

Distributed Gate Thyristors

IXYS UK Westcode Ltd is recognised as the worldwide leader in distributed gate technology.

These devices are available with blocking voltages to 4.5kV, average current to 4kA, and t_q from 10 to 300 μ s. The distributed gate design and lifetime control features give these devices both high di/dt capability and fast, low recovery turn-off, while maintaining a low on-state voltage drop. Ideally suited to applications including: induction power supplies, high frequency inverters/converters, resonant power supplies and pulsed power.



Applications

- Induction power supplies for:
 - Melting
 - Billet heating
 - Surface conditioning
- Resonant power supplies
- Pulsed power

Features and benefits

- High average current ratings
- Low thermal resistance
- Double side cooling
- Optimised parts have higher surge current rating and enhanced mechanical design for maximum power to package ratio
- Industry standard, fully hermetic packages
- Suitable for applications up to 20kHz



New products for 2017

As part of IXYS UK's program of continuous improvement, we are proud to introduce four new distributed gate thyristors to our line up for 2017.

These new products are available with electrode diameters ranging from 47mm to 85mm, Voltage ratings from 1800V to 2800V and Average current ratings from 1055A to 5370A.

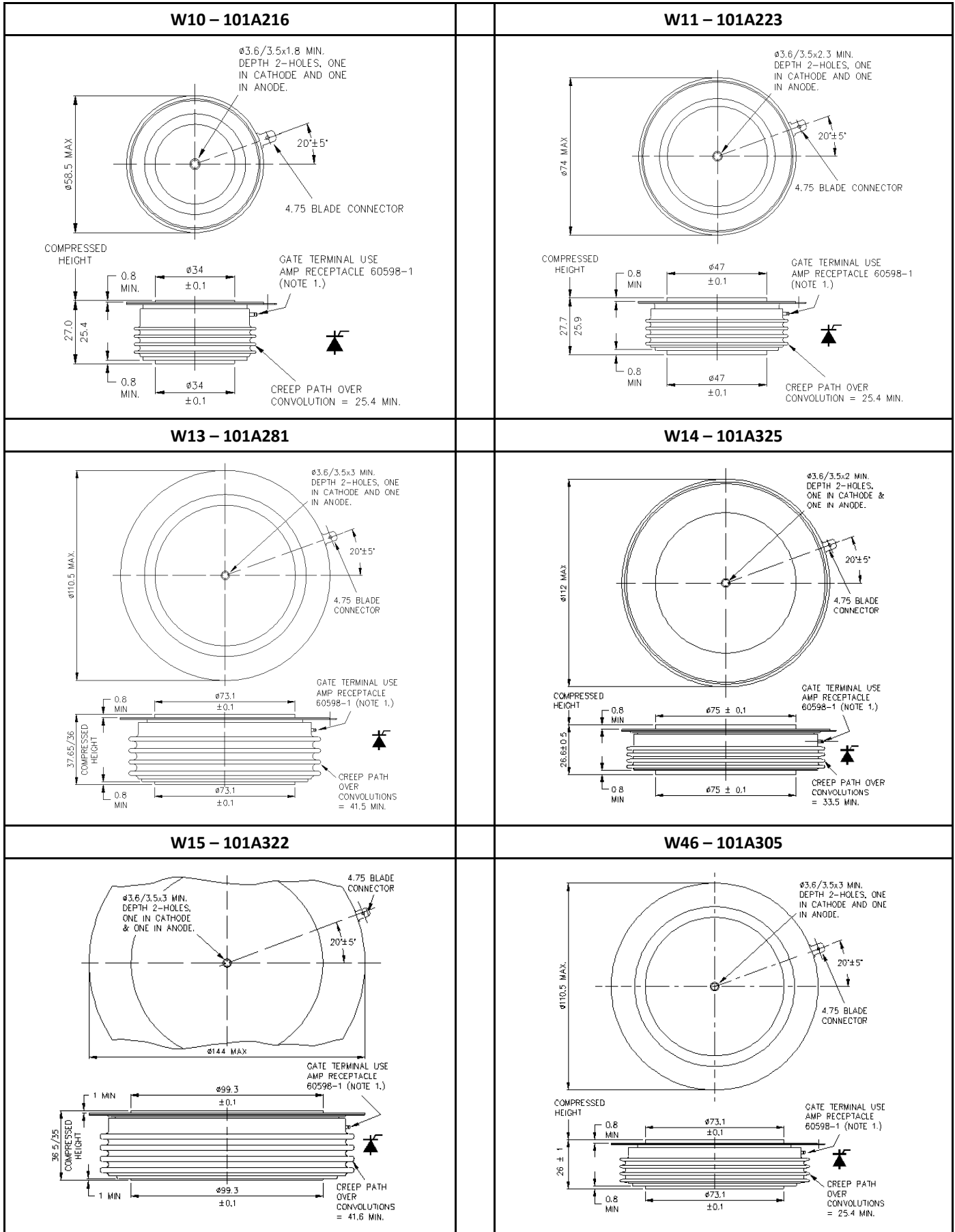


These devices are constructed using an all diffused silicon slice, fused to a metal disc, encapsulated in industry standard packages offering higher current density and improved turn-off characteristics. The thermal capacity of the metal disc and its direct fusion to the silicon slice enhances performance, presenting excellent transient thermal characteristics and higher surge current ratings.

