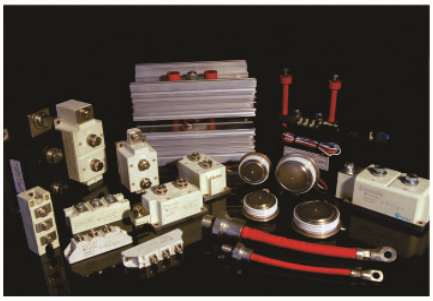
Zytrode®
Semicondutores



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Varixx

Phase control thyristor (Alloying Type)

Applications
- High power drive
- High Voltage Supplies
- Motor Control

Features
- Double-side cooling
- High mean current
- High surge current

Symbols	Characteristics	Symbols	Characteristics
F	Mounting force	T_{VJM}	Max. (Virtual) Junction temperature
$I_{F(AV)}$	Mean forward current	V_{DSM}	Non-repetitive peak off-state voltage
I_{FM}	Peak forward current	V_{RSM}	Non-repetitive peak reverse voltage
I_{FSM}	Surge forward current	V_{DRM}	Repetitive peak off-state voltage
$I_{T(AV)}$	Mean on-state current	V_{RRM}	Repetitive peak reverse voltage
I_{TM}	Peak on-state current	V_{FM}	Peak forward voltage
I_{TSM}	Surge (Non-repetitive) on-state current	V_{TM}	Peak on-state voltage
R_{thCH}	Thermal Resistance, Case to heatsink	V_{TO}	On-state threshold voltage
R_{thJC}	Thermal Resistance, Junction to case	r_T	On-state slope resistance
t_q	Circuit Commutated turn-off time	V_{FO}	Forward threshold voltage
T_C	Case temperature	r_f	Forward slope resistance

Parameter

$I_{F(AV)}$@ T_C=70 °C	$V_{DRM}V_{RRM}$	I_{FSM}@ T_{VJM} &10ms	V_{TM}@ I_{TM} &T_c=25°C		V_{TO}@T_{VJM}	r_T@T_{VJM}	T_{VJM}	R_{thJC}	R_{thCH}	F±10%		Reference
A	V	kA	A	V	V	mΩ		K/W	K/W	kN	Dimensions	
Phase control thyristor (up to 1400V)												
400	600-1400	6.3	600	1.4	0.85	0.64	125	0.08	0.02	5	ST06	VKT400/14
700	600-1400	9.1	1500	1.75	0.95	0.53	125	0.041	0.01	5	ST05	VKT700/14
850	600-1400	12.8	1500	1.6	0.87	0.382	125	0.035	0.01	10	ST07	VKT850/14
900	600-1400	15	1500	1.35	0.85	0.33	125	0.035	0.008	15	ST08	VKT900/14
1700	600-1400	26	1500	1.2	0.86	0.16	125	0.02	0.005	22	ST09	VKT1700/14
1850	600-1400	29	3000	1.4	0.84	0.13	125	0.018	0.005	30	ST04	VKT1850/14
2640	600-1400	47	3000	1.3	0.87	0.098	125	0.0125	0.004	45	ST11	VKT2640/14
3310	600-1400	60	3000	1.15	0.83	0.092	125	0.01	0.003	56	ST22	VKT3310/14
Phase control thyristor (up to 1800V)												
320	1200-1800	5	600	1.8	0.93	1.15	125	0.08	0.02	5	ST06	VKT320/18
640	1200-1800	8.3	1500	1.9	1.09	0.587	125	0.041	0.01	5	ST05	VKT640/18
770	1200-1800	11.5	1500	1.8	0.9	0.5	125	0.035	0.01	10	ST07	VKT770/18
850	1200-1800	14	1500	1.6	0.91	0.36	125	0.035	0.008	15	ST08	VKT850/18
1520	1200-1800	25	1500	1.35	0.88	0.2	125	0.02	0.005	22	ST09	VKT1520/18
1710	1200-1800	28	3000	1.5	0.88	0.16	125	0.018	0.005	30	ST04	VKT1710/18
2520	1200-1800	45	3000	1.45	0.91	0.12	125	0.0125	0.004	45	ST11	VKT2520/18
3030	1200-1800	60	3000	1.35	0.9	0.11	125	0.01	0.003	56	ST22	VKT3030/18
Phase control thyristor (up to 2400V)												
510	2000-2400	7.8	1500	2.40	0.94	1036	125	0.041	0.01	5	ST05	VKT500/24
670	2000-2400	10.0	1500	2.15	0.92	0.720	125	0.035	0.01	10	ST07	VKT600/24
1470	2000-2400	23.0	3000	1.80	0.96	0.230	125	0.018	0.005	30	ST04	VKT1400/24
2110	2000-2400	35.0	3000	1.65	0.96	0.179	125	0.0125	0.004	45	ST11	VKT2100/24
2730	2000-2400	45.0	3000	1.45	0.90	0.137	125	0.010	0.003	56	ST22	VKT2700/24

