

# Thyristor & Diode Modules

March 2013 – Issue 4

**IXYS UK's range of isolated base pressure contact thyristor and diode modules, designed to industry standard outlines is perfect for all your needs.**

Available in 7 standard configurations, all devices offer full pressure contact construction for maximum reliability and performance at rated current. These products have a  $V_{RRM}/V_{DRM}$  between 1200V to 3600V and are available as dual thyristor, dual diode or thyristor/diode options. Single diode/single thyristor options are also available.

### Introducing the new io7 diode/thyristor module range

These modules are available with average currents up to 1080A and voltage ratings up to 3600V. Included in this range is the reverse MCR configuration of dual thyristor module, specifically designed for ease of mounting two modules as an AC switch

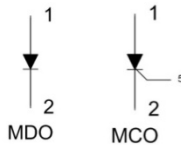
Other configurations are available on request. Please consult the Chippenham factory for more information.

### Features and benefits

- $V_{RRM}/V_{DRM}$  up to 3600V
- Electrically isolated baseplate
- Industry standard package
- UL recognition
- Simplifies mechanical design
- Rapid assembly
- Full pressure contact construction



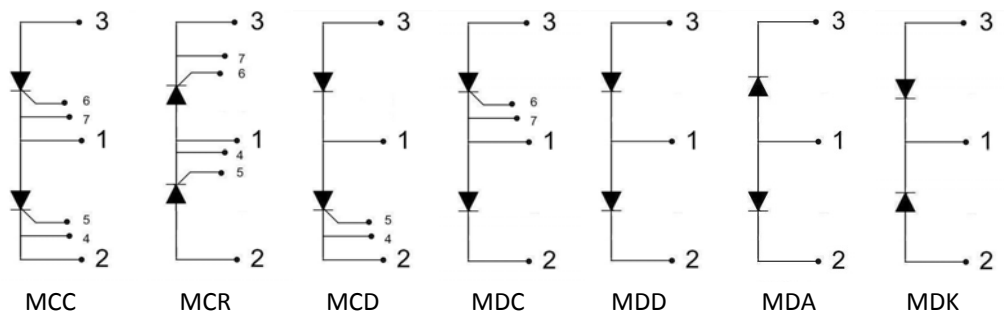
2 configuration of single diode/thyristor available



### Applications



### Configurations



## New Module Range

Our new range of thyristor and diode modules expands on our current selection, with improved thermal and surge ratings. The dual thyristor and diode modules are also available in an MCR reverse configuration for ease of mounting two modules as an AC switch



### Dual Thyristor Modules

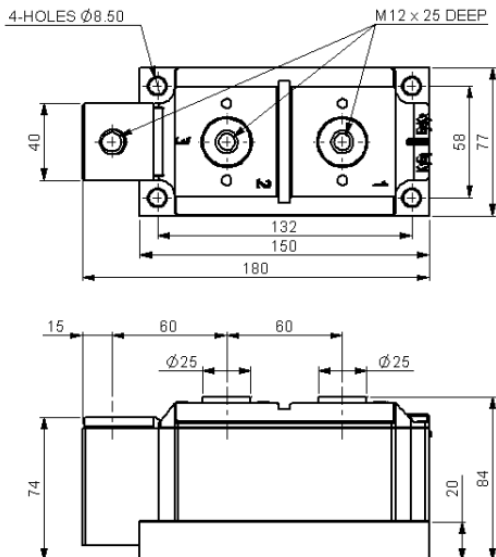
Part No.	V <sub>RRM</sub> V <sub>DRM</sub>	I <sub>TAV</sub>	@ T <sub>C</sub>	I <sub>TRMS</sub>	I <sub>TSM</sub> 125°C 10ms	V <sub>T0</sub>	r <sub>T</sub>	T <sub>VJM</sub>	R <sub>thJC</sub> per Die	R <sub>thCH</sub> per Die	Fig. No.
	V	A	°C	A	A	V	mΩ	°C	K/W	K/W	
MCC500-xxi o7	3000-3600	500	85	1181	18000	1.079	0.422	125	0.0500	0.0160	W88
MCR500-xxi o7	3000-3600	500	85	1181	18000	1.079	0.422	125	0.0500	0.0160	W88
MCC580-28i o7	2800	581	85	1372	21000	0.926	0.313	125	0.0500	0.0160	W88
MCR580-28i o7	2800	581	85	1372	21000	0.926	0.313	125	0.0500	0.0160	W88
MCC650-24i o7	2400	646	85	1542	24500	0.874	0.227	125	0.0500	0.0160	W88
MCR650-24i o7	2400	646	85	1542	24500	0.874	0.227	125	0.0500	0.0160	W88
MCC720-xxi o7	1400-1800	719	85	1633	28000	0.823	0.241	125	0.0500	0.0160	W88
MCR720-xxi o7	1400-1800	719	85	1633	28000	0.823	0.241	125	0.0500	0.0160	W88