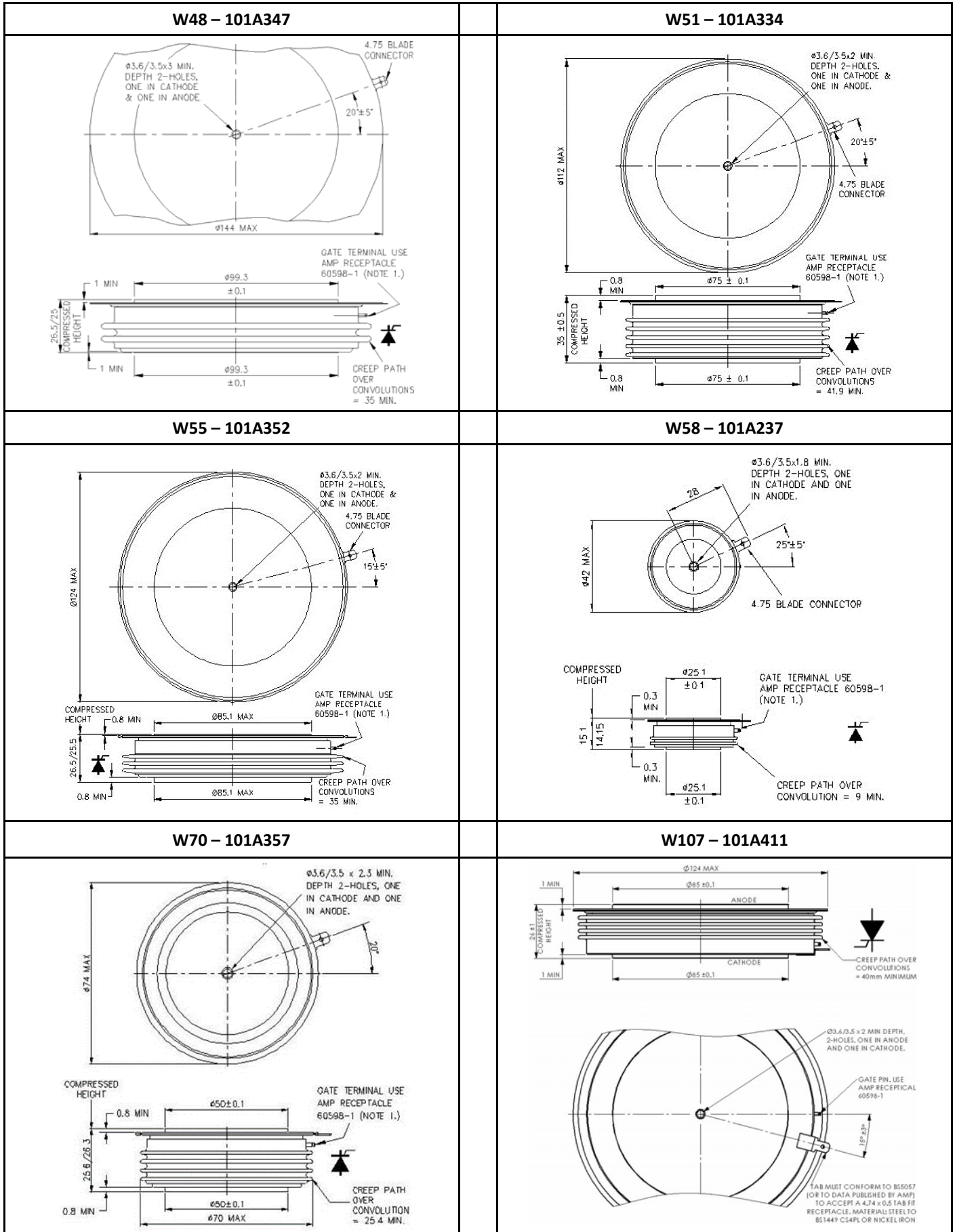
Part No.	V _{DRM}	V _{RRM}	I _{TAV} T _k =55°C	I _{TSM}	I ² t 10ms 1/2 sine V _R - ≤ 60% V _{RRM}	t _q @ 200V/μs	Typ. Reverse Recovery Charge			V _{T0}	r _T	T _{JM}	R _{thJK} 180° Sine	Fig. No.
	V	V	A	A	A ² s	μs	Q _{rr} μC	@ I _{TM} A	@ -di/dt A/μs	@ T _{JM} V	mΩ	°C	K/W	
R1045NC28L	2800	2800	1055	12500	781 x 10 ³	60	950	1000	60	1.640	0.430	125	0.0240	W11
R1045NC28M	2800	2800	1055	12500	781 x 10 ³	70	950	1000	60	1.640	0.430	125	0.0240	W11
R1045NC32L	3200	3200	1055	12500	781 x 10 ³	60	950	1000	60	1.640	0.430	125	0.0240	W11
R1045NC28M	3200	3200	1055	12500	781 x 10 ³	70	950	1000	60	1.640	0.430	125	0.0240	W11
R2295HA22F	2200	2200	2295	30000	4.50 x 10 ⁶	30	875	1000	60	1.690	0.190	125	0.0110	W79