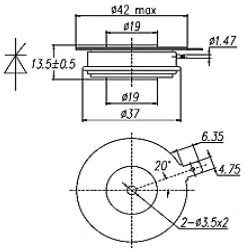
Parameter

	$I_{F(AV)}$@ T_C=70	$V_{DRM}V_{RRM}$	I_{FSM}@ T_{VJM} &10ms	V_{TM}@ I_{TM} &T_c=25°C		V_{TO}@T_{VJM}	r_T@T_{VJM}	T_{VJM}	R_{thJC}	R_{thCH}	F±10%		Reference
	A	V	kA	A	V	V	mΩ		K/W	K/W	kN	Dimensions	
Phase control thyristor (up to 2600V)													
	750	2000-2600	11.0	1500	1.85	0.95	0.5	125	0.035	0.008	15	ST08	VKT750/26
	1400	2000-2600	24.0	1500	1.5	0.89	0.27	125	0.02	0.005	22	ST09	VKT1400/26

Remarks:

1. thyristor on demand: 3400V / 5200V.
2. The standard length of gate and cathode leads is 400mm.
3. All dimensions shown in mm unless stated otherwise.

Dimensions



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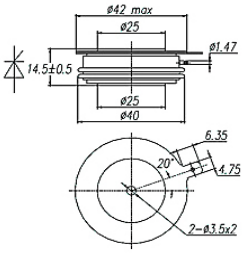

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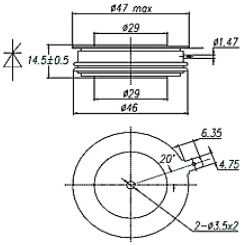

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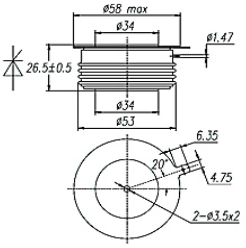

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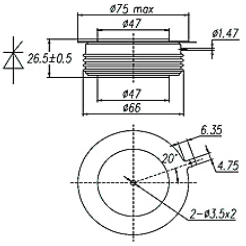

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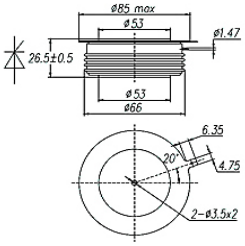

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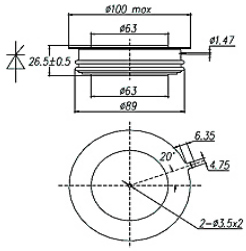

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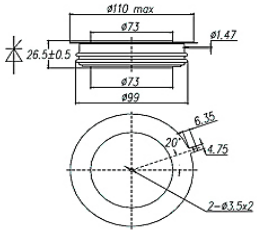


ST22

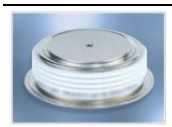
Rectifier Diode (Alloying Type)

