



Product Focus – Power Module - Thyristors and Diodes

TECHSEM

China's Leading Power Semiconductor Manufacturer.

High Quality Products and attractive to higher cost base EU manufacturers.

International Standards (IRIS, UL, IEC, RoHS etc.) and proactive QC system.

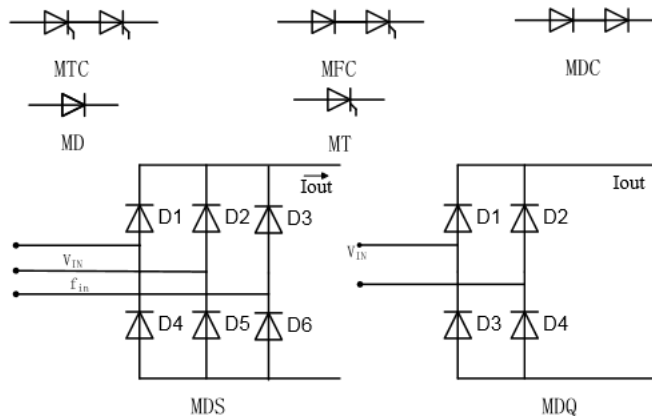
Pressure contact provides **improved reliability** versus solder module technology

Thyristor-Thyristor, Thyristor – Diode, Diode – Diode, Fast Diode Modules, Single and Three Phase Rectifier Bridge Modules.

UK skilled technical support and cross reference service versus Semikron, IXYS and Infineon etc.

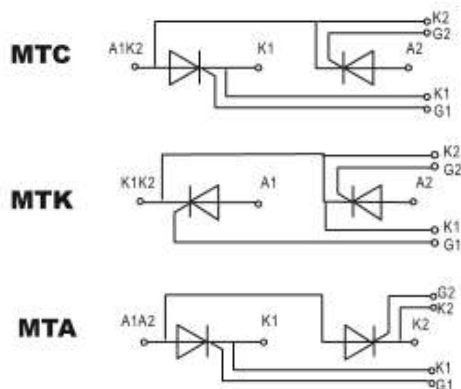


Power Module Outlines and Topologies available as standard:



Dual Thyristor Power Module Portfolio

Voltage versus Current Tc=85 Deg C



N.B.

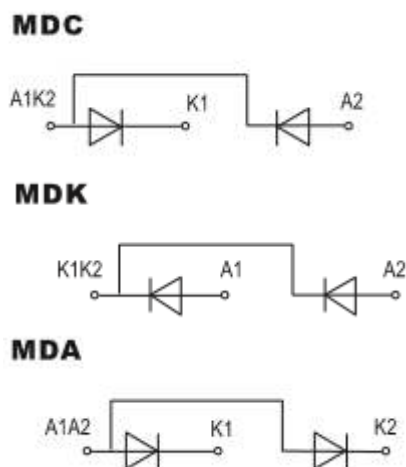
It(av) value is expressed on a per die basis.

MTx – 'x' denotes Phase Leg, common anode or common cathode connection.

Part #	It(av)	600-1800V	1900-2500V	2600-3600V
MTx26	26A	X	X	
MTx40	40A	X	X	
MTx55	55A	X	X	
MTx70	70A	X	X	
MTx90	90A	X	X	
MTx110	110A	X	X	
MTx135	135A	X	X	
MTx160	160A	X	X	
MTx182	182A	X	X	
MTx200	200A		X	X
MTx250	250A	X	X	X
MTx285	285A	X	X	
MTx300	300A		X	X
MTx330	330A	X	X	
MTx350	350A	X	X	
MTx400	400A	X	X	X
MTx500	500A	X	X	X
MTx570	570A	X	X	
MTx600	600A	X	X	
MTx800	800A	X	X	
MTx1000	1000A	X	X	
MTX1200	1200A	X	X	

Dual Diode Power Module Portfolio

Voltage versus Current Tc=85 Deg C



N.B.

It(av) value is expressed on a per die basis.

MDx – 'x' denotes Phase Leg, common anode or common cathode connection.