R2295HA22H	2200	2200	2295	30000	4.50 x 10 ⁶	40	875	1000	60	1.690	0.190	125	0.0110	W79
R3115TJ24J #	2800	2400	3115	56000	15.68 x 10 ⁶	50	3350	2000	60	1.884	0.120	125	0.0080	W81
R3115TJ24K #	2800	2400	3115	56000	15.68 x 10 ⁶	60	3350	2000	60	1.884	0.120	125	0.0080	W81
R3115TJ28J #	2800	2800	3115	56000	15.68 x 10 ⁶	50	3350	2000	60	1.884	0.120	125	0.0080	W81
R3115TJ28K #	2800	2800	3115	56000	15.68 x 10 ⁶	60	3350	2000	60	1.884	0.120	125	0.0080	W81
R5370EA18J #	1800	1800	5370	70000	24.5 x 10 ⁶	50	3000	1000	60	1.661	0.071	125	0.0050	W107
R5370EA18K #	1800	1800	5370	70000	24.5 x 10 ⁶	60	3000	1000	60	1.661	0.071	125	0.0050	W107
R5370EA22J #	2200	2200	5370	70000	24.5 x 10 ⁶	50	3000	1000	60	1.661	0.071	125	0.0050	W107
R5370EA22K #	2200	2200	5370	70000	24.5 x 10 ⁶	60	3000	1000	60	1.661	0.071	125	0.0050	W107