Applications
- High power drive
- High Voltage Supplies
- Motor Control

Features
- Double-side cooling
- High mean current
- High surge current

Symbols	Characteristics	Symbols	Characteristics
F	Mounting force	T_{VJM}	Max. (Virtual) Junction temperature
$I_{F(AV)}$	Mean forward current	V_{DSM}	Non-repetitive peak off-state voltage
I_{FM}	Peak forward current	V_{RSM}	Non-repetitive peak reverse voltage
I_{FSM}	Surge forward current	V_{DRM}	Repetitive peak off-state voltage
$I_{T(AV)}$	Mean on-state current	V_{RRM}	Repetitive peak reverse voltage
I_{TM}	Peak on-state current	V_{FM}	Peak forward voltage
I_{TSM}	Surge (Non-repetitive) on-state current	V_{TM}	Peak on-state voltage
R_{thCH}	Thermal Resistance, Case to heatsink	V_{TO}	On-state threshold voltage
R_{thJC}	Thermal Resistance, Junction to case	r_T	On-state slope resistance
t_q	Circuit Commutated turn-off time	V_{FO}	Forward threshold voltage
T_C	Case temperature	r_f	Forward slope resistance

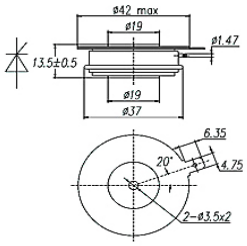
Parameter

$I_{F(AV)}$@ T_C=100 °C	V_{RRM}	I_{FSM}@ T_{VJM} &10ms	V_{TM}@ I_{TM} &T_c=25°C		V_{FO}@T_{VJM}	r_F@T_{VJM}	T_{VJM}	R_{thJC}	R_{thCH}	F±10%		Reference
A	V	kA	A	V	V	mΩ		K/W	K/W	kN	Dimensions	
Rectifier diode (up to 1400V)												
												
520	600-1400	5.9	800	1.45	0.80	0.657	190	0.080	0.02	5	SD06	VZP500/14
1360	600-1400	15.2	1500	1.30	0.78	0.257	190	0.035	0.01	10	SD07	VZP1360/14
1510	600-1400	16.8	1500	1.20	0.78	0.188	190	0.035	0.008	15	SD08	VZP1510/14
2770	600-1400	31.0	1500	1.05	0.78	0.092	190	0.020	0.005	22	SD09	VZP2770/14
3220	600-1400	35.8	3000	1.15	0.77	0.073	190	0.018	0.005	30	SD04	VZP3220/14
4650	600-1400	45.0	3000	1.05	0.76	0.051	190	0.0125	0.004	45	SD11	VZP4650/14
6080	600-1400	60.0	3000	1.05	0.76	0.035	190	0.010	0.003	56	SD22	VZP6080/14
Rectifier diode (up to 2200V)												
												
410	1600-2200	4.9	800	1.85	0.82	1.11	175	0.08	0.02	5	SD06	VZP410/22
990	1600-2200	12.5	1500	1.6	0.82	0.433	175	0.035	0.01	10	SD07	VZP990/22
1100	1600-2200	13.9	1500	1.45	0.82	0.318	175	0.035	0.008	15	SD08	VZP1100/22
2030	1600-2200	25.7	1500	1.2	0.82	0.156	175	0.02	0.005	22	SD09	VZP2030/22
2360	1600-2200	29.8	3000	1.35	0.81	0.125	175	0.018	0.005	30	SD04	VZP2360/22
3430	1600-2200	42.2	3000	1.2	0.79	0.086	175	0.0125	0.004	45	SD11	VZP3430/22
4460	1600-2200	56.4	3000	1.15	0.81	0.059	175	0.01	0.003	56	SD22	VZP4460/22

Remarks:

1. thyristor on demand: 3400V / 4500V / 6500V / 8500V
2. All dimensions shown in mm unless stated otherwise.