### Dual Diode Modules

Part No.	V <sub>RRM</sub>	I <sub>FAV</sub>	@ T <sub>C</sub>	I <sub>FRMS</sub>	I <sub>FSM</sub> 150°C 10ms	V <sub>T0</sub>	r <sub>T</sub>	T <sub>VJM</sub>	R <sub>thJC</sub> per die	R <sub>thCK</sub> per die	Fig. No.
	V	A	°C	A	A	V	mΩ	°C	K/W	K/W	
MDD1080-xxN7	1800-2800	1080	85	2235	32000	0.782	0.157	150	0.0500	0.0160	W88
MDA1080-xxN7	1800-2800	1080	85	2235	32000	0.782	0.157	150	0.0500	0.0160	W88
MDK1080-xxN7	1800-2800	1080	85	2235	32000	0.782	0.157	150	0.0500	0.0160	W88

### Thyristor/Diode Modules

Part No.	V <sub>RRM</sub> V <sub>DRM</sub>	I <sub>TAV</sub>	@ T <sub>C</sub>	I <sub>TRMS</sub>	I <sub>TSM</sub> 125°C 10ms	V <sub>T0</sub>	r <sub>T</sub>	T <sub>VJM</sub>	R <sub>thJC</sub> per Die	R <sub>thCH</sub> per Die	Fig. No.
	V	A	°C	A	A	V	mΩ	°C	K/W	K/W	
MCD500-xxi o7	3000-3600	500	85	1181	18000	1.079	0.422	125	0.05	0.0160	W88
MDC500-xxi o7	3000-3600	500	85	1181	18000	1.079	0.422	125	0.05	0.0160	W88
MCD580-28i o7	2800	581	85	1372	21000	0.926	0.313	125	0.05	0.0160	W88
MDC580-28i o7	2800	581	85	1372	21000	0.926	0.313	125	0.05	0.0160	W88
MCD650-24i o7	2400	646	85	1542	24500	0.874	0.227	125	0.05	0.0160	W88
MDC650-24i o7	2400	646	85	1542	24500	0.874	0.227	125	0.05	0.0160	W88
MCD720-xxi o7	1400-1800	719	85	1633	28000	0.823	0.241	125	0.05	0.0160	W88
MDC720-xxi o7	1400-1800	719	85	1633	28000	0.823	0.241	125	0.05	0.0160	W88



xx in part number indicates voltage grade –  $V_{RRM}/V_{DRM} \div 100$

W88 – 150A124

## Thyristor/Diode Modules – Standard Range

### Dual/Single Thyristor Modules

Part No.	$V_{RRM}$ $V_{DRM}$ V	$I_{TAV}$ A	@ $T_C$ °C	$I_{TRMS}$ A	$I_{TSM}$ 125°C 10ms A	$V_{TO}$ V	$r_T$ mΩ	$T_{VJM}$ °C	$R_{thJC}$ per Die K/W	$R_{thCH}$ per Die K/W	Fig. No.
MCC320-xxi o2	3000-3600	327	85	765	5000	1.150	0.800	125	0.0650	0.2000	W74
MCC431-xxi o2	2000-2400	429	85	1020	10900	1.000	0.410	125	0.0620	0.0200	W74
MCC501-xxi o2	1200-1800	503	85	1195	14500	0.850	0.300	125	0.0620	0.0200	W74
MCC552-xxi o2	1200-1600	550	85	1300	15800	0.770	0.259	125	0.0620	0.0200	W74
MCO741-22i o1	2200	765	85	2315	29000	0.850	0.210	125	0.042	0.0100	W73
MCO801-xxi o1	1400-1800	830	85	2530	30000	0.800	0.170	125	0.042	0.0100	W73