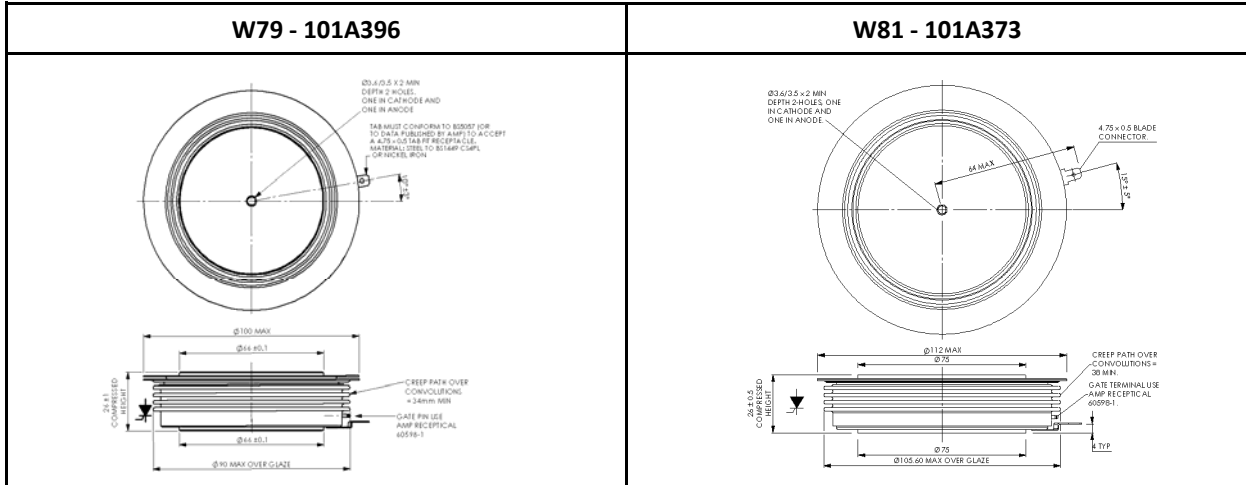
- New bonded designs for improved thermal performance.

Outlines



Outlines



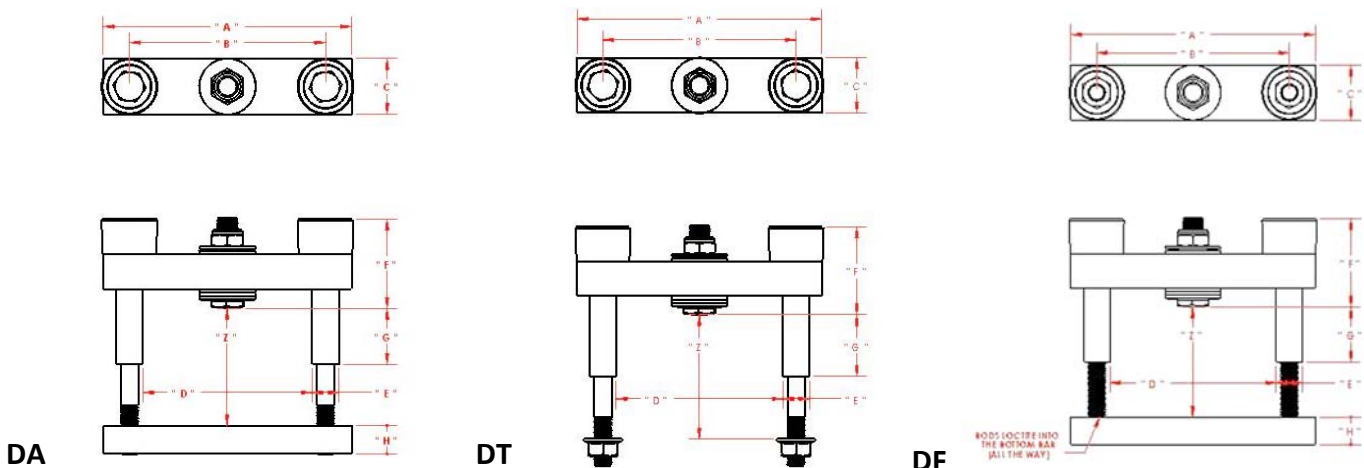


Recommended clamps for Distributed gate thyristors

IXYS UK offers a diverse range of clamping option for its semiconductors. The clamps listed below are selected as ideal choices to complement each phase control thyristor based on its outline dimensions' and recommended clamped pressure range