Dimensions



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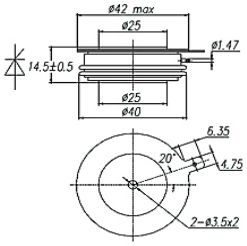

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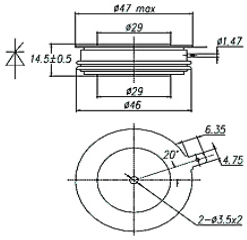

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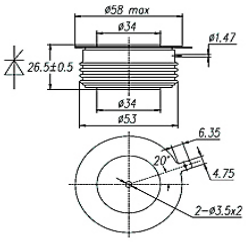

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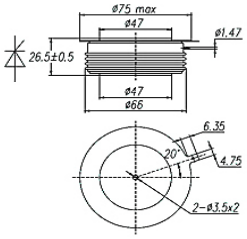

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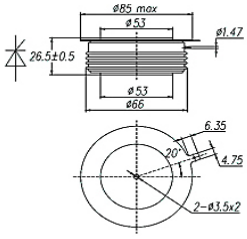

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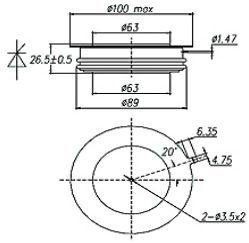

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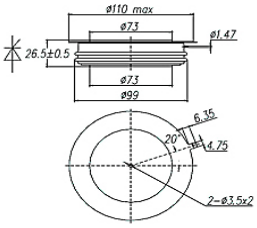


ST22

Zytrode

Fast Switching Thyristors

Applications

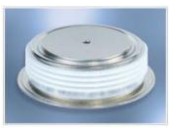
- M.F. Inductive heating systems
- DC choppers
- Pulse electrical power supplies

Features

- Double-side cooling
- Low switching loss
- Shorter turn-off time

Symbols	Characteristics	Symbols	Characteristics
F	Mounting force	T_{VJM}	Max. (Virtual) Junction temperature
$I_{F(AV)}$	Mean forward current	V_{DSM}	Non-repetitive peak off-state voltage
I_{FM}	Peak forward current	V_{RSM}	Non-repetitive peak reverse voltage
I_{FSM}	Surge forward current	V_{DRM}	Repetitive peak off-state voltage
$I_{T(AV)}$	Mean on-state current	V_{RRM}	Repetitive peak reverse voltage
I_{TM}	Peak on-state current	V_{FM}	Peak forward voltage
I_{TSM}	Surge (Non-repetitive) on-state current	V_{TM}	Peak on-state voltage
R_{thCH}	Thermal Resistance, Case to heatsink	V_{TO}	On-state threshold voltage
R_{thJC}	Thermal Resistance, Junction to case	r_T	On-state slope resistance
t_q	Circuit Commutated turn-off time	V_{FO}	Forward threshold voltage
T_C	Case temperature	r_f	Forward slope resistance

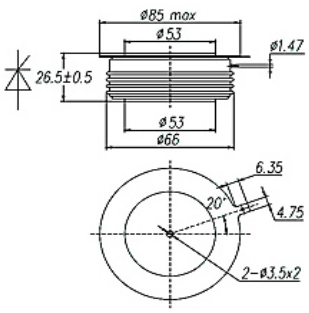
Parameter

$I_{T(AV)}$ @T_C=55 °C	$V_{DRM}V_{RRM}$	I_{TSM} @T_{VJM} &10ms	V_{FM} @/TM &Tc=T_{VJM}		T_{VJM}	R_{thJC}	R_{thCH}	t_q @T_{VJM}	F±10%		Reference
A	V	kA	A	V		K/W	K/W	µs	kN	Dimensions	
Fast switching thyristors - (up to 1200V)											
											
320	800-1200	4.1	600	2.35	125	0.08	0.02	20	5	ST06	VKK320/12
850	800-1200	10.7	1500	2.08	125	0.035	0.008	25	15	ST08	VKK850/12
1380	800-1200	17.4	2000	1.85	125	0.02	0.005	25	22	ST09	VKK1380/12
1680	800-1200	21.1	2000	1.75	125	0.018	0.005	25	30	ST04	VKK1680/12
2190	800-1200	27.5	3000	2.00	125	0.0124	0.004	25	45	ST11	VKK2190/12
2950	800-1200	31.6	4000	1.80	125	0.01	0.003	25	56	ST22	VKK2950/12
Fast switching thyristors - (up to 1400V)											
											
