



Diode modules(MDC,MDK,MDA,MDX,MD)

Features

- Chips are electrically insulated from bottom plate
- Seal in compliance with international standard
- Pressure type, excellent temperature characteristics and power cycling capability
- 400A below modules are forced air cooling; 500A above modules can select air cooling or water cooling
- Simple installation, convenient maintenance
- Compact size, light weight

Applications

- DC power supply
- AC, DC motor control
- Different kinds of rectifying power supply
- Motor softstarter
- Welding equipment
- Frequency transformer
- Battery charging and discharging

Type and meanings

M □ □ □ □
1 2 3 4 5

- 1: M for "Module"
- 2: Letter code for subtype of module
D: rectifier diode
Z: fast recovery diode
T: phase control thyristor
K: fast turn-off thyristor
F: D+T
H: Z+K
U: ultra fast and soft recovery diode
- 3: Circuit:
A: common anode
C: in series
K: common cathode
X: anti-parallel
Q: single phase bridge
G: three phase common anode
S: three phase bridge
Y: three phase common cathode
R: in parallel
- 4: Max average current
- 5: Class according to V_{DRM} , V_{RRM}

Remarks: this part is omitted usually. Its usage is as below: (TD), (DT), (KZ), (ZK) means the sequence of devices in thyristor/diode mixed modules. (NA), (NK), (A), (K) means the bottom of non-isolated module is the anode and cathode of devices. (N) means the bottom plate of module is common electrode. (AA) means modules are in compliance with low-voltage standard.

Technical parameter

Type	V_{RRM}	$I_{F(AV)}$	I_{FSM}	I^2t	I_{FRM}	$I_{F(RMS)}$	V_{FM}/I_{FM}	V_{FO}	r_F	R_p	T_{jm}	V_{iso}	Outlines
	V	$T_c=100^\circ C$ A	KA	$A^2S \times 10^4$	mA	A	V/A	V	m Ω	$^\circ C/W$	$^\circ C$	V	Fig
MDx26	600-1800	26	0.65	0.21	8	41	1.65/80	0.80	9.80	1.300	150	2500	
MDx40	600-1800	40	1.00	0.51	8	63	1.55/120	0.80	5.57	0.900	150	2500	
MDx55	600-1800	55	1.30	0.86	8	86	1.45/170	0.80	3.47	0.700	150	2500	1
MDx70	600-1800	70	1.80	1.65	8	110	1.40/210	0.80	2.50	0.570	150	2500	
MDx90	600-1800	90	2.30	2.69	8	141	1.33/270	0.80	1.70	0.470	150	2500	1
MDx110	600-1800	110	2.60	3.44	8	173	1.45/330	0.80	1.74	0.350	150	2500	2 3
MDx135	600-1800	135	3.90	7.75	12	212	1.38/405	0.80	1.18	0.300	150	2500	4
MDx160	600-1800	160	6.00	18.4	12	251	1.56/480	0.80	1.35	0.230	150	2500	5
MDx182	600-1800	182	6.40	20.9	12	286	1.43/550	0.80	0.96	0.210	150	2500	
MDx200	600-1800	200	8.00	32.6	12	314	1.38/600	0.75	0.88	0.210	150	2500	6
MDx250	600-1800	250	11.0	61.7	20	393	1.43/750	0.75	0.76	0.140	150	2500	
MDx300	600-1800	300	12.5	79.7	20	471	1.35/900	0.75	0.55	0.130	150	2500	7
MDx350	600-1800	350	15.0	115	30	550	1.50/1050	0.75	0.61	0.091	150	2500	
MDx400	600-1800	400	17.0	147	30	628	1.48/1200	0.75	0.50	0.100	150	2500	10
MDx500	600-1800	500	21.0	225	40	785	1.35/1500	0.75	0.32	0.090	150	2500	
MDx800	600-1800	800	18.0	165	45	1256	1.80/2400	0.75	0.33	0.080	150	2500	12
MDx1000	600-1800	1000	20.0	204	50	1570	1.82/3000	0.75	0.31	0.080	150	2500	
MDx1200	600-1800	1800	20.0	204	50	1884	1.86/3000	0.75	0.26	0.080	150	2500	14

Note: 1. MDx means MDC, MDA, MDK or MD, anyone of them.
2. "*" means water-cooling module.