Housing code	Drawing number	Electrode diameter (mm)	Max. capsule height (mm)	Recommended clamp	Figure
YC	W58	25.1	15.1	XSK0900D#042Mxxx	A
LC	W10	34	27	XSK1500D#065Mxxx	A
NC	W11	47	27.7	XSK2200D#075Mxxx	A
MC	W70	50	26.3	XSK3000D#087Mxxx	A
HA	W79	66	26.5	XSK3800DA116Mxxx	B
ZC	W13	73.1	37.65	XSK3800DA116Mxxx	B
ZD	W46	73.1	27	XSK3800DA116Mxxx	B
TC	W14	75	27.1	XK7000DA128ML	C
TD	W51	75	35.5	XK7000DA128ML	C
TJ	W81	75	26.5	XK7000DA128ML	C
EA	W107	85	26	XK9000D/SA160M	D
EC	W55	85.1	26.5	XK7000DA128ML	C
FC	W15	99.3	36.5	XK9000D/SA160M	D
FD	W48	99.3	26	XK9000D/SA160M	D

Figure A



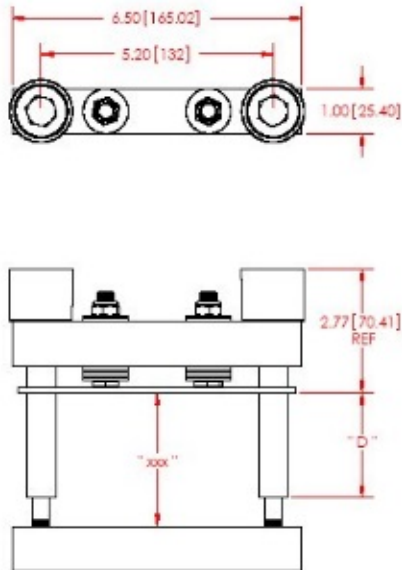
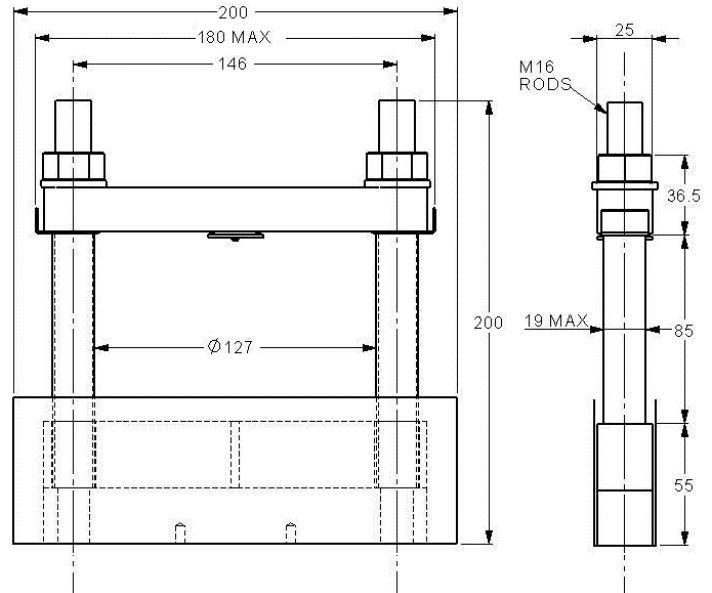
Part #'s	A	B	C	D	E	F	G	H	" Z " min	" Z " max	Bolt Type
XSK 0900 xx 042 M 025	69.85	54.00	15.88	45.00	8.64	32.00	14.98	12.70	19.05	25.40	M6
XSK 0900 xx 042 M 031	69.85	54.00	15.88	45.00	8.64	32.00	14.98	12.70	25.40	31.75	M6
XSK 0900 xx 042 M 038	69.85	54.00	15.88	45.00	8.64	32.00	19.81	12.70	31.75	38.10	M6
XSK 0900 xx 042 M 044	69.85	54.00	15.88	45.00	8.64	32.00	21.84	12.70	38.10	44.45	M6
XSK 0900 xx 042 M 050	69.85	54.00	15.88	45.00	8.64	32.00	24.89	12.70	44.45	50.80	M6
XSK 0900 xx 042 M 057	69.85	54.00	15.88	45.00	8.64	32.00	29.97	12.70	50.80	57.15	M6
XSK 0900 xx 042 M 063	69.85	54.00	15.88	45.00	8.64	32.00	32.00	12.70	57.15	63.50	M6
XSK 0900 xx 042 M 069	69.85	54.00	15.88	45.00	8.64	32.00	34.79	12.70	63.50	69.85	M6
XSK 0900 xx 042 M 076	69.85	54.00	15.88	45.00	8.64	32.00	39.87	12.70	69.85	76.20	M6