310	1200-1400	4	600	2.45	125	0.08	0.02	30	5	ST06	VKK310/14
750	1200-1400	9.5	1500	2.45	125	0.035	0.008	35	15	ST08	VKK750/14
1270	1200-1400	16	2000	2	125	0.02	0.005	35	22	ST09	VKK1270/14
1600	1200-1400	20.2	2000	1.85	125	0.018	0.005	35	30	ST04	VKK1600/14
2110	1200-1400	26.6	3000	2.15	125	0.0124	0.004	35	45	ST11	VKK2110/14
2900	1200-1400	30.9	4000	1.9	125	0.01	0.003	35	56	ST22	VKK2900/14
Fast switching thyristors - (up to 2000V)											
											
300	1600-2000	3.8	600	2.6	125	0.08	0.02	40	5	ST06	VKK300/20
680	1600-2000	8.6	1500	2.8	125	0.035	0.008	50	15	ST08	VKK680/20
1200	1600-2000	15.1	2000	2.15	125	0.02	0.005	50	22	ST09	VKK1200/20
1510	1600-2000	19	2000	2	125	0.018	0.005	50	30	ST04	VKK1510/20
2010	1600-2000	25.3	3000	2.35	125	0.0124	0.004	50	45	ST11	VKK2010/20
2740	1600-2000	28.9	4000	2.15	125	0.01	0.003	50	56	ST22	VKK2740/20

Remarks:

1. thyristor on demand: 2800V / 4500V
2. The standard lenght of gate and cathode leads is 400mm.
3. All dimensions shown in mm unless stated otherwise.

Dimensões



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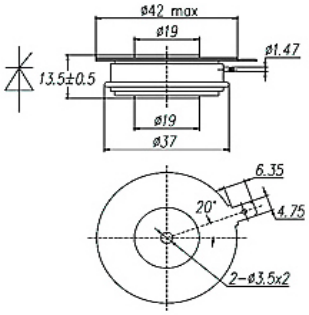

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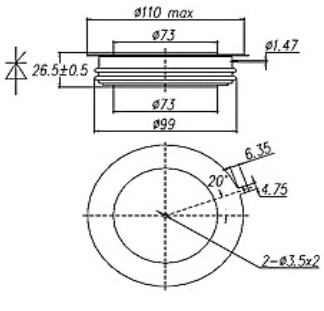

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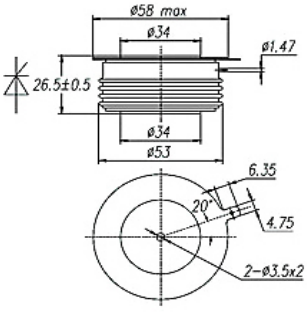

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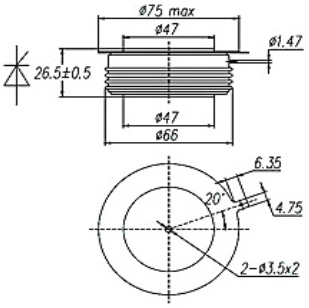

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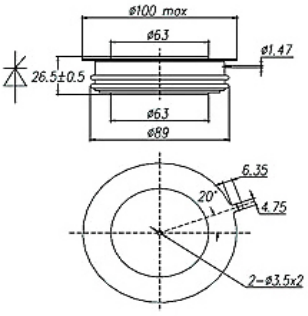


ST11

Fast Recovery Diode - Capsule

Applications

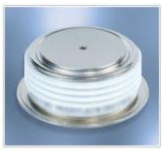
- Inverse diodes for power transistors,GTO thyristors
- AC motor control
- Snubber diodes and free-wheeling diodes
- UPS

