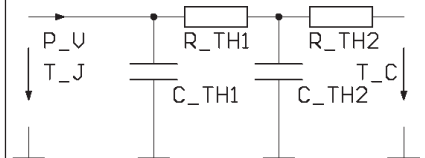
Module

Symbol	Conditions	Maximum Ratings		
T_{VJ}		-40...+175	°C	
T_{stg}		-40...+125	°C	
V_{ISOL}	$I_{ISOL} \leq 1 \text{ mA}$; 50/60 Hz; $t = 1 \text{ min}$	500	V~	
M_d	Mounting torque (M5)	2 - 2.5	Nm	

Symbol	Conditions	Characteristic Values		
		$(T_{VJ} = 25^\circ\text{C}$, unless otherwise specified)		
		min.	typ.	max.
Weight	typ.		80	g

Equivalent Circuits for Simulation

Thermal Response



junction - case (typ.)

$$C_{th1} = 0.13 \text{ J/K}; R_{th1} = 0.08 \text{ K/W}$$

$$C_{th2} = 0.22 \text{ J/K}; R_{th2} = 0.18 \text{ K/W}$$

Dimensions in mm (1 mm = 0.0394")