Part #'s	A	B	C	D	E	F	G	H	" Z " min	" Z " max	Bolt Type
XSK 1500 xx 065 M 038	104.39	79.00	25.40	65.00	12.19	48.48	25.65	12.70	31.75	38.10	M8
XSK 1500 xx 065 M 044	104.39	79.00	25.40	65.00	12.19	48.48	28.70	12.70	38.10	44.45	M8
XSK 1500 xx 065 M 057	104.39	79.00	25.40	65.00	12.19	48.48	35.81	12.70	50.80	57.15	M8
XSK 1500 xx 065 M 063	104.39	79.00	25.40	65.00	12.19	48.48	38.60	12.70	57.15	63.50	M8
XSK 1500 xx 065 M 076	104.39	79.00	25.40	65.00	12.19	48.48	43.68	12.70	69.85	76.20	M8
XSK 1500 xx 065 M 082	104.39	79.00	25.40	65.00	12.19	48.48	46.73	12.70	76.20	82.55	M8
XSK 1500 xx 065 M 088	104.39	79.00	25.40	65.00	12.19	48.48	49.78	12.70	82.55	88.90	M8
XSK 1500 xx 065 M 095	104.39	79.00	25.40	65.00	12.19	48.48	52.57	12.70	88.90	95.25	M8
XSK 1500 xx 065 M 101	104.39	79.00	25.40	65.00	12.19	48.48	55.62	12.70	95.25	101.60	M8
XSK 1500 xx 065 M 107	104.39	79.00	25.40	65.00	12.19	48.48	58.67	12.70	101.60	107.95	M8
XSK 1500 xx 065 M 114	104.39	79.00	25.40	65.00	12.19	48.48	61.72	12.70	107.95	114.30	M8
XSK 1500 xx 065 M 120	104.39	79.00	25.40	65.00	12.19	48.48	64.77	12.70	114.30	120.65	M8