Features

- Small recovered charge
- Soft recovery
- Up to 3000 v reverse voltage
- Capsule type metal-ceramic packages for double sided cooling

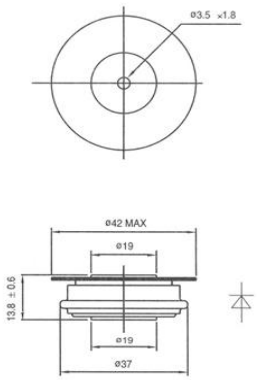
Symbols	Characteristics	Symbols	Characteristics
F	Mounting force	T_{VJM}	Max. (Virtual) Junction temperature
$I_{F(AV)}$	Mean forward current	V_{DSM}	Non-repetitive peak off-state voltage
I_{FM}	Peak forward current	V_{RSM}	Non-repetitive peak reverse voltage
I_{FSM}	Surge forward current	V_{DRM}	Repetitive peak off-state voltage
$I_{T(AV)}$	Mean on-state current	V_{RRM}	Repetitive peak reverse voltage
I_{TM}	Peak on-state current	V_{FM}	Peak forward voltage
I_{TSM}	Surge (Non-repetitive) on-state current	V_{TM}	Peak on-state voltage
R_{thCH}	Thermal Resistance, Case to heatsink	V_{TO}	On-state threshold voltage
R_{thJC}	Thermal Resistance, Junction to case	r_T	On-state slope resistance
t_q	Circuit Commutated turn-off time	V_{FO}	Forward threshold voltage
T_C	Case temperature	r_f	Forward slope resistance

Parameter

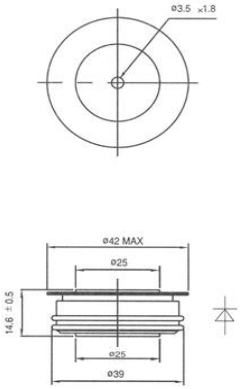
V_{RRM}	$IF_{AV)}$ 55°C	t_{rr} 40A/µs	Q_{rr} 25%Chord	I_{FSM}	I^2t 10 ms	I_{RRM} 150 °C	V_{FM}/I_{FM}	V_{FO}	r_F	$R_{th(j-hs)}$	T_{jm}	Mounting Force		Reference
V	A	µs	µc	KA	KA2s	mA	V/A	V	mΩ	°C/W	°C	KN	Dimensions	
Fast Recovery Diode - Capsule (up to 1200V)														
														
200-1200	535	2.0	56	6.2	192	16	1.43/600	0.98	0.75	0.090	150	3.3-5.5	ZT19aT	VZK500/12
200-1200	1389	3.0	150	16	1280	40	1.53/1400	1.15	0.27	0.033	150	10-20	ZT33cT	VZK1350/12
Fast Recovery Diode - (up to 2000V)														
														
1200-2000	531	2.0	120	6.2	192	16	1.54/700	1.02	0.74	0.090	150	3.3-5.5	ZT19aT	VZK500/20
1200-2000	737	3.0	120	8.6	370	30	1.52/700	1.0	0.74	0.055	150	5.3-10	ZT25aT	VZK700/20
1200-2000	1268	3.0	248	14	980	40	1.70/1400	1.24	0.33	0.033	150	10-20	ZT33cT	VZK1250/20
1200-2000	2017	4.0	225	24	2880	80	1.69/3000	1.0	0.23	0.022	150	19-26	ZT50cT	VZK2000/20
1100-2000	3923	6.0	1000	45	10125	200	1.58/4000	1.14	0.11	0.011	150	35-47	ZT73cT	VZK3900/20
Fast Recovery Diode - (up to 3000V)														
														
2000-3000	1195	3.0	338	12	720	40	1.90/1400	1.44	0.33	0.033	150	10-20	ZT33cT	VZK1150/30
2000-3000	3770	6.0	1300	44	9700	200	1.72/4500	1.19	0.118	0.011	150	35-47	ZT73cT	VZK3750/30

