ADVANCE PRODUCT BRIEF

WESTCODE
An IXYS Company

3rd Generation Medium Voltage Thyristors

May 2011 Issue 7

Medium voltage applications place additional demands on phase control thryistors. As voltages increase, so do switching losses, stored charge and turn-off times to a point where they become significant in line frequency applications. To meet these demands we have developed a comprehensive range of thyristors optimised for medium voltage applications.

Unlike conventional phase control devices, these Medium Voltage Thyristors incorporate distributed gate architecture for improved turn-on characteristics and di/dt capability along with additional processing to reduce tq and recovery time.

6.5kV 3rd Generation Medium Voltage Thyristors are available with silicon diameters from 42mm to 100mm making them particularly suitable for high power converters such as medium voltage drives, medium voltage soft-starts and utility applications such as HVDC, static VAr compensators, excitation and transfer switches.

These 3rd Generation devices offer improved current rating by maximising Si content over our 2nd Generation products.

Full product launch during 2011

5 Current Ratings

2 package height options

Improved package design

Features and Benefits

Patented distributed gate architecture ensures excellent switching performance over a wide range of voltage, current and di/dt. Device lifetime is also engineered to achieve an optimum balance between conduction losses, commutation losses and turn-off time to give maximum power handling from line frequency to 400 Hz. This also gives significant benefits when series or parallel connected devices are required.

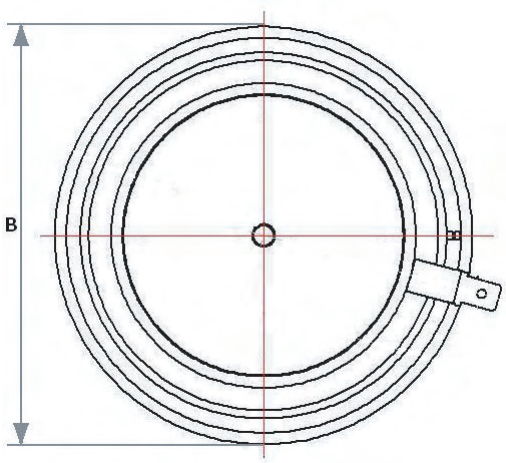
Applications

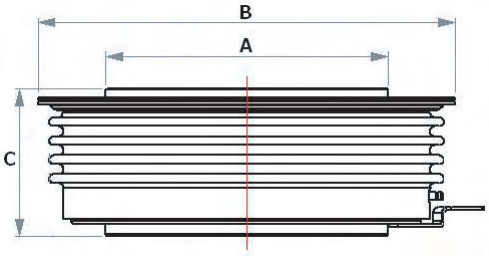
Typical applications for these products include high power converters such as medium voltage drives, soft-starts and utility applications such as HVDC, static VAr compensators, excitation and transfer switches. We recognise the importance of reliability in these large, capital intensive applications and as a result we subject these devices to extended levels of both routine and type testing to ensure that products offer years of trouble free service.

Summary Table

Part No.	V_{DRM} V_{RRM} V	I_{TAV} T_K=55°C A	I_{TSM} 10ms 1/2 sine V_R = ≤ 60% V_{RRM} kA	I^2t A^2s	typ t_q @ 200V/µs ms	Typ. Reverse Recovery Charge T_{JM}, 50% Chord Q_{rr} mC	@I_{TM} A	@-di/dt A/µs	V_{T0} @T_{JM} V	r_T mΩ	T_{JM} °C	R_{thJK} 180° Sine K/W	120° Rect. K/W	Outline
KX265QA600	6000	560	6	180x10^3	0.7	5.5	500	10	1.50	1.50	115	0.03	0.037	A
KX265QA650	6500	560	6	180x10^3	0.7	5.5	500	10	1.50	1.50	115	0.03	0.037	A
KX265QE600	6000	560	6	180x10^3	0.7	5.5	500	10	1.50	1.50	115	0.03	0.037	B
KX265QE650	6500	560	6	180x10^3	0.7	5.5	500	10	1.50	1.50	115	0.03	0.037	B
KX368MA600	6000	900	10	500x10^3	1	10	1000	10	1.50	0.80	115	0.02	0.022	C
KX368MA650	6500	900	10	500x10^3	1	10	1000	10	1.50	0.80	115	0.02	0.022	C
KX368ME600	6000	900	10	500x10^3	1	10	1000	10	1.50	0.80	115	0.02	0.022	D
KX368ME650	6500	900	10	500x10^3	1	10	1000	10	1.50	0.80	115	0.02	0.022	D
KX369HA600	6000	1500	16	1.28x10^6	1.2	11	1500	10	1.50	0.50	115	0.012	0.013	E
KX369HA650	6500	1500	16	1.28x10^6	1.2	11	1500	10	1.50	0.50	115	0.012	0.013	E
KX369HE600	6000	1500	16	1.28x10^6	1.2	11	1500	10	1.50	0.50	115	0.012	0.013	F
KX369HE650	6500	1500	16	1.28x10^6	1.2	11	1500	10	1.50	0.50	115	0.012	0.013	F
KX364TA600	6000	2350	27	3.65x10^6	1.5	15	2500	10	1.50	0.26	115	0.0085	0.0092	G
KX364TA650	6500	2350	27	3.65x10^6	1.5	15	2500	10	1.50	0.26	115	0.0085	0.0092	G
KX364TE600	6000	2350	27	3.65x10^6	1.5	15	2500	10	1.50	0.26	115	0.0085	0.0092	H
KX364TE650	6500	2350	27	3.65x10^6	1.5	15	2500	10	1.50	0.26	115	0.0085	0.0092	H
KX359FA600	6000	3200	39	7.6x10^6	1.8	15	3000	10	1.50	0.175	115	0.0065	0.0089	I
KX359FA650	6500	3200	39	7.6x10^6	1.8	15	3000	10	1.50	0.175	115	0.0065	0.0089	I
KX359FE600	6000	3200	39	7.6x10^6	1.8	15	3000	10	1.50	0.175	115	0.0065	0.0089	J
KX359FE650	6500	3200	39	7.6x10^6	1.8	15	3000	10	1.50	0.175	115	0.0065	0.0089	J

Outline	A mm	B mm	C mm
A	38	59	26
B	38	59	36
C	50	74	26
D	50	74	36
E	66	100	26
F	66	100	36
G	75	112	26
H	75	112	36
I	99	144	26
J	99	144	36





Certificate FM26085

Westcode Semiconductors Limited's BS EN ISO 9001 Quality System is registered by BSI.

WESTCODE
An IXYS Company

IXYS

Contact us:

Westcode Semiconductors Ltd
Langley Park Way
Chippenham SN15 1GE
United Kingdom
Tel: +44 (0)1249 444524
Fax: +44 (0)1249 659448
Email: wsl.sales@westcode.com

IXYS Semiconductors GmbH
Edisonstr. 15
D-68623 Lampertheim
Germany
Tel: +49 (0) 6206 503-0
Fax: +49 (0) 6206 503627
Email: marcom@ixys.de

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