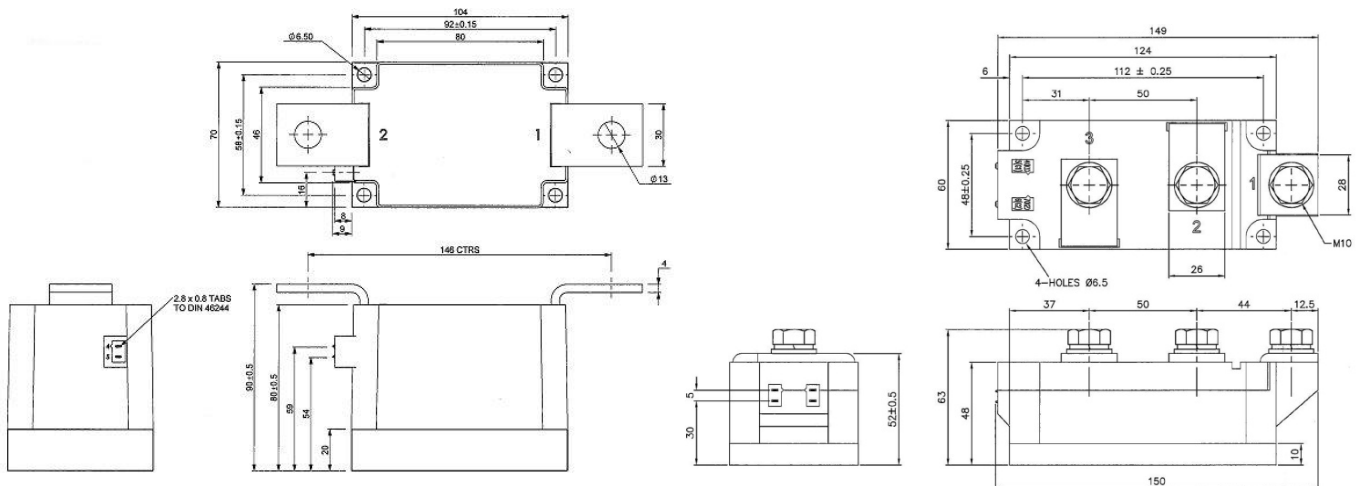
### Dual/Single Diode Modules

Part No.	$V_{RRM}$ V	$I_{FAV}$ A	@ $T_C$ °C	$I_{FRMS}$ A	$I_{FSM}$ 150°C 10ms A	$V_{TO}$ V	$r_T$ mΩ	$T_{VJM}$ °C	$R_{thJC}$ per die K/W	$R_{thCK}$ per die K/W	Fig. No.
MDD630-xxN2	3000-3600	632	85	1273	11800	0.800	0.500	150	0.0620	0.0200	W74
MDA630-xxN2	3000-3600	632	85	1273	11800	0.800	0.500	150	0.0620	0.0200	W74
MDK630-xxN2	3000-3600	632	85	1273	11800	0.800	0.500	150	0.0620	0.0200	W74
MDD 710-xxN2	2200-2600	708	85	1440	12750	0.800	0.350	150	0.0620	0.0200	W74
MDA 710-xxN2	2200-2600	708	85	1440	12750	0.800	0.350	150	0.0620	0.0200	W74
MDK 710-xxN2	2200-2600	708	85	1440	12750	0.800	0.350	150	0.0620	0.0200	W74
MDD 810-xxN2	1200-1800	807	85	1661	17250	0.780	0.230	150	0.0620	0.0200	W74
MDA 810-xxN2	1200-1800	807	85	1661	17250	0.780	0.230	150	0.0620	0.0200	W74
MDK 810-xxN2	1200-1800	807	85	1661	17250	0.780	0.230	150	0.0620	0.0200	W74
MDO1201-xxN1	1400-2200	1520	85	3665	36000	0.800	0.100	160	0.0420	0.0100	W73

### Thyristor/Diode Modules

Part No.	$V_{RRM}$ $V_{DRM}$ V	$I_{TAV}$ A	@ $T_C$ °C	$I_{TRMS}$ A	$I_{TSM}$ 125°C 10ms A	$V_{TO}$ V	$r_T$ mΩ	$T_{VJM}$ °C	$R_{thJC}$ per Die K/W	$R_{thCH}$ per Die K/W	Fig. No.
MCD320-xxi o2	3000-3600	327	85	765	5000	1.150	0.800	125	0.065	0.0200	W74
MDC320-xxi o2	3000-3600	327	85	765	5000	1.150	0.800	125	0.065	0.0200	W74
MCD431-xxi o2	2000-2400	429	85	1020	10900	1.000	0.410	125	0.062	0.0200	W74
MDC431-xxi o2	2000-2400	429	85	1020	10900	1.000	0.410	125	0.062	0.0200	W74
MCD501-xxi o2	1200-1800	503	85	1195	14500	0.850	0.300	125	0.062	0.0200	W74
MDC501-xxi o2	1200-1800	503	85	1195	14500	0.850	0.300	125	0.062	0.0200	W74
MCD552-xxi o2	1200-1600	550	85	1300	15800	0.770	0.259	125	0.062	0.0200	W74
MDC552-xxi o2	1200-1600	550	85	1300	15800	0.770	0.259	125	0.062	0.0200	W74

xx in part number indicates voltage grade –  $V_{RRM}/V_{DRM} \div 100$



W73 – 150A123

W74 – 150A123

## Water Cooled Modules

IXYS UK's range of water cooled modules feature a direct cooled base, with no extra interface to the die allowing for more efficient cooling, giving an enhanced average current rating

