Rectifier Diodes - Stud Types

Product Line of
WESTCODE
An IXYS Company

Westcode's rectifier devices are designed to survive even the most arduous of applications. These highly reliable components are suitable for all rectifier applications, including traction, industrial drives and substations. Voltages to 6kV and currents to 8kA.

Type	V_{RRM}	I_{FAV} @ T_C		$I_{F(RMS)}$ @T_C	I_{FSM} 10ms $V_R \leq 60\% V_{RRM}$	V_{T0} @T_{Jmax}	r_T @T_{Jmax}	$T_{Jmax.}$	$R_{thJC-hs}$	Fig. No.	Package style Outline drawings on page 101-105
	V	A	°C	A/°C	A	V	mΩ	°C	K/W		
SW04-15PHN300	400-1500	375	100	600/72	5500	0.95	0.75	180	0.13	W23	Fig. W23 Weight 250 g
SW04-15PHR300	400-1500	375	100	600/72	5500	0.95	0.75	180	0.13		
SW04-15HHN300	400-1500	375	100	600/72	5500	0.95	0.75	180	0.13	W27	
SW04-15HHR300	400-1500	375	100	600/72	5500	0.95	0.75	180	0.13		
SW16-24PHN320	1600-2400	320	100	600/46	4000	1.00	0.835	180	0.15	W24	
SW16-24PHR320	1600-2400	320	100	600/46	4000	1.00	0.835	180	0.15		
SW16-24HHN320	1600-2400	320	100	600/46	4000	1.00	0.835	180	0.15	W26	
SW16-24HHR320	1600-2400	320	100	600/46	4000	1.00	0.835	180	0.15		
SW16-24PHN380	1600-2400	370	100	600/70	5500	0.99	0.74	180	0.13	W24	
SW16-24PHR380	1600-2400	370	100	600/70	5500	0.99	0.74	180	0.13		
SW16-24HHN380	1600-2400	370	100	600/70	5500	0.99	0.74	180	0.13	W26	
SW16-24HHR380	1600-2400	370	100	600/70	5500	0.99	0.74	180	0.13		
SW04-15PHN400	400-1500	400	120	630/97	7500	0.80	0.548	190	0.13	W23	
SW04-15PHR400	400-1500	400	120	630/97	7500	0.80	0.548	190	0.13		
SW04-15HHN400	400-1500	400	120	630/97	7500	0.80	0.548	190	0.13	W27	
SW04-15HHR400	400-1500	400	120	630/97	7500	0.80	0.548	190	0.13		
SW04-15PHN470	400-1500	350	140	550/100	9000	0.79	0.342	190	0.13	W23	
SW04-15PHR470	400-1500	350	140	550/100	9000	0.79	0.342	190	0.13		
SW04-15HHN470	400-1500	350	140	550/100	9000	0.79	0.342	190	0.13	W27	
SW04-15HHR470	400-1500	350	140	550/100	9000	0.79	0.342	190	0.13		

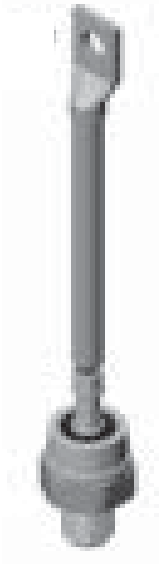


Fig. W27
Weight 250 g

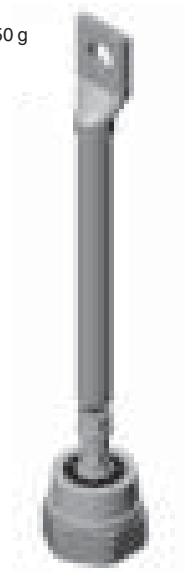


Fig. W26
Weight 250 g

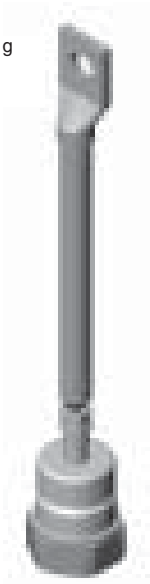
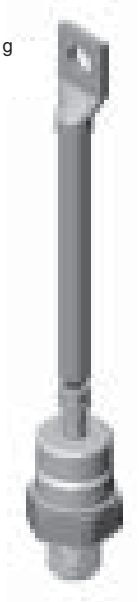


Fig. W24
Weight 250 g



Please note: Leaded types, code changes from SP/RP (PHN/R), SN/RN (HHN/R) or SR/RR (PXN/R).
Lead length 135mm (base of hexagon to centre of lug hole)

Rectifier Diodes - Capsule Types

Product Line of
WESTCODE
An IXYS Company

Type	V_{RRM} V	I_{FAV} @ T_S=55°C A	$I_{F(RMS)}$ @ T_S=25 °C A	I_{FSM} 10 ms $V_R \leq 60\% V_{RRM}$ A	V_{T0} @ $T_{J max.}$ V	r_T @ $T_{J max.}$ mΩ	$T_{J max.}$ °C	R_{thJS} K/W	Fig. No.	Package style Outline drawings on page 101-105
SW06-15CXC300	600-1500	646	1170	5500	0.95	0.75	180	0.090	W1	Fig. W1 Weight 70 g
SW16-24CXC320	1600-2400	614	1100	4000	1.00	0.83	180	0.090		
SW16-24CXC380	1600-2400	642	1160	5500	0.99	0.74	190	0.090		
SW04-15CXC400	400-1500	797	1420	7500	0.80	0.55	190	0.090		
SW04-15CXC470	400-1500	944	1694	9000	0.79	0.342	190	0.090		
SW20-32CXC445	2000-3200	1074	1985	10800	0.92	0.39	160	0.050	W2	
SW16-25CXC565	1600-2500	1263	2290	11700	0.87	0.33	175	0.050		
SW36-45HXC270	3600-4500	507	937	9000	0.97	0.88	160	0.100	W3	Fig. W2 Weight 80 g
SW50-56CXC350	5000-5600	1032	1910	7200	1.00	0.702	150	0.033	W4	
SW30-45CXC515	3000-4500	1185	2171	9200	1.00	0.575	160	0.033		
SW30-36CXC595	3000-3600	1411	2590	10600	0.90	0.388	160	0.033		
SW24-30CXC635	2400-3000	1524	2800	12700	0.87	0.323	160	0.033		
SW04-22CXC805	400-2200	1748	3160	15400	0.87	0.28	175	0.033		
SW02-12CXC935	200-1200	2058	3730	19500	0.79	0.192	175	0.033		
SW50-60CXC500	5000-6000	1294	2400	10000	1.15	0.684	150	0.022	W5	Fig. W3 Weight 141 g
SW50-60CXC620	5000-6000	1520	2830	12000	1.15	0.45	150	0.022		
SW40-50CXC680	4000-5000	1608	2930	13000	0.975	0.501	160	0.022		
SW40-50CXC815	4000-5000	1856	3400	16000	0.975	0.348	160	0.022		
SW30-40CXC820	3000-4000	2052	3755	19500	0.865	0.288	160	0.022		
SW36-45CXC920	3600-4500	2052	3750	19000	0.80	0.30	160	0.022		
SW30-40CXC930	3000-4000	2134	3900	20000	0.865	0.26	160	0.022		
SW16-25CXC950	1600-2500	2416	4430	25500	0.78	0.20	160	0.022		
SW16-25CXC11C	1600-2500	2624	4830	28000	0.78	0.16	160	0.022		
SW02-20CXC14C	200-2000	3270	5920	33000	0.73	0.116	175	0.022		
SW02-06CXC19C	200-600	4534	8190	40000	0.765	0.0524	190	0.022		
SW36-45CXC818	3600-4500	2020	3705	18000	1.00	0.32	160	0.020		
SW30-40CXC1170	3000-4000	2664	4900	26500	0.824	0.174	160	0.020		
SW28-35CXC12C	2800-3500	2958	5340	28000	0.807	0.167	175	0.020		
SW36-45CXC1100	3600-4500	2820	5265	26200	1.30	0.147	160	0.016	W6	Fig. W4 Weight 340 g
SW30-40CXC13C	3000-4000	3128	5600	30000	0.875	0.158	160	0.016		
SW16-28CXC16C	1600-2800	3697	6840	40000	0.86	0.10	160	0.016		
SW02-14CXC22C	200-1400	5439	9700	52000	0.65	0.067	190	0.016		
SW02-14CXC27C	200-1400	5696	10160	53000	0.65	0.06	190	0.016		
SW40-50CXC15C	4000-5000	3743	6870	35000	0.976	0.17	160	0.011	W7	Fig. W5 Weight 510 g
SW24-35CXC18C	2400-3500	5092	9415	58000	0.874	0.0794	160	0.011		
SW34-45CXC1870	3400-4500	4096	7460	41700	0.73	0.158	160	0.011		
SW20-30CXC20C	2000-3000	4307	7875	55000	0.80	0.133	160	0.011		
SW20-30CXC21C	2000-3000	5282	9830	60000	0.97	0.064	160	0.011		
SW12-22CXC26C	1200-2200	5838	10560	64000	0.80	0.074	175	0.011		
SW12-24CXC2850	1200-2400	6262	11327	67000	0.74	0.0647	175	0.011		
SW02-14CXC30C	200-1400	7675	13670	68000	0.65	0.05	190	0.011		
SW02-14CXC32C	200-1400	8405	15025	72000	0.67	0.038	190	0.011		

Capsule outlines available with the following compressed heights:
Outline 100A270
27.0 / 25.5 = ordering code SWxxFXCxxx, e.g. SW14FXC27C
Outline 100A293
25.6 / 26.9 = ordering code SWxxDXCxxx, e.g. SW10DXC32C

Fig. W7
Weight 1700 g

Fig. W6
Weight 1000 g

Fast Recovery Diodes - Stud Types

Product Line of
WESTCODE
An IXYS Company

Fast Recovery Diodes are an essential partner to all fast switching devices. Our soft recovery diodes are vailable with a range of reverse recovery characteristics tailored to meet the requirements of both freewheeling and snubber applications. These devices are available with blocking voltages up to 6kV 3770A. Stud types have ratings to 2.5kV and 334A.