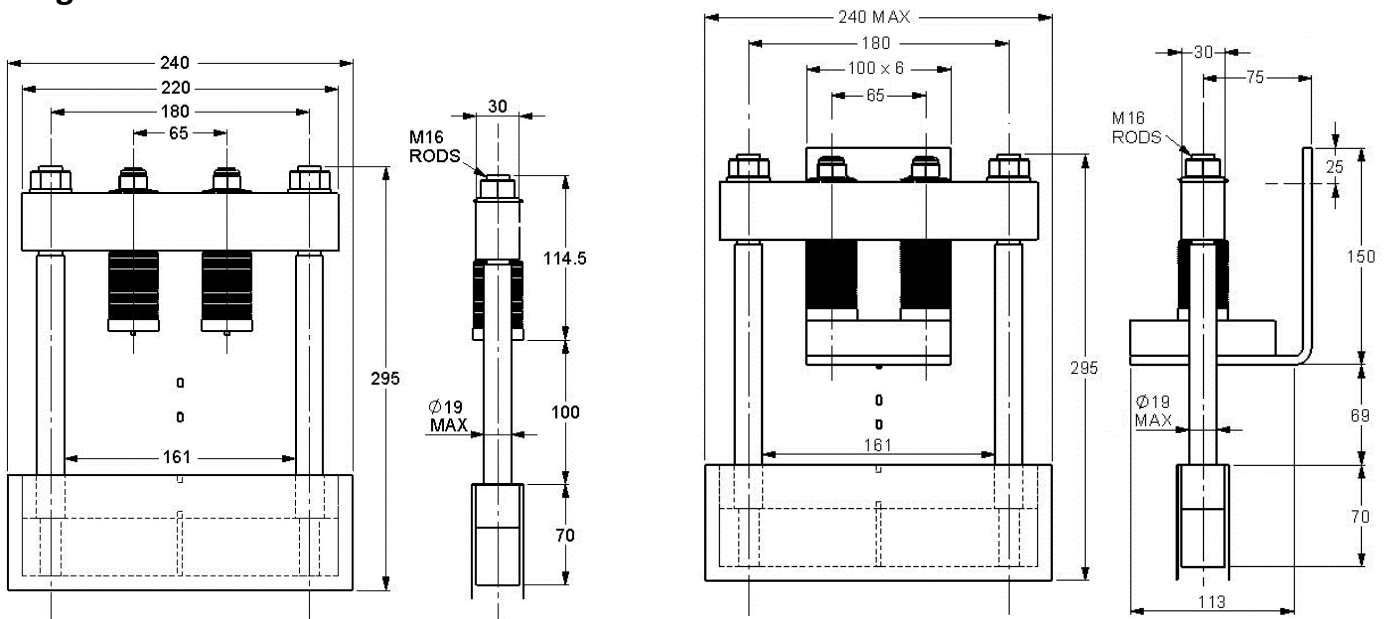
Part #'s	A	B	C	D	E	F	G	H	" Z " min	" Z " max	Bolt Type
XSK 2200 xx 075 M 038	112.78	89.00	25.40	75.00	12.19	37.37	24.63	12.70	31.75	38.10	M8
XSK 2200 xx 075 M 044	112.78	89.00	25.40	75.00	12.19	37.37	27.68	12.70	38.10	44.45	M8
XSK 2200 xx 075 M 057	112.78	89.00	25.40	75.00	12.19	37.37	33.52	12.70	50.80	57.15	M8
XSK 2200 xx 075 M 063	112.78	89.00	25.40	75.00	12.19	37.37	36.57	12.70	57.15	63.50	M8
XSK 2200 xx 075 M 076	112.78	89.00	25.40	75.00	12.19	37.37	41.65	12.70	69.85	76.20	M8
XSK 2200 xx 075 M 082	112.78	89.00	25.40	75.00	12.19	37.37	45.72	12.70	76.20	82.55	M8
XSK 2200 xx 075 M 088	112.78	89.00	25.40	75.00	12.19	37.37	48.51	12.70	82.55	88.90	M8
XSK 2200 xx 075 M 095	112.78	89.00	25.40	75.00	12.19	37.37	51.56	12.70	88.90	95.25	M8
XSK 2200 xx 075 M 101	112.78	89.00	25.40	75.00	12.19	37.37	54.61	12.70	95.25	101.60	M8
XSK 2200 xx 075 M 107	112.78	89.00	25.40	75.00	12.19	37.37	57.65	12.70	101.60	107.95	M8
XSK 2200 xx 075 M 114	112.78	89.00	25.40	75.00	12.19	37.37	60.70	12.70	107.95	114.30	M8
XSK 2200 xx 075 M 120	112.78	89.00	25.40	75.00	12.19	37.37	63.75	12.70	114.30	120.65	M8