Dimensões

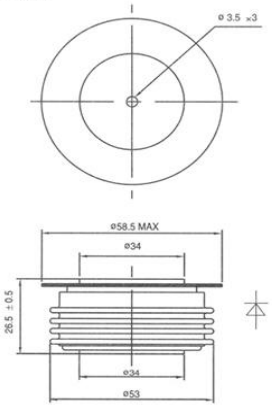
ZT19aT



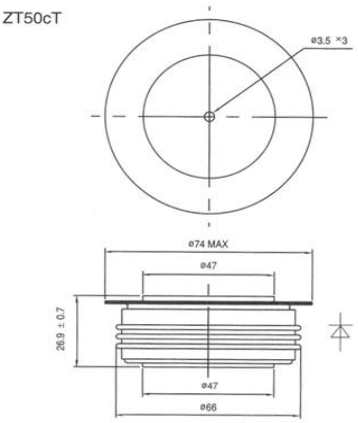
ZT25aT



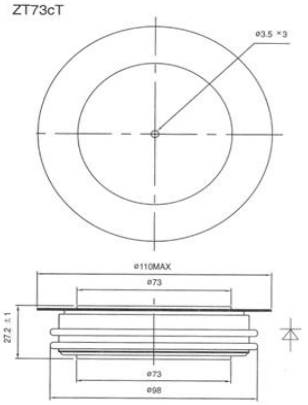
ZT33cT



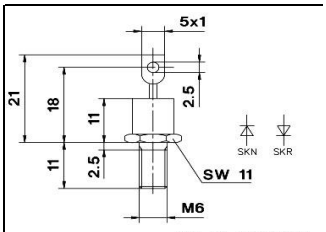
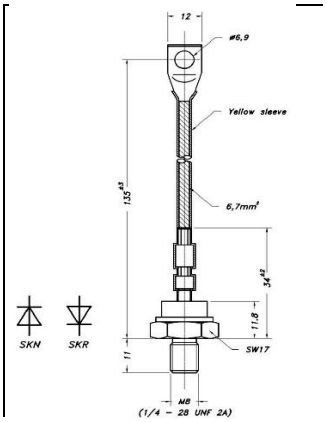
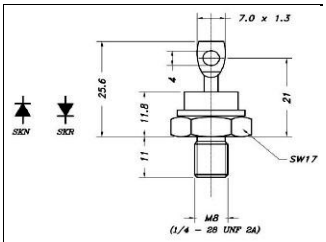
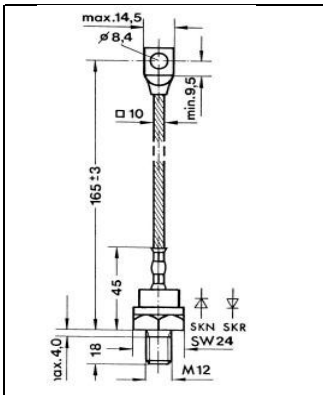
ZT50cT



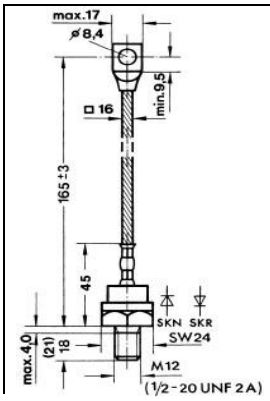
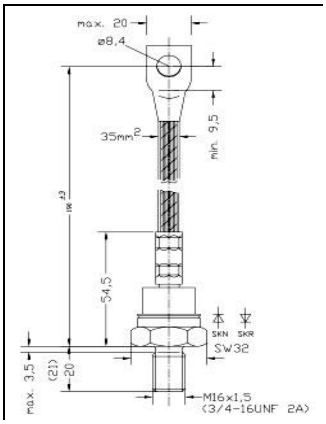
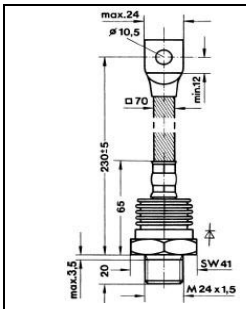
ZT73cT