### Dual Thyristor Modules

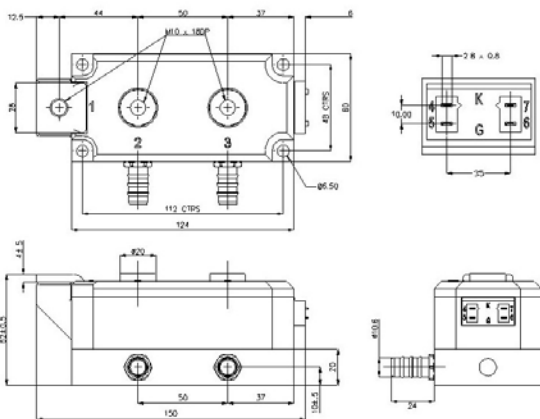
Part No.	$V_{RRM}$ $V_{DRM}$ V	$I_{TAV}$ A	@ $T_C$ °C	$I_{TRMS}$ A	$I_{TSM}$ 125°C 10ms A	$V_{TO}$ V	$r_T$ mΩ	$T_{VJM}$ °C	$R_{thjw}$ per Die K/W	Fig. No.
MCA600-22i01W	2200	600	40	1116	16500	0.880	0.460	125	0.0900	W64
MCC600-22i01W	2200	600	40	1116	16500	0.880	0.460	125	0.0900	W64
MCK600-22i01W	2200	600	40	1116	16500	0.880	0.460	125	0.0900	W64
MCC700-xxi01W	1400-1800	700	42	1331	16500	0.850	0.270	125	0.0900	W64
MCA700-xxi01W	1400-1800	700	42	1331	16500	0.850	0.270	125	0.0900	W64
MCK700-xxi01W	1400-1800	700	42	1331	16500	0.850	0.270	125	0.0900	W64

### Dual Diode Modules

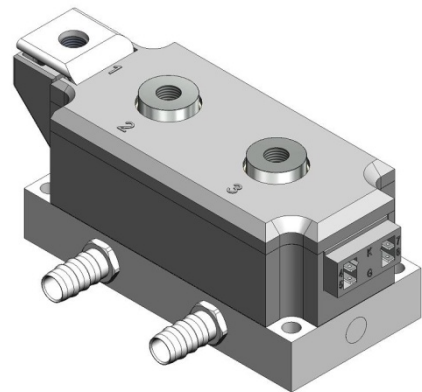
Part No.	$V_{RRM}$ $V_{DRM}$ V	$I_{FAV}$ A	@ $T_C$ °C	$I_{FRMS}$ A	$I_{FSM}$ 150°C 10ms A	$V_{TO}$ V	$r_T$ mΩ	$T_{VJM}$ °C	$R_{thjw}$ per Die K/W	Fig. No.
MDD950-xxN1W	1400-2200	950	45	1773	21800	0.750	0.200	150	0.0900	W64
MDA950-xxN1W	1400-2200	950	45	1773	21800	0.750	0.200	150	0.0900	W64
MDK950-xxN1W	1400-2200	950	45	1773	21800	0.750	0.200	150	0.0900	W64

### Thyristor/Diode Modules

Part No.	$V_{RRM}$ $V_{DRM}$ V	$I_{TAV}$ A	@ $T_C$ °C	$I_{TRMS}$ A	$I_{TSM}$ 125°C 10ms A	$V_{TO}$ V	$r_T$ mΩ	$T_{VJM}$ °C	$R_{thjw}$ per Die K/W	Fig. No.
MCD600-22i01W	2200	600	40	1116	16500	0.880	0.460	125	0.0900	W64
MDC600-22i01W	2200	600	40	1116	16500	0.880	0.460	125	0.0900	W64
MCD700-xxo1W	1400-1800	700	42	1331	16500	0.850	0.270	125	0.0900	W64
MDC700-xxi01W	1400-1800	700	42	1331	16500	0.850	0.270	125	0.0900	W64



W64 – 150A113



Certificate FM26085

IXYS UK Westcode Ltd's BS EN ISO9001 quality system is registered by BSI



Langley Park Way  
Chippenham, SN15 1GE  
United Kingdom  
Tel: +44 (0)1249 444524  
Fax: +44 (0)1249 659448  
E-mail: sales@ixysuk.net



Edisonstr. 15  
D-68623 Lampertheim  
Germany  
Tel: +49 (0) 6206 503-0  
Fax: +44 (0) 6206 503627  
E-mail: marcom@ixys.de

We are supported by a global network of local offices, representatives and distributors. Please visit our website for more information