Part #	It(av)	600-1800V	1900-2500V	2600-3600V
MDx26	26A	X	X	
MDx40	40A	X	X	
MDx55	55A	X	X	
MDx70	70A	X	X	
MDx90	90A	X	X	
MDx110	110A	X	X	
MDx135	135A	X	X	
MDx160	160A	X	X	
MDx182	182A	X	X	
MDx200	200A	X	X	X
MDx250	250A	X	X	X
MDx300	300A	X	X	X
MDx350	350A		X	X
MDx380	380A	X		
MDx400	400A	X	X	X
MDx500	500A	X	X	X
MDx570	570A	X	X	
MDx600	600A	X	X	X
MDx800	800A	X	X	
MDx1000	1000A	X	X	
MDx1200	1200A	X	X	

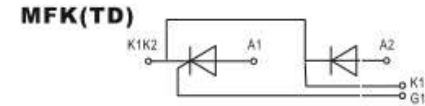
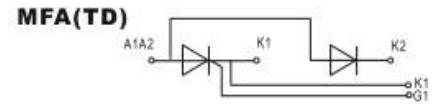
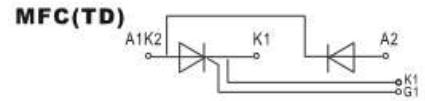
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Thyristor / Diode Module

Voltage versus Current Tc=85 Deg C

Part #	It(av)	600-1800V	1900-2500V	2600-3600V
MFx26	26A	X	X	
MFx40	40A	X	X	
MFx55	55A	X	X	
MFx70	70A	X	X	
MFx90	90A	X	X	
MFx110	110A	X	X	
MFx135	135A	X	X	
MFx160	160A	X	X	
MFx182	182A	X	X	
MFx200	200A		X	X
MFx250	250A	X	X	X
MFx285	285A	X		
MFx300	300A		X	X
MFx330	330A	X		
MFx350	350A	X	X	
MFx400	400A	X	X	X
MFx500	500A	X	X	X
MFx570	570A	X		
MFx600	600A	X	X	
MFx800	800A	X	X	
MFx1000	1000A	X	X	
MFx1200	1200A	X	X	



N.B.

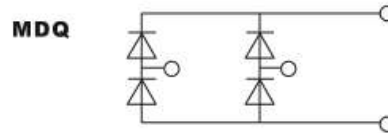
It(av) value is expressed on a per die basis.

MFx - 'x' denotes Phase Leg, common anode or common cathode connection.

Single Phase Rectifier Diode Module

Voltage versus Current Tc=85 Deg C per die.

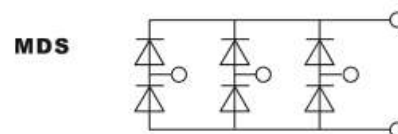
Part #	It(av)	600-1800V
MDQ50	50A	X
MDQ75	75A	X
MDQ100	100A	X
MDQ150	150A	X



Three Phase Rectifier Diode Module

Voltage versus Current Tc=85 Deg C per die

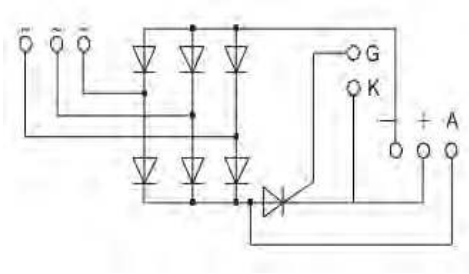
Part #	It(av)	600-1800V
MDS50	50A	X
MDS75	75A	X
MDS100	100A	X
MDS150	150A	X
MDS175	175A	X
MDS200	200A	X



Three Phase Rectifier Diode Module with Thyristor

Voltage versus Current Tc=85 Deg C per die.

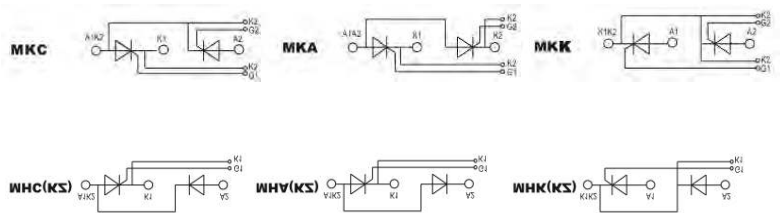
Part #	It(av)	600-1800V
MDST50	50A	X
MDST75	75A	X
MDST100	100A	X
MDST150	150A	X
MDST200	200A	X



Fast Turn Off Thyristor and Fast Recovery Diode Module

Voltage versus Current Tc=85 Deg C per die.