Part #'s	A	B	C	D	E	F	G	H	" Z " min	" Z " max	Bolt Type
XSK 3000 xx 087 M 038	127.00	102.00	25.40	87.00	12.18	35.79	24.63	19.05	31.75	38.10	M8
XSK 3000 xx 087 M 044	127.00	102.00	25.40	87.00	12.18	35.79	27.43	19.05	38.10	44.45	M8
XSK 3000 xx 087 M 057	127.00	102.00	25.40	87.00	12.18	35.79	33.52	19.05	50.80	57.15	M8
XSK 3000 xx 087 M 063	127.00	102.00	25.40	87.00	12.18	35.79	37.59	19.05	57.15	63.50	M8
XSK 3000 xx 087 M 076	127.00	102.00	25.40	87.00	12.18	35.79	43.43	19.05	69.85	76.20	M8
XSK 3000 xx 087 M 082	127.00	102.00	25.40	87.00	12.18	35.79	46.48	19.05	76.20	82.55	M8
XSK 3000 xx 087 M 088	127.00	102.00	25.40	87.00	12.18	35.79	49.53	19.05	82.55	88.90	M8
XSK 3000 xx 087 M 095	127.00	102.00	25.40	87.00	12.18	35.79	52.57	19.05	88.90	95.25	M8
XSK 3000 xx 087 M 101	127.00	102.00	25.40	87.00	12.18	35.79	55.62	19.05	95.25	101.60	M8
XSK 3000 xx 087 M 107	127.00	102.00	25.40	87.00	12.18	35.79	58.42	19.05	101.60	107.95	M8
XSK 3000 xx 087 M 114	127.00	102.00	25.40	87.00	12.18	35.79	61.46	19.05	107.95	114.30	M8
XSK 3000 xx 087 M 120	127.00	102.00	25.40	87.00	12.18	35.79	64.51	19.05	114.30	120.65	M8

Other sizes available on request, please contact factory

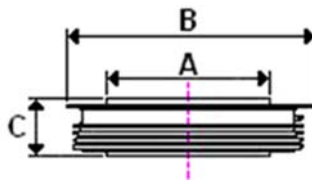
Figure B

Figure C

Notes:

1. DIMENSIONS IN INCHES [MILLIMETERS].
2. " Z " DIMENSION CAN BE CHANGED AS PER REQUIREMENT.
3. " D " DIMENSION CAN BE CHANGED AS PER REQUIREMENT.

Figure D

SA
DA

Other accessories and lead sets

Part No.	Accessory			
XSGSCX13	Press Pack Semiconductor Mounting Grease (1kg tub)			
XST1000M08P	M8 PTFE tube x 1m length insulation			
XST1000M10P	M10 PTFE tube x 1m length insulation			
XST1000M12P	M12 PTFE tube x 1m length insulation			
XST1000M16P	M16 PTFE tube x 1m length insulation			
Insulator capsules		Dimension		
		A	B	C
		mm	mm	mm
L0001YC450XXX	30mm diameter poleface Insulator Capsule	30	42	15.1
L0001QC450XXX	43mm diameter poleface Insulator Capsule	38	58.5	14.5
L0001MC450XXX	56mm diameter poleface Insulator Capsule	47	74	27.7
L0001HC450XXX	68mm diameter poleface Insulator Capsule	68	100	14.5
L0001TC450XXX	87mm diameter poleface Insulator Capsule	73.1	110.5	35
L0001FC450XXX	100mm diameter poleface Insulator Capsule	75	112	26.6



Part No.	Lead dimension and termination	Device type
XSL220C2WRT	220mm long twisted pair, Silicone sleeve cable 16/0.2, Red / White, M4 ring terminal	Thyristor
XSL300C2WRP	300mm long pair, Silicone sleeve cable 16/0.2, Red / White, M4 ring terminal	Thyristor
XSL300C2WS	300mm long gate wire, Silicone sleeve cable 16/0.2, White, M4 ring terminal	Thyristor
XSL350C2WRP	350mm long pair, Silicone sleeve cable 16/0.2, Red / White, M4 ring terminal	Thyristor
XSL400C2WRP	400mm long pair, Silicone sleeve cable 16/0.2, Red / White, M4 ring terminal	Thyristor
XSL500C2WRP	500mm long pair, Silicone sleeve cable 16/0.2, Red / White, M4 ring terminal	Thyristor
XSL600C2WRP	600mm long pair, Silicone sleeve cable 16/0.2, Red / White, M4 ring terminal	Thyristor
XSL1000C2WRP	1000mm long pair, Silicone sleeve cable 16/0.2, Red / White, M4 ring terminal	Thyristor
XSL1000C2WRT	1000mm long twisted pair, Silicone sleeve cable 16/0.2, Red / White, M4 ring terminal	Thyristor
XSL1100C2WRT	1100mm long twisted pair, Silicone sleeve cable 16/0.2, Red / White, M4 ring terminal	Thyristor



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