Type	V_{RRM}	I_{FAV} @T_C=55°C	$I_{F\,max.}$ (@ T_{sink})		Typ. Reverse Recovery charge & Typ. Reverse Recovery time @ T_J Max (50% Chord)				I_{FSM} 10ms $V_R \leq 60\% V_{RRM}$	V_F at I_F @ T_{Jmax}		T_{Jmax}	R_{thJC}	
					Qra	t_{rr}	@I_{FM} &	dir/dt						
	V	A	A	°C	µC	µs	A	A/µs	A	V	A	°C	K/W	Fig.
SM20-25MCN094	1600-2500	130	170	45	240	2.60	1000	150	2240	1.72	280	125	0.3	20
SM20-25MCR094	1600-2500	130	170	45	240	2.60	1000	150	2240	1.72	280	125	0.3	
SM12-18PHN100	1200-1800	139	175	48	68	1.00	1000	100	2450	1.60	280	125	0.3	21
SM12-18PHR100	1200-1800	139	175	48	68	1.00	1000	100	2450	1.60	280	125	0.3	
SM20-25PCN134	2000-2500	268	400	35	173	2.80	1000	150	4250	1.77	470	125	0.13	22
SM20-25PCR134	2000-2500	268	400	35	173	2.80	1000	150	4250	1.77	470	125	0.13	
SM20-25PHN134	2000-2500	268	400	35	173	2.80	1000	150	4250	1.77	470	125	0.13	24
SM20-25PHR134	2000-2500	268	400	35	173	2.80	1000	150	4250	1.77	470	125	0.13	
SM20-25PCN144	2000-2500	280	400	39	255	2.80	1000	150	4500	1.71	470	125	0.13	22
SM20-25PCR144	2000-2500	280	400	39	255	2.80	1000	150	4500	1.71	470	125	0.13	
SM20-25PHN144	2000-2500	280	400	39	255	2.80	1000	150	4500	1.71	470	125	0.13	24
SM20-25PHR144	2000-2500	280	400	39	255	2.80	1000	150	4500	1.71	470	125	0.13	
SM12-14PHN170	1200-1400	336	400	57	137	1.80	1000	200	4500	1.35	470	125	0.13	23
SM12-14PHR170	1200-1400	336	400	57	137	1.80	1000	200	4500	1.35	470	125	0.13	
SM12-18PHN174	1200-1800	334	400	58	293	2.30	1000	200	4500	1.35	470	125	0.13	24
SM12-18PHR174	1200-1800	334	400	58	293	2.30	1000	200	4500	1.35	470	125	0.13	

Fig. W20
Weight 85 g

Fig. W21
Weight 85 g

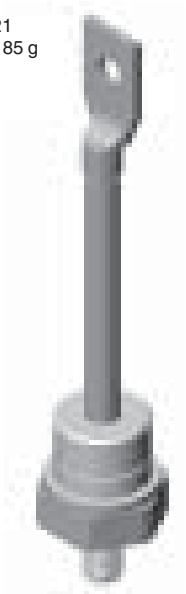


Fig. W22
Weight 250 g

Fig. W23
Weight 250 g

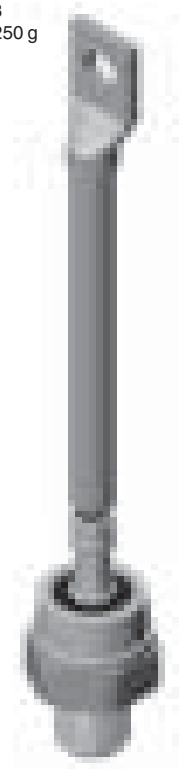
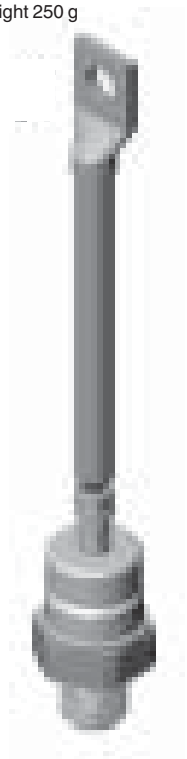


Fig. W24
Weight 250 g



Outline drawings on page 101-105

Fast Recovery Diodes - Capsule Types

Product Line of
WESTCODE
An IXYS Company

Type	V_{RRM}	I_{FAV} @T_S =55°C	$I_{F(RMS)}$ max @T_S =25°C	Typ. Reverse Recovery charge &Typ. Reverse Recovery time @ T_J Max (50% Chord)				I_{FSM} 10ms V_R ≤60%V_{RRM}	V_F at I_F @ T_{Jmax}		T_{Jmax}	R_{thJC}	Fig.
				Qra	t_{rr}	@I_{FM} &	di_r/dt						
	V	A	A	µC	µs	A	A/µs	A	V	A	°C	K/W	
SM12-18CXC100	1200-1800	358	673	68	1.0	1000	100	2450	1.97	635	125	0.090	W1
SM16-25CXC134	1600-2500	347	690	173	2.80	1000	150	4250	1.97	635	125	0.090	
SM16-28CXC144	1600-2800	367	742	255	2.80	550	150	4500	1.86	635	125	0.090	
SM08-14CXC170	800-1400	437	880	56	2.30	550	40	4500	1.46	635	125	0.090	
SM12-20CXC174	1200-2000	433	870	120	2.80	550	40	4500	1.47	635	125	0.090	
SM12-20CXC176*	1200-2000	451	870	120	2.80	550	40	4500	1.47	635	125	0.085	W2
SM04-16CXC190	400-1600	759	1540	41	1.50	550	40	9500	1.70	1500	125	0.050	
SM30-45HXC084	3000-4500	225	415	266	2.50	1000	150	2000	4.54	635	150	0.100	W3
SM30-35HXC103	3000-3500	310	580	188	2.30	1000	100	4590	2.80	635	150	0.100	
SM35-45HXC164	3500-4500	371	678	480	2.60	1000	150	4900	2.10	635	150	0.100	
SM25-30HXC166	2500-3000	240	450	75	1.5	1000	100	3100	4.12	635	150	0.100	
SM14-16CXC220	1200-1600	859	1745	105	2.30	800	50	10000	1.55	1200	125	0.044	W4
SM14-21CXC224	1400-2100	872	1760	225	1.70	800	50	10000	1.50	1200	125	0.044	
SM56-60CXC274	5600-6000	710	1400	1000	3.30	1000	200	8400	2.500	1200	125	0.033	
SM10-12CXC314	1000-1200	1080	2175	120	1.60	1000	200	13500	1.510	1200	125	0.033	
SM40-45CXC344	4000-4500	588	1108	200	3.50	1000	60	3955	4.80	1400	150	0.033	
SM40-45CXC364	4000-4500	659	1315	263	3.00	1000	50	7620	3.000	1400	125	0.033	
SM40-45CXC374	4000-4500	736	1465	953	3.80	1000	200	9000	2.56	1400	125	0.033	
SM26-36CXC474	2600-3600	863	1730	548	2.80	1000	200	10000	2.10	1400	125	0.033	
SM20-25CXC524	2000-2500	1058	2127	338	2.00	1000	200	11700	1.90	1400	125	0.033	
SM12-20CXC724	1200-2000	1023	2062	248	1.90	1000	200	14000	1.72	1450	125	0.033	
SM20-25CXC804	2000-2500	760	1540	140	2.4	800	50	9000	2.54	1450	125	0.033	
SM20-25CXC334	2000-2500	1502	2807	420	2.30	1000	200	17000	2.21	2200	150	0.022	W5
SM02-06CXC504	200-600	1825	3640	225	1.50	1000	200	26000	1.47	3000	125	0.022	
SM50-60CXC574	5000-6000	1102	2185	1500	4.50	1000	200	13000	2.20	1500	125	0.022	
SM40-45CXC604	4000-4500	1010	1880	724	3.00	1000	200	9600	3.25	1500	150	0.022	
SM40-45CXC614	4000-4500	1163	2165	600	5.30	1000	60	10800	2.65	1500	150	0.022	
SM40-45CXC624	4000-4500	1104	2185	800	5.00	1000	200	13000	2.20	1500	125	0.022	
SM26-36CXC824	2600-3600	1242	2465	698	2.90	1000	200	16400	2.20	2200	125	0.022	
SM20-26CXC915	2000-2600	1609	3026	551	3.00	1000	200	17500	2.07	2200	150	0.022	
SM16-25CXC924	1600-2500	1494	2984	280	3.70	1000	60	19600	2.34	4500	125	0.022	
SM40-45CXC394	4000-4500	1565	3080	1550	4.5	1000	200	19700	1.80	2000	125	0.018	W6
SM40-45CXC864	4000-4500	1583	2963	1125	5.00	1000	200	24800	2.80	2000	150	0.016	
SM18-25CXC968	1800-2500	2837	5300	1650	4.40	1000	200	31800	1.41	3000	150	0.016	
SM30-40CXC384	3000-4000	2322	4695	1500	5.5	1000	150	23000	2.04	2000	125	0.011	W7
SM36-42CXC954	3600-4200	2640	4925	1500	5.5	1000	200	27520	2.25	3000	150	0.011	
SM25-35CXC964	2500-3500	2698	4980	1500	12.0	1000	150	27800	3.00	6000	150	0.011	
SM20-30CXC974	2000-3000	3770	7114	1125	4.10	1000	60	44000	1.740	4700	150	0.011	

Capsule outlines available with the following compressed heights:
Outline W5 27.0 / 25.5 = ordering code SMxxFXCxxx, e.g. SM30FXC864
Outline W6 25.6 / 26.9 = ordering code SMxxDXCxxx, e.g. SM30DXC964
*Device type SM12-20CXC176 is available with compressed heights of 13.7 or 14.7

Fig. W1
Weight 70 g

Fig. W2
Weight 80 g

Fig. W3
Weight 141 g

Fig. W4
Weight 340 g

Fig. W5
Weight 510 g

Fig. W7
Weight 1700 g

Fig. W6
Weight 1000 g

Outline drawings on page 101-105

Phase Control Thyristors

Product Line of
WESTCODE
An IXYS Company

We provide one of the most comprehensive ranges of standard Phase Control Thyristors in the industry. Westcode are a leading supplier into such key markets as; fully controlled rectifiers, DC drives, induction melting power supplies, electrochemical power supplies, marine drives and cycloconverters. Voltage ratings to 5.2kV and current ratings to 6kA.