Remark

- $V_{RSM}=V_{RRM}+200V$
- The other parameters in the table except V_{fm} , V_{iso} are the tested value under T_{jm}
- $I^2t=I_{FSM}^2 \times t_w/2$; t_w =Sine and half wave current full-bottomed.
On the condition of 50Hz: $I^2t(10ms)=0.005I_{FSM}^2(A^2s)$
- When working at 60Hz: $I_{FSM}(8.3ms)=I_{FSM}(10ms) \times 1.066$,
 $I^2t(8.3ms)=I^2t(10ms) \times 0.943$,
- V_{TO} : threshold voltage; r : slope resistance, only used to calculate the power consumption and rated current under different temperatures



Type and meanings

M
1 2 3 4 5

- 1: M for "Module"
- 2: Letter code for subtype of module
D: rectifier diode
Z: fast recovery diode
T: phase control thyristor
K: fast turn-off thyristor
F: D+T
H: Z+K
U: ultra fast and soft recovery diode
- 3: Circuit:
A: common anode
C: in series
K: common cathode
X: anti-parallel
Q: single phase bridge
G: three phase common anode
S: three phase bridge
Y: three phase common cathode
R: in parallel
- 4: Max average current
- 5: Class according to V_{DRM} , V_{RRM}

Remarks: this part is omitted usually. Its usage is as below: (TD), (DT), (KZ), (ZK) means the sequence of devices in thyristor/diode mixed modules. (NA), (NK), (A), (K) means the bottom of non-isolated module is the anode and cathode of devices. (N) means the bottom plate of module is common electrode. (AA) means modules are in compliance with low-voltage standard.

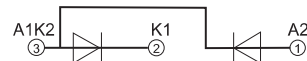
Diode modules (MDC, MDK, MDA, MDX, MD)

Technical parameter

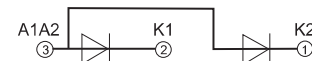
Type	V_{RRM}	$I_{F(AV)}$	I_{FSM}	I^2t	I_{RRM}	$I_{F(RMS)}$	V_{FM}/I_{FM}	V_{FO}	r_F	$R_{\theta c}$	T_{jm}	V_{iso}	Outlines
	V	$T_C=100\text{ }^\circ\text{C}$ A	KA	$A^2S \times 10^4$	mA	A	V/A	V	m Ω	$^\circ\text{C/W}$	$^\circ\text{C}$	V	Fig
MDx65	1900-3000	65	1.30	0.86	10	86	1.55/170	0.85	3.76	0.680	150	3600	1
MDx70	1900-3000	70	1.80	1.65	10	110	1.50/210	0.85	2.73	0.550	150	3600	
MDx80	1900-3000	80	2.30	2.69	10	141	1.43/270	0.85	1.88	0.450	150	3600	1 2
MDx110	1900-300	110	2.60	3.44	12	173	1.55/330	0.85	1.88	0.330	150	3600	
MDx135	1900-3000	135	3.90	7.75	14	212	1.48/405	0.85	1.45	0.220	150	3600	4
MDx160	1900-3000	160	6.00	18.4	14	251	1.66/480	0.85	1.05	0.210	150	3600	
MDx182	1900-3000	182	6.40	20.9	14	286	1.53/550	0.85	0.96	0.220	150	3600	5
MDx200	1900-3000	200	8.00	32.6	16	314	1.48/600	0.80	0.83	0.130	150	3600	
MDx250	1900-3000	250	11.0	61.7	25	393	1.53/750	0.80	0.50	0.120	150	3600	6
MDx300	1900-3000	300	12.5	79.9	25	471	1.45/900	0.80	0.56	0.110	150	3600	
MDx350	1900-3000	350	15.0	115	35	550	1.60/1050	0.80	1.30	0.230	150	3600	7
MDx400*	600-1800	400	10.0	510	30	628	1.65/1200	0.75	0.64	0.160	150	2500	
MDx500*	600-1800	500	12.0	734	40	785	1.65/1500	0.75	0.51	0.130	150	2500	9
MDx600*	600-1800	600	15.0	1150	40	942	1.65/1800	0.75	0.42	0.110	150	2500	
MDx800*	600-1800	800	18.0	1650	40	1256	1.72/2400	0.75	0.34	0.080	150	2500	11
MDx1000*	600-1800	1000	18.0	1650	40	1570	1.82/3000	0.75	0.31	0.080	150	2500	

Circuit configurations

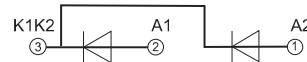
MDC



MDA



MDK



MD