Part #	It(av)	600-1800V	1900-2500V
MHC55	55A	X	
MKx/MHx75	75A	X	
MKx/MHx150	150A	X	
MKx/MHx200	200A	X	
MKx/MHx250	250A	X	
MKx/MHx300	300A	X	
MKx/MHx400	400A	X	
MKx/MHx70	70A		X

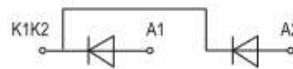


Fast Recovery Diode Module

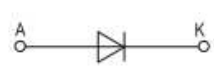
Voltage versus Current Tc=85 Deg C per die.

Part #	It(av)	600-1800V	Trr (usec)
MZx75	75A	X	1.5
MZx150	150A	X	2
MZx200	200A	X	3
MZx250	250A	X	4
MZx300	300A	X	4
MZx300	300A	X	5
MZx400	400A	X	5

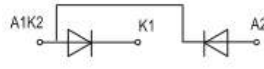
MZK



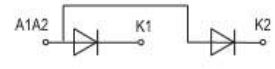
MZ



MZC



MZA



Why Pressure contact? What are the benefits?

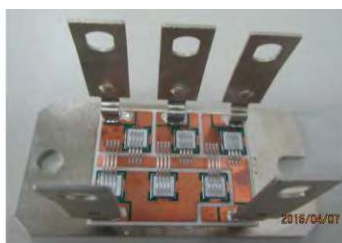
Pressure contact designs can:

- Eradicate the 2 main failure mechanisms of solder base modules – wire bond fatigue and die solder cracking.
- have higher surge current ratings due to improved contact with the die and improved mechanical strength.
- have Thermal / Power Cycling improvements with longer Mean Time Between Failure (MTBF).
- Can provide higher voltage, higher current designs than solder base due to restrictions in solder die tech.
- Provide a solution for high power cycling applications (such as resistive welding) where Solder base technology fail.

Pressure contact design – no wire bonds, no solder fixation

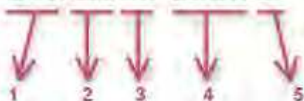


Solder base design – wire bond break and fixed soldered dies



Power Module Part Number Designation and additional parts:

MTC 110-16- 223F3 B

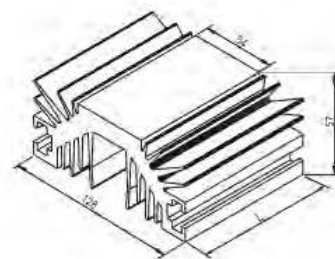
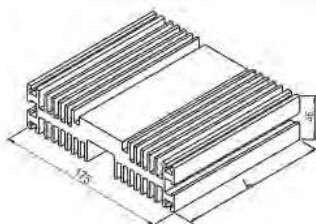
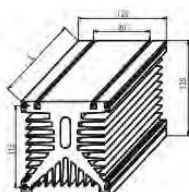
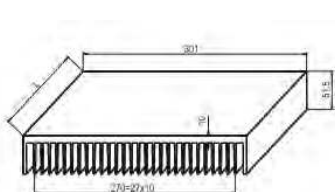


- 1: Circuit topology such as MT, MTC, MFC, MD, MDC and MDS
- 2: Rated current (I_{TAV} [A])
- 3: Voltage class, $V_{DRM}/V_{RRM} = \text{CLASS} \times 100$ [V]
- 4: Housing type, please refer to Fig. 2
- 5: Option, with "B" means the sequence of the gate terminal (G) and auxiliary cathode terminal (K) is in order of G1/K1, K2/G2.

Please note keyed connector gate leads are available upon request:



HEATSINKS – Diamond Power also provide various Heatsink Solutions for Press Pack or Module Devices. Please send us your enquiry



And many more..