Stud Types

Type	V_{DRM} V_{RRM}	I_{TAV} @ T_c= 55°C	$I_{T(RMS)}$ @ T_c=25°C	I_{TSM} 10ms $V_R \leq 60\% V_{RRM}$	di/dt Non-Rep/Rep	R_{thJC}	V_{T0} r_T @ T_J= 125°C		Fig.	Package style Outline drawings see page 101-105
	V	A	A	A	A/µs	K/W	V	mΩ		
N086PH12-16	1200-1600	131	175	1700	1000/500	0.23	1.57	2.29	W17	Fig. W18 Weight 250 g
N105PH12-16	1200-1600	180	175	2450	1000/500	0.23	0.90	1.79		
N170PH12-16	1200-1600	290	355	4200	1000/500	0.12	1.08	1.30	W18	
N195PH12-16	1200-1600	335	355	4650	1000/500	0.12	0.92	0.99		
N275PH02-08	200-800	416	355	6000	1000/500	0.12	0.85	0.535		

Capsule Types - 19mm-100 mm diameter silicon slices.

Type	V_{DRM} V_{RRM}	I_{TAV} @T_s= 55°C	$I_{T(RMS)}$ @T_s=25°C	I_{TSM} 10ms $V_R \leq 60\% V_{RRM}$	di/dt Non-Rep/Rep	R_{thJS}	V_{T0} r_T @ T_J=125°C		Fig.
	V	A	A	A	A/µs	K/W	V	mΩ	
N086CH12-16	1200-1600	194	391	1700	1000/500	0.135	1.570	2.290	W8
N105CH12-16	1200-1600	255	502	2450	1000/500	0.135	1.570	2.290	
N170CH12-16	1200-1600	339	673	4200	1000/500	0.095	1.080	1.300	
N195CH12-16	1200-1600	392	776	4650	1000/500	0.095	0.920	0.990	
N275CH02-08	200-800	491	984	6000	1000/500	0.095	0.850	0.535	
N282CH20-24	2000-2400	606	1201	7100	600/300	0.050	1.140	0.781	W9
N281CH12-18	1200-1800	676	1346	7500	1000/500	0.050	1.090	0.587	or
N280CH12-16	1200-1600	734	1465	8400	1000/500	0.050	1.030	0.483	W9a
N283CH12-14	1200-1400	782	1554	9280	1000/500	0.050	0.920	0.450	
N310CH02-06	200-600	993	1995	11000	1000/500	0.050	0.820	0.240	
N255CH40-45	4000-4500	616	1197	5250	300/150	0.032	1.220	1.530	W10
N257CH38-42	3800-4200	634	1228	7000	300 /150	0.032	1.100	1.500	
N260CH30-36	3000-3600	646	1238	5700	400/200	0.032	1.210	1.360	
N330CH20-26	2000-2600	910	1788	9200	600/300	0.032	1.040	0.606	W10
N350CH12-18	1200-1800	1042	2072	11500	1000/500	0.032	1.080	0.395	or
N370CH12-18	1200-1800	1114	2214	12700	1000/500	0.032	1.000	0.349	W10a
N520CH12-15	1200-1500	1265	2517	15000	1000/500	0.032	0.900	0.265	

Fig. W17
Weight 130 g

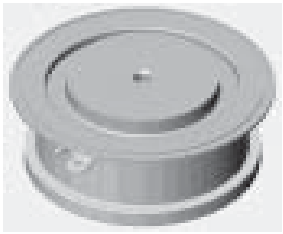
Fig. W8
Weight 70 g

Fig. W9
Weight 70 g

Fig. W10
Weight 340 g

Fig. W9a
Weight 90 g

Fig. W10a
Weight 340 g



Note: When selecting capsule outlines Fig. 9a -101A335 or Fig .10a101A336, replace the CH in the relevant type number with SH to denote alternative housing.

Phase Control Thyristors

Product Line of
WESTCODE
An IXYS Company

Capsule Types - 19mm-100 mm diameter silicon slices.

Type	V_{DRM} V_{RRM} V	I_{TAV} @T_S= 55°C A	$I_{T(RMS)}$ @T_S=25°C A	I_{TSM} 10ms $V_R \leq 60\% V_{RRM}$ A	di/dt Non-Rep/Rep A/µs	R_{thJS} K/W	V_{T0} @ T_J=125°C V	r_T @ T_J=125°C mΩ	Fig.	Package Outline drawings see page 101-105
N320CH40-45	4000-4500	882	1724	7700	300/150	0.024	1.300	0.920	W11	
N500CH38-42	3800-4200	1159	2268	14500	300/150	0.022	1.100	0.574		
N570CH30-36	3000-3600	1314	2576	16600	300/150	0.022	1.000	0.437		
N360CH30-38	3000-3800	1010	1978	12100	400/200	0.024	1.170	0.687		
N390CH30-32	3000-3200	1132	2228	14300	400/200	0.024	1.150	0.510		
N620CH24-30	2400-3000	1436	2830	21000	400/200	0.022	1.000	0.342		
N680CH20-26	2000-2600	1588	3138	22500	300/150	0.022	0.951	0.268		
N450CH20-26	2000-2600	1297	2557	17600	600/300	0.024	1.030	0.380	W11	
N490CH20-26	2000-2600	1467	2912	21500	1000/500	0.024	1.000	0.272	or	
N510CH16-20	1600-2000	1547	3064	23280	1000/500	0.024	0.920	0.252	W11a	
N540CH12-18	1200-1800	1718	3450	27200	1000/500	0.024	0.979	0.169		
N600CH12-16	1200-1600	1802	3592	29600	1000/500	0.024	0.855	0.171		
N740CH12-16	1200-1600	2046	4141	29200	300/150	0.022	0.980	0.114		
N610CH06-10	600-1000	2086	4207	35000	1000/500	0.024	0.840	0.108		
N560CH40-45	4000-4500	1351	2641	17500	300/150	0.017	1.200	0.553	W12	
N630CH30-36	3000-3600	1661	3259	23000	300/150	0.017	1.040	0.350		
N640CH24-30	2400-300	1712	3366	24500	300/150	0.017	1.050	0.320		
N760CH18-22	1800-2200	2293	4571	33800	300/150	0.017	0.956	0.148		
N990CH12-16	1200-1600	2500	4985	37000	300/150	0.017	0.880	0.124		
N850CH30-36	3000-3600	2418	4757	30000	300/150	0.011	1.160	0.246	W13	
N880CH24-30	2400-3000	2543	4922	32000	300/150	0.011	0.780	0.274		
N900CH20-26	2000-2600	3012	5922	45100	300/150	0.011	0.920	0.160		
N980CH16-22	1600-2200	3022	5926	45600	300/150	0.011	0.880	0.164		
N1400CH14-20	1400-2000	3533	7052	50000	300/150	0.011	0.970	0.095		
N1600CH08-12	800-1200	4085	8161	64000	300/150	0.011	0.850	0.070		
N1263CH45-52	4500-5200	3039	5908	37800	300/150	0.008	1.00	0.250	W14	
N1463CH36-42	3000-4200	3476	6788	46800	300/150	0.008	0.180	0.970		
N1863CH12-28	1200-2800	4400	8670	54000	300/150	0.008	0.9	0.1		
N1263DH45-52	4500-5200	3039	5908	37800	300/150	0.008	1.00	0.250	W19	
N1463DH36-42	3000-4200	3476	6788	46800	300/150	0.008	0.180	0.970		
N1283CH45-52	4500-5200	3764	7317	49500	300/150	0.0065	1.0	0.2	W15	
N1483CH30-42	3000-4200	4151	8048	54000	300/150	0.0065	0.85	0.17		
N1883CH20-28	2000-2800	5176	10109	67500	300/150	0.0065	0.8	0.1		
N1983CH18-22	1200-2200	5946	11748	72000	300/150	0.0065	0.855	0.065		

Fig. W11
Weight 510 g

Fig. W11a
Weight 510 g

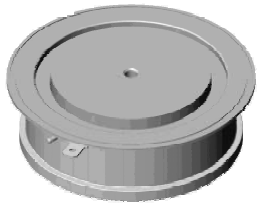


Fig. W12
Weight 1000 g

Fig. W13
Weight 1700 g

Fig. W14
Weight 1300 g

Fig. W15
Weight 2800 g

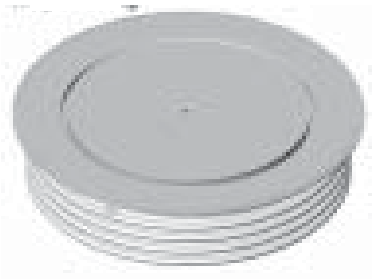
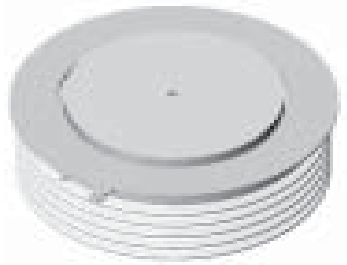


Fig. W19
Weight 1700 g



Note:
When selecting capsule outlines Fig. 9a -101A335, Fig .10a - 101A336 or Fig. 11a - 101A337, replace the CH in the relevant type number with SH to denote alternative housing.

