# DIODE MODULE
DD40F/KD40F

UL;E76102(M)

Power Diode Module **DD40F** series are designed for various rectifier circuits. **DD40F** has two diode chips connected in series in 25mm (1inch) width package and the mounting base is elctrically isolated from elements for simple heatsink construction. Wide voltage rating up to, 1,600V is avaiable for various input voltage.

- Isolated mounting base
- Two elements in a package for simple (single and three phase) bridge connections
- Highly reliable glass passivated chips
- High surge current capability

(**Applications**)
Various rectifiers, Battery chargers, DC motor drives

Unit：mm
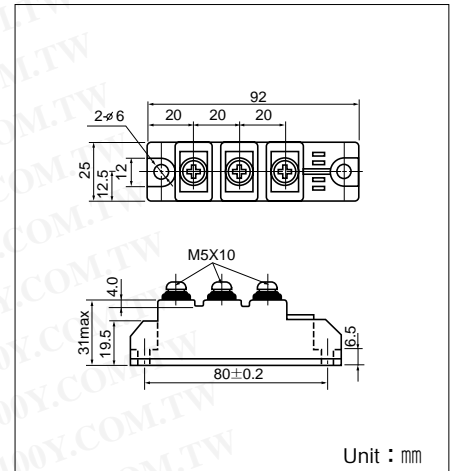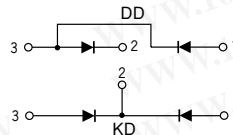
■Maximum Ratings

(Tj＝25℃ unless otherwise specified)

Symbol	Item	Ratings				Unit
		DD40F40	DD40F80	DD40F120	DD40F160	
VRRM	Repetitive Peak Reverse Voltage	400	800	1200	1600	V
VRSM	Non-Repetitive Peak Reverse Voltage	480	960	1300	1700	V

Symbol	Item		Conditions	Ratings	Unit
IF(AV)	Average Forward Current		Single phase, half wave, 180° conduction, Tc：96℃	40	A
IF(RMS)	R.M.S. Forward Current		Single phase, half wave, 180° conduction, Tc：96℃	62	A
IFSM	Surge Forward Current		½ cycle, 50/60Hz, peak Value, non-repetitive	1200/1300	A
I²t	I²t		Value for one cycle of surge current	7200	A²S
VISO	Isolation Breakdown Voltage (R.M.S.)		A.C.1minute	2500	℃
Tj	Junction Temperature			−40 to +125	℃
Tstg	Storage Temperature			−40 to +125	V
	Mounting Torque	Mounting (M5)	Recommended Value 1.5-2.5 (15-25)	2.7 (28)	N・m (kgf・cm)
		Terminal (M5)	Recommended Value 1.5-2.5 (15-25)	2.7 (28)	
	Mass			170	g

■Electrical Characteristics

Symbol	Item	Conditions	Ratings	Unit
IRRM	Repetitive Peak Reverse Current, max.	at VDRM, single phase, half wave. Tj＝125℃	15	mA
VFM	Forward Voltage Drop, max.	Forward current 120A, Tj＝25℃, Inst. measurement	1.40	V
Rth(j-c)	Thermal Impedance, max.	Junction to case	0.55	℃/W

Maximum Forward Characteristics

Forward Current (A) vs. Forward Voltage Drop (V)

Average Forward Current vs. Power Dissipation

Power Dissipation Pav (W) vs. Average Forward Current (A)
Per one element
D.C.
Single Phase
Three Phase
Max.

Average Forward Current vs. Allowable Case Temperature

Allowable Case Temperature Tc (℃) vs. Average Forward Current (A)
Per one element
Three Phase
Single Phase
D.C.

Cycle Surge Forward Current Rating (Non-Repetitive)

Surge Forward Current (A) vs. Time (Cycles)
Per one element
Tj=25℃ start
60Hz
50Hz

Transient Thermal Impedance

Transient Thermal Impedance θj-c (℃/W) vs. Time t (sec)
Per one element
Junction to Case

Output Current B2;Two Pluse Bridge connection

Total Power Dissipation (W) / Allowable Case Temperature (℃) vs. Output Current (A) / Ambient Temperature (℃)
B2
Rth:1.0℃/W
Rth:0.8℃/W
Rth:0.6℃/W
Rth:0.4℃/W
Rth:0.2℃/W
Rth:0.1℃/W
Id(Av)

Output Current B6;Six pulse Bridge connection

Total Power Dissipation (W) / Allowable Case Temperature (℃) vs. Output Current (A) / Ambient Temperature (℃)
B6
Rth:0.8℃/W
Rth:0.6℃/W
Rth:0.4℃/W
Rth:0.2℃/W
Rth:0.1℃/W
Id(AV)