Fast turn Off Thyristors

Product Line of
WESTCODE
An IXYS Company

Westcode "P" series of fast switching thyristors have regenerative gate structure to ensure low switching losses and high di/dt performance. "P" Series devices are particularly attractive to; Inverter, DC chopper drives, UPS and Pulse Power applications. In addition to pressure contact technology these devices offer lower reverse recovery charge values, low forward switching

Stud Types

Type	V_{DRM} V_{RRM} Range	Turn-off Time t_q @ 200V/µs	Typ. Qra 50% Chord, 125°C , Typ @ I_{TM} & di/dt			I_{TAV} T_C=85 °C	$I_{T(RMS)}$ @T_C=25 °C	I_{TMS} 10ms V_R ≤60% V_{RR}	V_{TO} at T_J =125°C	r_T	Rth_{JC}	Fig.
	V	µs	µC	A	A/µs	A	A	A	V	mΩ	K/W	
P200PH10-12	1000-1200	20-30	25	300	20	248	355	2700	1.60	1.23	0.12	W18
P202PH10-12	1000-1200	20-30	30	300	20	273	355	3250	1.55	0.87	0.12	
P205PH10-12	1000-1200	25-35	45	300	20	311	355	3600	1.17	0.92	0.12	
P214PH06	400-800	15-20	20	300	20	306	355	4700	1.40	0.67	0.12	
P215PH06	400-800	15-20	30	300	20	330	355	5000	1.05	0.88	0.12	
P270PH04	400-600	12-15	70	300	20	431	355	6500	0.95	0.38	0.12	

Capsule Types - 19mm-100 mm diameter silicon slices.

Type	V_{DRM} V_{RRM}	Turn-off Time t_q at 200V/µs	Typ. Qra 50 % Chord, 120°C, Typ @ I_{TM} & di/dt			I_{TAV} @T_S=55 °C	$I_{T(RMS)}$ @T_S=25 °C	I_{TMS} 10ms V_R ≤60% V_{RR}	V_{TO} @ T_J =125°C	r_T	Rth_{JS}	Fig.
	V	µs	µC	A	A/µs	A	A	A	V	mΩ	K/W	
P200CH12	1200	20-30	25	300	20	295	600	2700	1.60	1.23	0.095	W8
P202CH12	1200	20-30	30	300	20	327	670	3250	1.55	0.87	0.095	
P205CH12	1200	25-35	45	300	20	367	740	3600	1.17	0.92	0.095	
P214CH04-08	400-800	10-15	20	300	20	366	755	4700	1.40	0.67	0.095	
P215CH04-08	400-800	15-20	30	300	20	389	780	5000	1.05	0.88	0.095	
P270CH04-06	400-600	12-20	70	300	20	515	1050	6500	0.95	0.377	0.095	
P280CH04-06†	400-600	12-20	80	550	40	848	1713	8750	1.04	0.29	0.05	W9
P300CH12†	1200	20-30	120	800	60	1007	2069	9500	1.509	0.27	0.032	W10

† Product is available in alternative housings - refer to Factory

Fig. W18
Weight 280 g

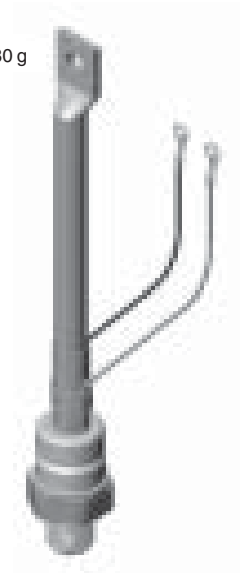


Fig. W8
Weight 70 g

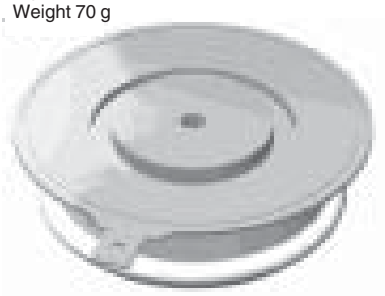


Fig. W9
Weight 90 g

Fig. W10
Weight 340 g

Outline drawings on page 101-105

Distributed Gate Thyristors

Product Line of

WESTCODE
An IXYS Company

Recognised as the worldwide leader in distributed gate thyristor technology. Devices with blocking voltages to 4.5kV and currents to 3.7kA, with tq from 10 to 300µs. The unique 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 forward voltage drop. Suited to applications including; induction heating, power supplies, high frequency inverters/converters, UPS and pulse power.

Type	V_{DRM} V_{RRM}	t_q 200V/µs	I_{TAV} T_s=55 °C	I_{TRMS} 25 °C	I_{TSM} V_R<60% V_{RRM} T_j =125°C 10 ms	Typ. Recovered Charge @ 125°C, 50% Chord Q_{ra} @ I_{TM} & di_r/dt			V_T at I_T @125 °C		R_{thJS}	Fig.
	V	µs	A	A	A	µC	A	A/µs	V	A	K/W	
R210CH10-14	1000-1400	20-30	487	982	4300	40	550	40	2.7	1000	0.05	W9
R185CH08-12	800-1200	15-25	577	1169	6000	85	550	40	2.15	1000	0.05	or
R216CH08-12	800-1200	20-30	633	1269	6300	85	550	40	1.85	1000	0.05	W9a
R180CH06-10	600-1000	10-15	809	1713	8000	45	1000	60	2.52	1400	0.032	W10
R190CH10-14	1000-1400	20-35	830	1715	8500	110	1000	60	2.4	1400	0.032	or
R200CH16-21	1600-2100†	60-70	878	1765	7500	350	1000	60	2.12	1400	0.032	W10a
R219CH08-12	800-1200	15-25	929	1893	9000	85	1000	60	2.04	1400	0.032	
R220CH08-12	800-1200	20-30	964	1971	9400	75	1000	60	1.96	1400	0.032	
R270CH04-08	400-800	10-15	990	2001	11000	40	1000	60	1.84	1400	0.032	
D315CH32-36	3200-3600	140-200	1127	2110	12800	1350	1000	60	2.42	2000	0.022	W11
D350CH24-26	2400-2600	100-120	1157	2177	14500	700	1000	60	2.4	2000	0.022	
D390CH18-25	1800-2500‡	50-70	1280	2426	14800	540	1000	60	2.1	2000	0.022	
D391CH22-25	2200-2500	50-70	1280	2426	14800	920	1000	60	2.1	2000	0.022	
D405CH14-18	1400-1800	40-65	1448	2749	15500	500	1000	60	1.8	2000	0.022	
D450CH10-12	1000-1200	12-20	1331	2690	18200	75	1000	60	2.02	2000	0.022	
R305CH14-21	1400-2100†	60-70	1124	2263	13500	400	1000	60	2.3	2000	0.024	W11
R325CH10-14	1000-1400	25-35	1178	2395	17000	170	1000	60	2.2	2000	0.024	or
R350CH08-12	800-1200	20-25	1211	2497	17600	100	1000	60	2.18	2000	0.024	W11a
R355CH08-12	800-1200	20-35	1271	2599	18000	120	1000	60	2.02	2000	0.024	
R395CH14-21	1400-2100†	65-70	1275	2541	15500	420	1000	60	1.9	2000	0.024	
R400CH08-12	800-1200	25-35	1446	2940	19500	120	1000	60	1.7	2000	0.024	
R500CH20-28	2000-2800	80-100	2475	4980	31000	1450	4000	60	2.55	5700	0.011	W13
R600CH18-25	1800-2500‡*	50-65	2619	5227	33800	1100	4000	60	2.0	4000	0.011	
R610CH22-25	2200-2500	50-65	2615	5210	33800	1460	4000	60	2.0	4000	0.011	
R800CH16-18	1600-1800	40-60	2700	5260	35600	700	4000	60	1.9	4000	0.011	
R1200CH10-12	1000-1200	15-25	3375	6860	43900	225	4000	60	1.54	4000	0.011	
R1863CH24-28	2400-2800	80-200	3047	6094	50000	950	4000	60	2.45	5000	0.008	W14
R1966CH16-20	1600-2000	60-200	3559	7060	38900	1200	4000	60	1.95	5000	0.008	
R1386CH40-45	4000-4500 #	250-300	3708	7364	50000	4000	4000	60	2.1	4000	0.0065	W15

†V_{RRM} 1800V Max ‡V_{RRM} 2100V Max #V_{RRM} 3000V Max
*Product available in alternative housings - refer to Factory
Note: When selecting capsule outlines Fig. 9a -101A335, Fig .10a101A336 and Fig. 11a 101A337, replace the CH in the relevant type number with SH to denote alternative housing.

Fig. W13
Weight 1700 g

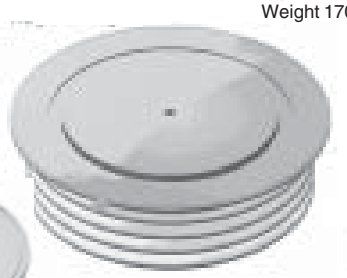


Fig. W9
Weight 90 g

Fig. W10
Weight 340 g

Fig. W11
Weight 510 g

Fig. W14
Weight 1300 g

Fig. W9a
Weight 90 g

Fig. W10a
Weight 340 g

Fig. W11
Weight 510 g

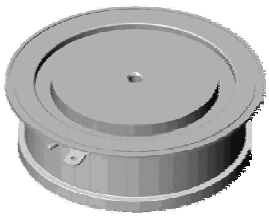


Fig. W15
Weight 2800 g

Outline drawings on page 101-105

Medium Voltage Thyristors

Product Line of
WESTCODE
An IXYS Company

Medium voltage demands are met by our comprehensive range of thyristors. Westcode's patented distributed gate structure ensures high di/dt capability meeting the needs of medium voltage and power conditioning applications. The high current and voltage rating of these devices, in combination with the improved switching performance with lower tq, make them ideal for lower frequency switching applications such as high power DC drives and induction heating melt furnaces. Blocking voltages up to 6.5kV and current ratings to >2kA, and tq from 200µs. 38-100mm diameter silicon slices.

Type	V_{DRM} V_{RRM}	Turn-off Time t_q @ 200/Vµs	Typ. Qra 50% Chord, 125°C, Typ @ I_{TM} & di/dt			I_{TAV} T_s=55 °C	$I_{T(RMS)}$ @T_s=25 °C	I_{TSM} 10ms V_R ≤60% V_{RRM}	V_{T0} r_T T_J =125 °C		R_{thJS}	Fig.
	V	µs	µs	A	A/µs	A	A	A	V	mΩ	K/W	
P0349LC60-65	6000-6500	900-1200	900	1000	10	349	705	4800	1.57	2.43	0.047	W10
P0769NC60-65	6000-6500	900-1200	2050	1000	10	769	15.6	8600	1.57	1.17	0.024	W11
R295CH36-40	3600-4000	350-550	1750	1000	60	890	1755	10900	1.516	0.8	0.024	
P440CH32-36	3200-3600	400-500	1800	1000	10	1151	2310	15000	1.45	0.38	0.024	
P480CH30-32	3000-3200	200-300	1400	1000	10	1117	2198	10650	1.14	0.53	0.024	
P880CH36-42	3600-4200	400-500	3500	1000	60	1995	3885	18200	1.18	0.408	0.011	W13
P855CH40-45	4000-4500	400-500	4000	1000	10	1935	3770	25000	1.2	0.437	0.011	
R1263CH36-52	3600-5200	500 typ.	3800	2000	60	2623	5150	27000	1.421	0.295	0.008	W14
P1063DH60-65	6000-6500	1100-1500	6800	2000	10	2359	4614	27000	1.39	0.36	0.0085	W19

Gate Turn Off Thyristors

We offer a broad range of high specification devices from 2.5kV to 6kV and turn-off currents up to 4000A are available for use in traction drives and auxiliaries, AC industrial drives, pulse power and utilities applications.

Type	V_{DRM} V_{GK} = -2V	V_{RRM}	I_{TGQM} @ C_s		I_{TAV} T_s =55°C	$I_{T(RMS)}$ T_c =25°C	$I_{TSM(1)}$ 10ms	V_T I_T =I_{TGQM}	t_{gt} @ I_{GM} I_T = I_{TGQM}		t_{gq} @ di_{GQ}/dt I_T = I_{TGQM}		R_{thJS}	Fig.
	V	V	A	µF	A	A	kA	V	µs	A	µs	A/µs	K/W	
WG5025Rx	1200-2500	100-2000	500	1	330	640	4	2.5	0.4	10	10	20	0.065	W28
WG6018Rx	600-1800	100-1400	600	1.5	430	870	5	2.1	0.4	12	10	20	0.063	
WG9014Rx	600-1400	100-1100	900	3	445	890	5.5	2.3	0.4	15	12	20	0.063	
WG5025FRx	1200-2500	100-2000	500	1	280	540	3	3.2	0.8	30	5	40	0.065	
WG6018FRx	600-1800	100-1400	600	1.5	360	700	4	2.6	0.8	30	5	40	0.063	
WG9014FRx	600-1400	100-1100	900	3	370	730	4.5	3.0	0.8	40	6	40	0.063	
WG10025SN	2500	18	1000	2	500	970	5	2.5	2.0	20	16	25	0.080	W29
WG10045SN	4500	18	1000	2	380	750	8	4.0	2.0	20	16	25	0.080	W30*
WG20025SN	2500	18	2000	4	1020	2040	16	2.8	5.0	30	24	30	0.027	W31*
WG20045SN	4500	18	2000	4	870	1730	13	3.5	8.0	30	25	30	0.027	
WG30025SN	2500	18	3000	5	1640	3270	30	2.5	7.5	30	28	40	0.015	W32*
WG30045SN	4500	18	3000	6	1180	2360	24	4.0	9.0	30	28	40	0.015	
WG30060SN	6000	18	3000	3	1100	2300	24	3.5	7.5	25	28	70	0.015	W33*
WG40045SN	4500	18	4000	6	1270	2540	25	4.4	7.5	50	28	40	0.015	

* Images currently not available for Figures W30 - W31. Please contact Chippenham Factory for details.

Fig. W10
Weight 340 g

Fig. W11
Weight 510 g

Fig. W13
Weight 1700 g

Fig. W14
Weight 1300 g

Fig. W19
Weight 1700 g

Fig. W29
Weight 170 g

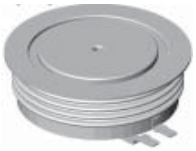
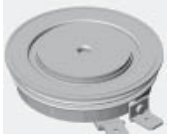


Fig. W28
Weight 120 g

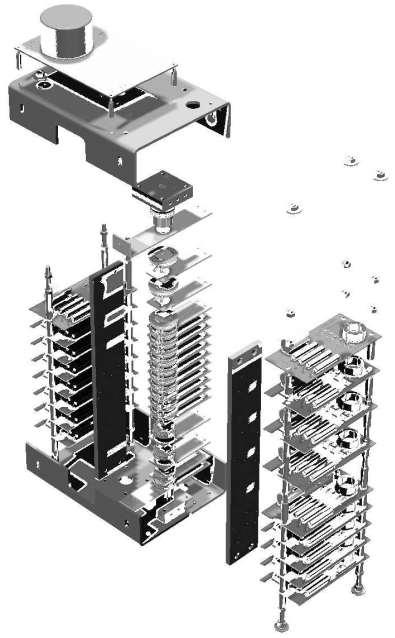


Outline drawings on page 101-105

Power Semiconductor Assemblies

✓ Comprehensive product portfolio

✓ Extensive range of standard solutions



✓ Complex power solutions

✓ Custom designed and built assemblies

✓ Optimised performance

✓ Customer cost efficient

✓ System integration

How can we solve your problems ……

Comprehensive Product Portfolio

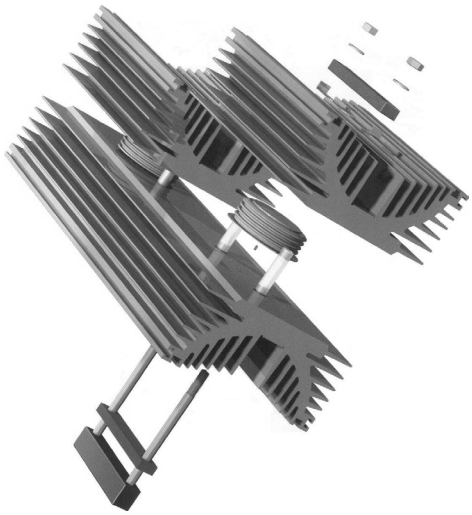
Our pedigree in the power electronics industry is unquestioned. With a dedicated assembly design and manufacturing team, we deliver excellent design experience. Utilising the latest in 3D modelling techniques, we can reduce concept to production time and ensure successful integration of power semiconductors into your specific applications:

- ✓ Rectifiers
- ✓ Inverters
- ✓ AC Motor Drives
- ✓ DC & MV Motor Drives
- ✓ Soft Starts
- ✓ Traction
- ✓ Pulse Power
- ✓ Electric Vehicles
- ✓ HVDC

Integrated solutions for everything from straight forward devices and applications through to extremely complex, custom designed assemblies, utilising a very wide range of products.

Extensive range of standard solutions

Our extensive choice of standard, off-the-shelf solutions such as; AC switches and regulators, single or multi-phase bridges, to IGBT Capsule „H“ bridge solutions.



✓ *AC Switches and AC Regulators*

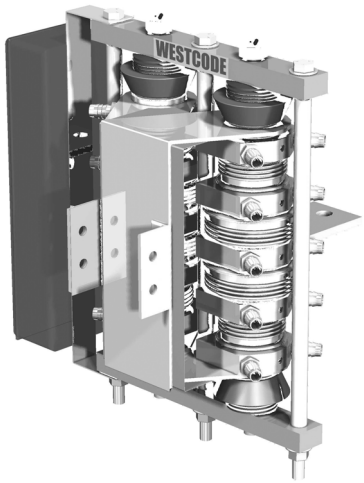
✓ *Single or Multi-Ø Bridges*

✓ *Pulse Power Designs*

✓ *IGBT Solutions*

✓ *Gate Controlled Devices*

Westcode and IXYS offer you a range of conventional and specialist extruded heat sinks, built to meet the demands of today’s semiconductor components; while aiming for optimum performance and maximum efficiency for air natural, air forced, water and oil cooled designs.



Customer benefits and advantages

✓ Improved Customer efficiency; saving you time, R&D resource and development costs

✓ Custom specific designs to meet your requirements

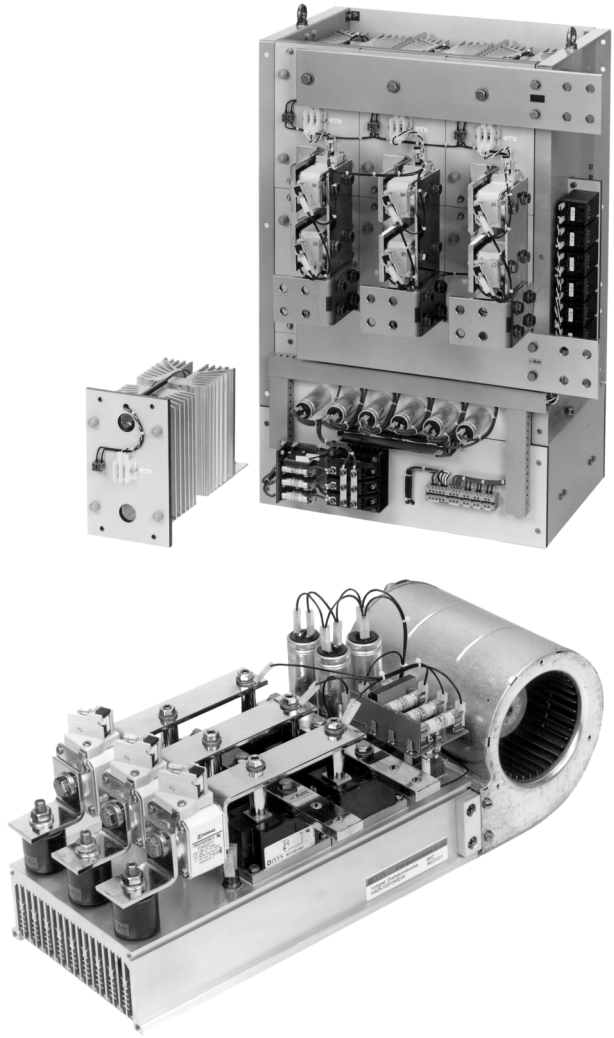
✓ Ready for installation, easy access to all our expertise

Custom designed and built assemblies

With a complete product portfolio of power semiconductor devices, modules, capsules, fuses, capacitors and gate drive units, a custom built assembly from Westcode is a cost effective, rapid solution to meeting the most demanding needs.

We can modify standard configurations, or custom design complex power solution and fully integrate them into your systems or application.

Complex power solutions, like this 34kV pulse power switch which demonstrates our „modular by design“ approach and capability, delivering cost efficient assembly and full system testing and integration.



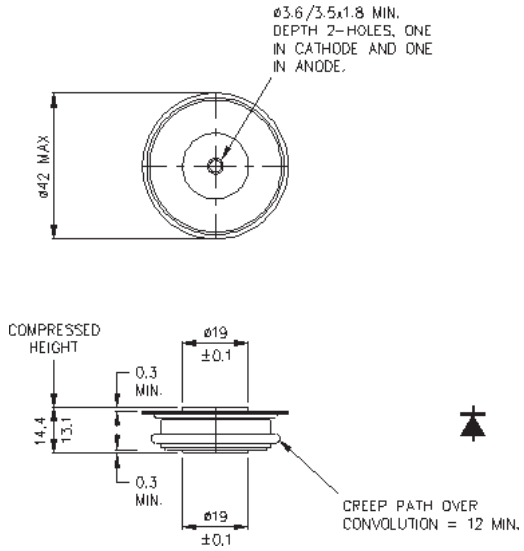
For more information contact:

- ✓ Westcode Semiconductors Ltd, Chippenham
- ✓ IXYS Semiconductors GmbH, Lampertheim
- ✓ Westcode Semiconductors Inc, Long Beach, CA

Outline drawings

Dimensions in mm and inches (1 mm = 0.0394")

W1



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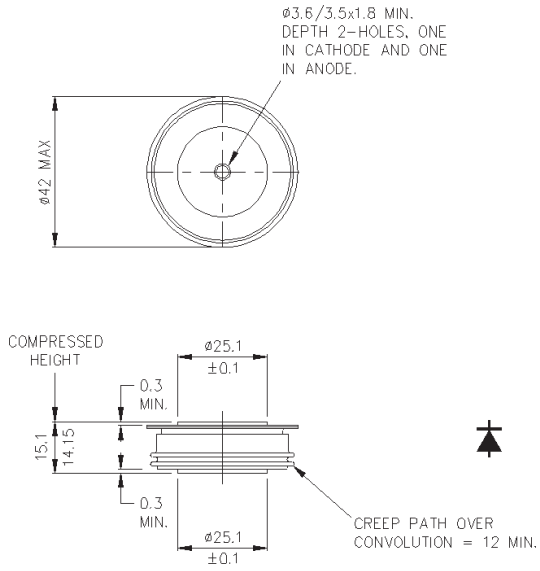

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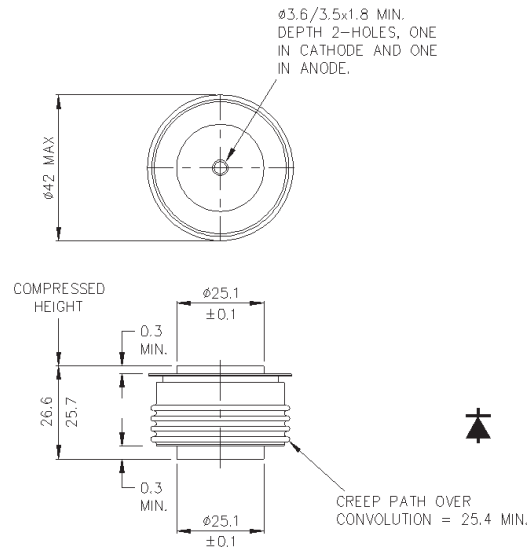

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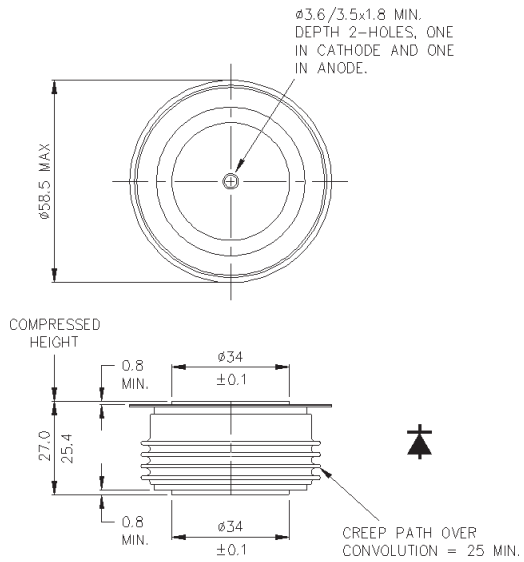

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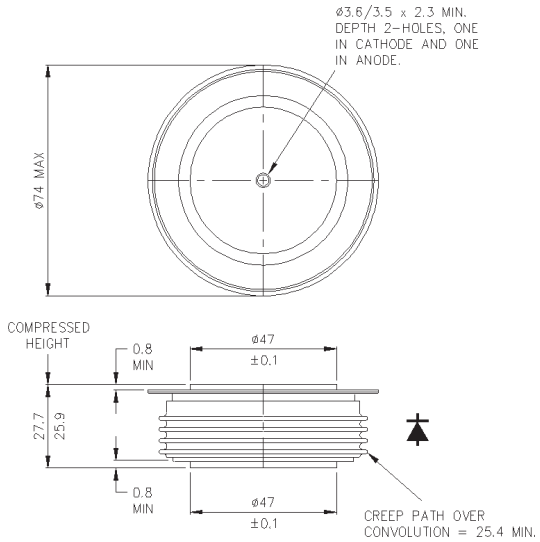

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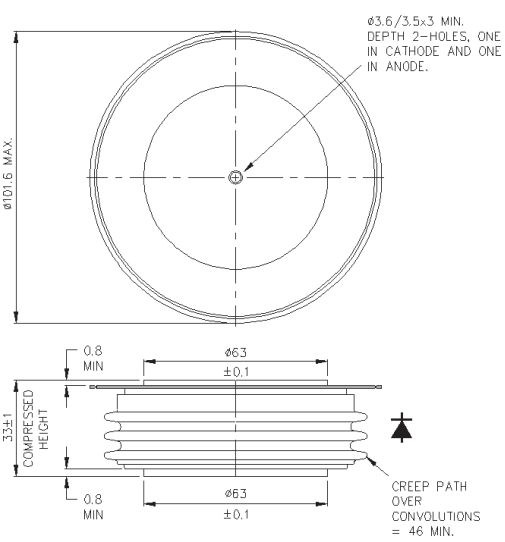

Outline drawings

Product Line of
WESTCODE
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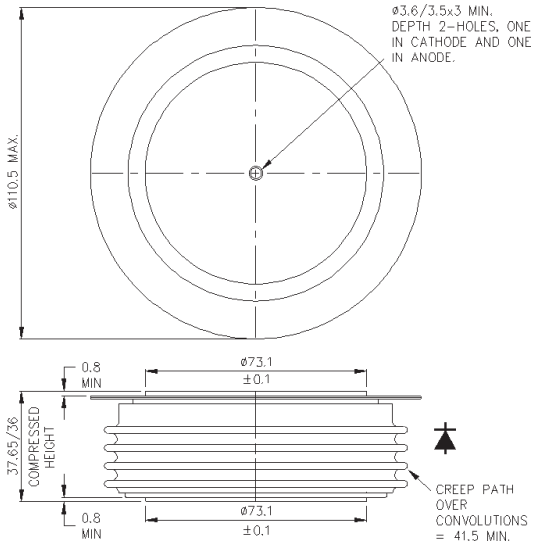
Dimensions in mm and inches (1 mm = 0.0394")

W7



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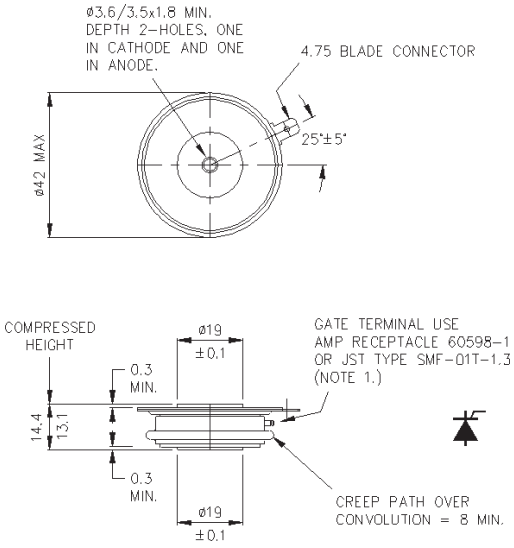

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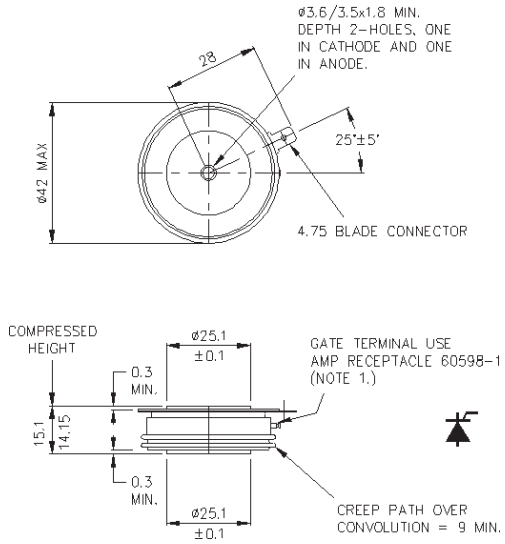

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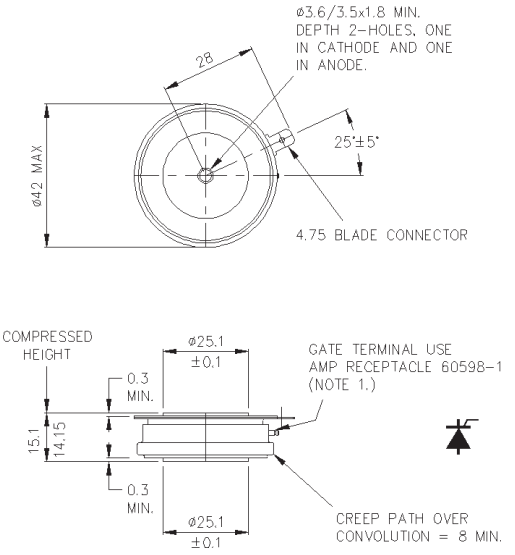

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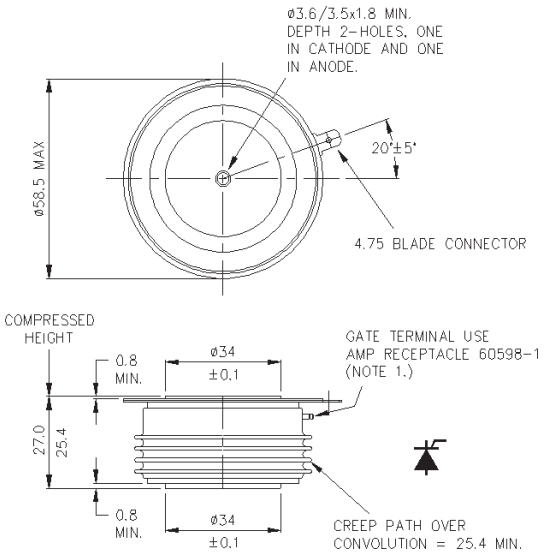

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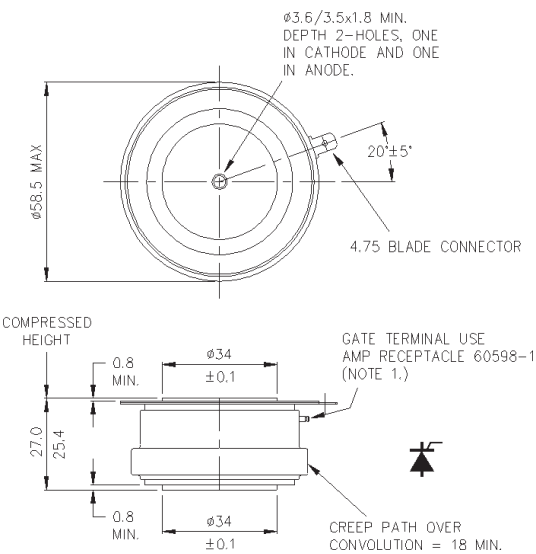
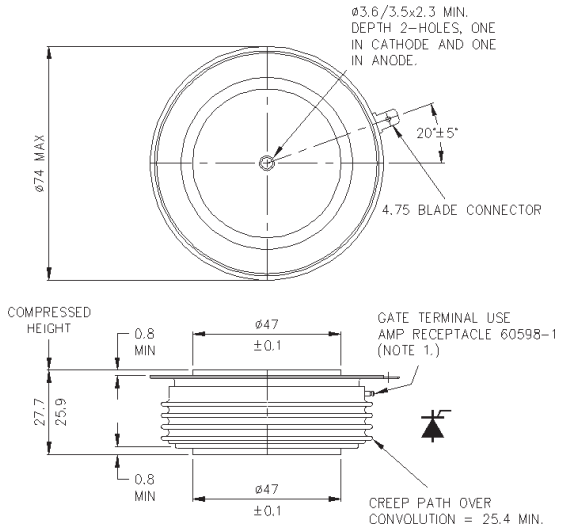


Dimensions in mm and inches (1 mm = 0.0394")

W11



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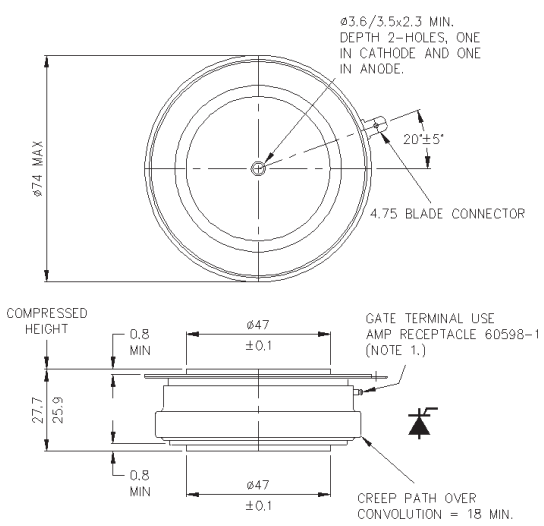

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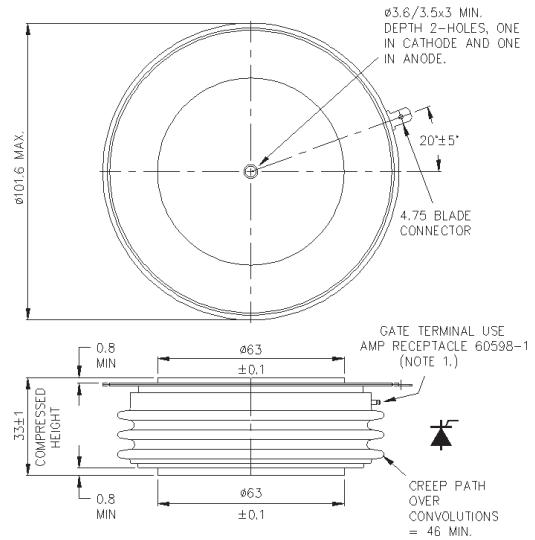

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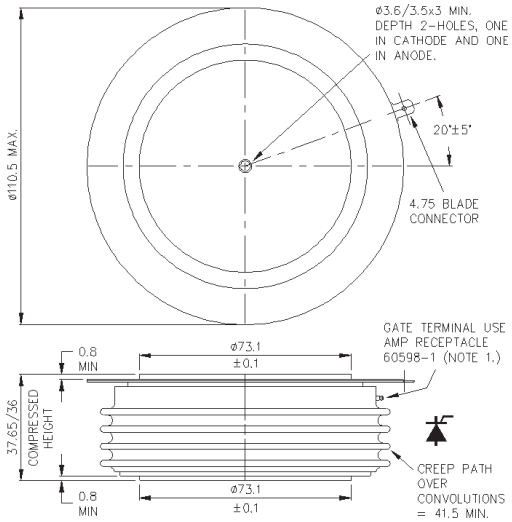

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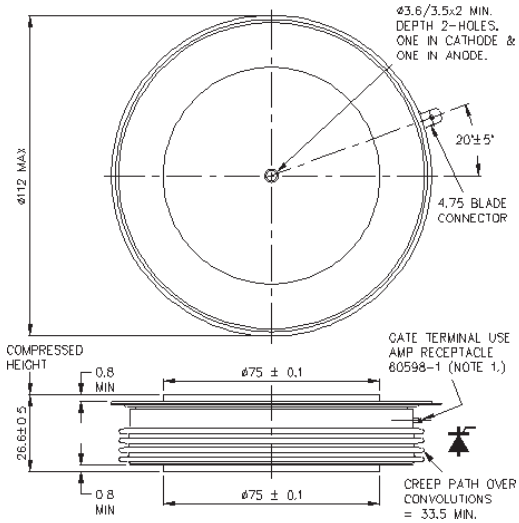

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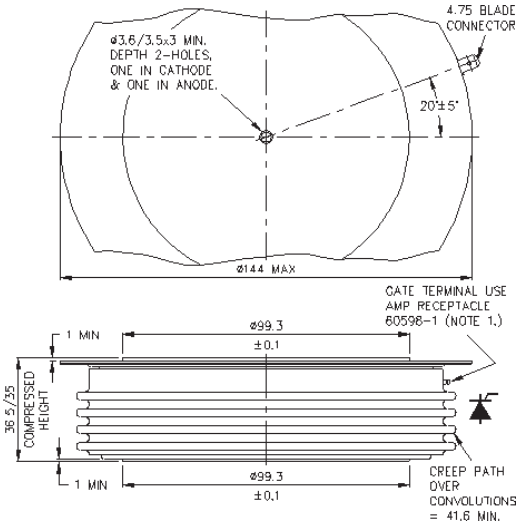

Outline drawings

Product Line of
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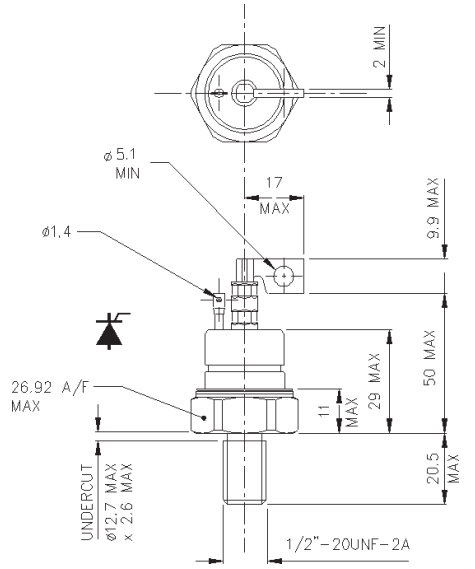
Dimensions in mm and inches (1 mm = 0.0394")

W16



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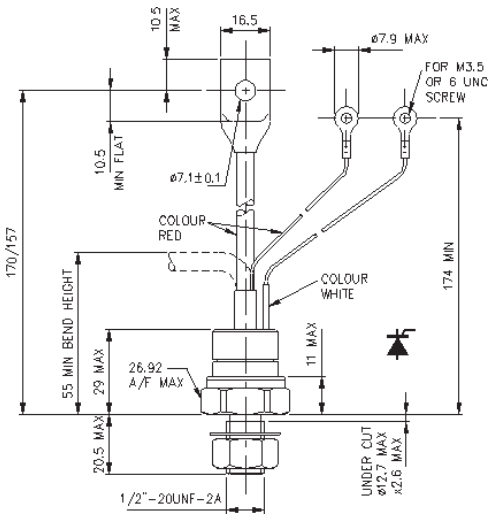

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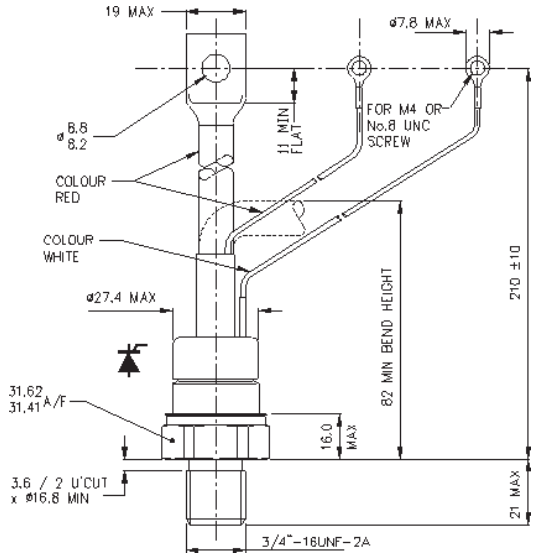

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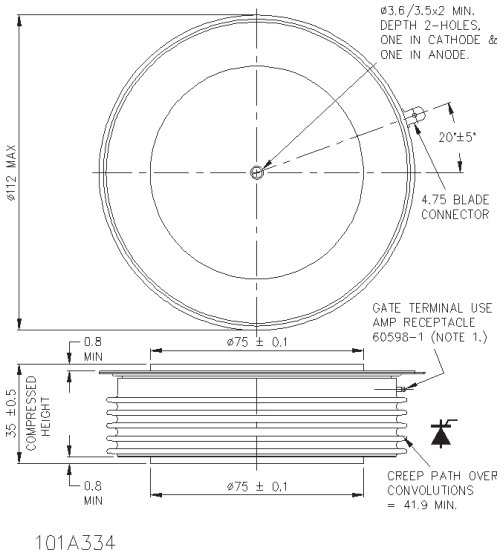

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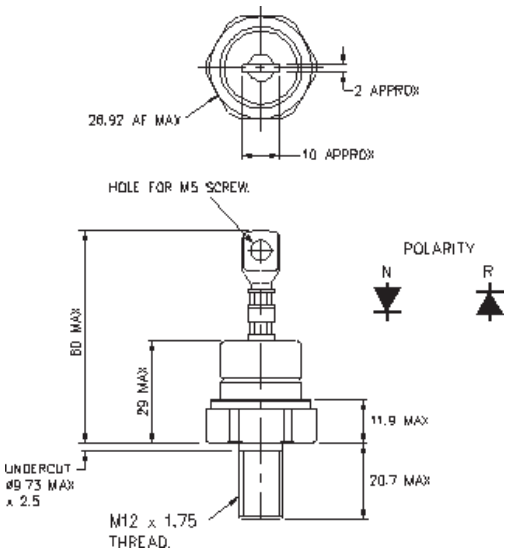

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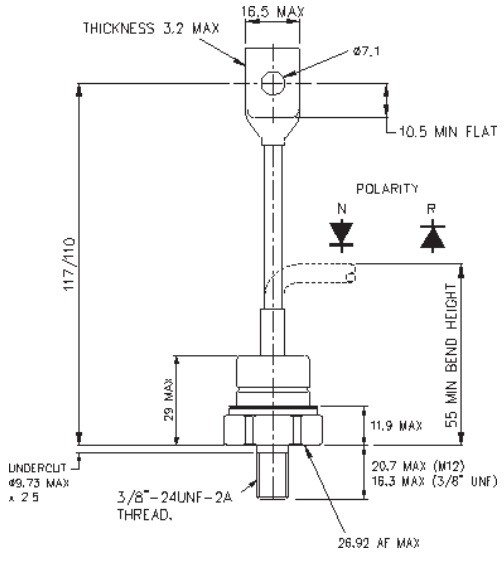
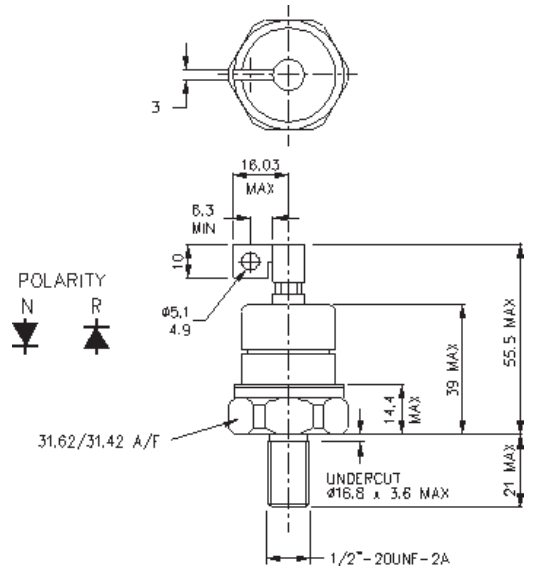


Outline drawings

Dimensions in mm and inches (1 mm = 0.0394")

W22



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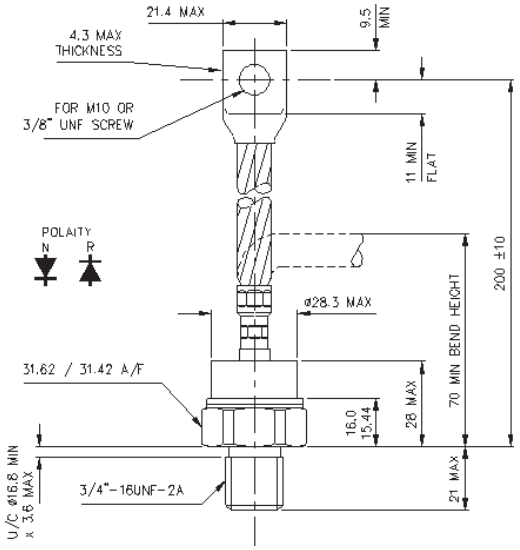

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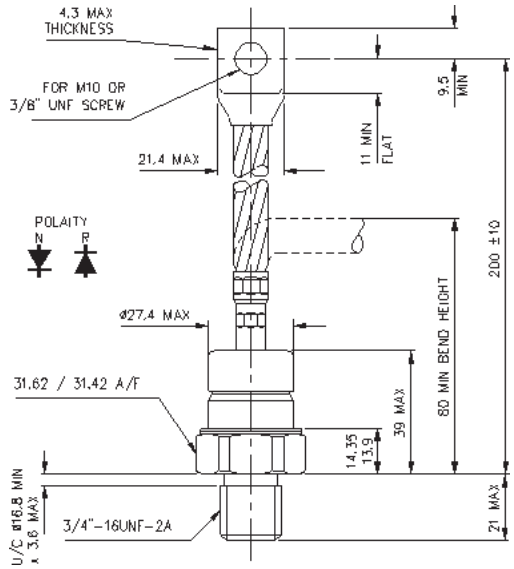

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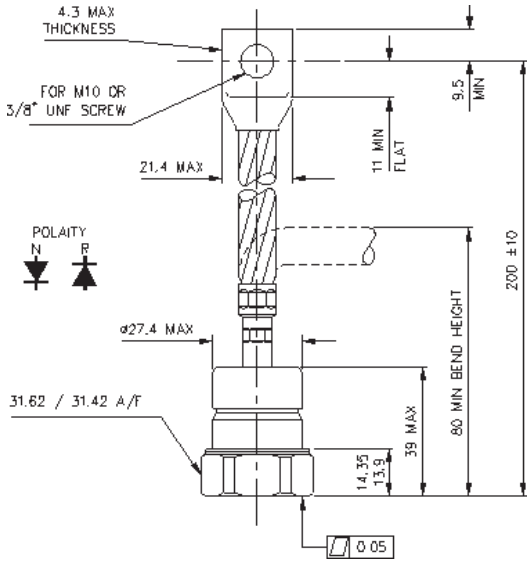

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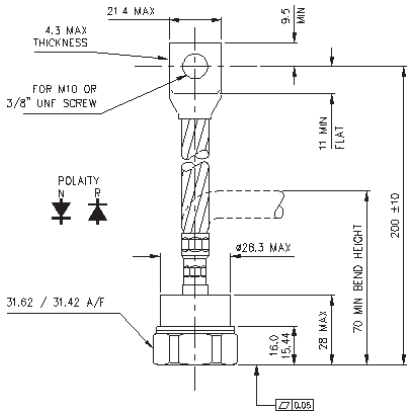

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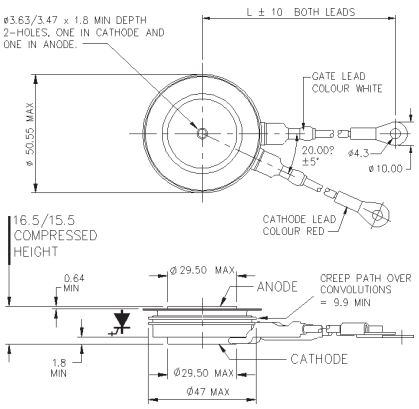

W29