· Parameter

Reverse Voltage	V_{AFV}	I_{FRMS}	Dimension	V_{RSM} V_{RRM}	Reference 	Reference 	Remarks
V	A	A		V	Anode to Stud	Catode to Stud	
Rectifier Diode							
1600	25 sin. 180° Tc=125°C	40		400	VZPN 26/04	VZPR 26/04	- Hermetic metal case with glass insulator; - Threaded stud ISO M6 (VZPR26 also 10-12 UNF); - Data Sheet pág 12
				800	VZPN 26/08	VZPR 26/08	
				1200	VZPN 26/12	VZPR 26/12	
				1400	VZPN 26/14	VZPR 26/14	
				1600	VZPN 26/16	VZPR 26/16	
	45 sin. 180° Tc=125°C	80		400	VZPN 45/04	VZPR 45/04	- Hermetic metal case with glass insulator; - Threaded stud ISO M8; - Data Sheet pág 13
				800	VZPN 45/08	VZPR 45/08	
				1200	VZPN 45/12	VZPR 45/12	
				1400	VZPN 45/14	VZPR 45/14	
				1600	VZPN 45/16	VZPR 45/16	
	70 sin. 180° Tc=125°C	150		400	VZPN 71/04	VZPR 71/04	- Hermetic metal case with glass insulator; - Threaded stud ISO M8 and also 1/4-28 UNF; - Data Sheet pág ????
				800	VZPN 71/08	VZPR 71/08	
				1200	VZPN 71/12	VZPR 71/12	
				1400	VZPN 71/14	VZPR 71/14	
				1600	VZPN 71/16	VZPR 71/16	
1800	100 sin. 180° Tc=125°C	200		400	VZPN 100/04	VZPR 100/04	- Hermetic metal case with glass insulator; - Threaded stud ISO M12, M16×1.5; - Data Sheet pág 15
				800	VZPN 100/08	VZPR 100/08	
				1200	VZPN 100/12	VZPR 100/12	
				1400	VZPN 100/14	VZPR 100/14	
				1600	VZPN 100/16	VZPR 100/16	
				1800	VZPN 100/18	VZPR 100/18	

· Parameter

Reverse Voltage	V_{AFV}	I_{FRMS}	Dimension	V_{RSM} V_{RRM}	Reference 	Reference 	Remarks
V	A	A		V	Anode to Stud	Catode to Stud	
Rectifier Diode							
	130 sin. 180° Tc=125°C	260		400	VZPN 130/04	VZPR 130/04	- Hermetic metal case with glass insulator; - Threaded stud ISO M12 (also 1/2-20 UNF, 3/8-24UNF and M12×1.5); - Data Sheet pág 16
				800	VZPN 130/08	VZPR 130/08	
				1200	VZPN 130/12	VZPR 130/12	
				1400	VZPN 130/14	VZPR 130/14	
				1600	VZPN 130/16	VZPR 130/16	
				1800	VZPN 130/18	VZPR 130/18	
	240 sin. 180° Tc=125°C	500		400	VZPN 240/04	VZPR 240/04	- Hermetic metal case with glass insulator; - Threaded stud ISO M16×1.5; - Data Sheet pág 17
				800	VZPN 240/08	VZPR 240/08	
				1200	VZPN 240/12	VZPR 240/12	
				1400	VZPN 240/14	VZPR 240/14	
				1600	VZPN 240/16	VZPR 240/16	
				1800	VZPN 240/18	VZPR 240/18	
3000	320 sin. 180° Tc=125°C	700		1800	VZPN 400/18		- Hermetic metal case with ceramic insulator with extra long creepage distances; - Threaded stud ISO M24×1.5; - Data Sheet pág 18
				2400	VZPN 400/24		
				2700	VZPN 400/27		
				3000	VZPN 400/30		

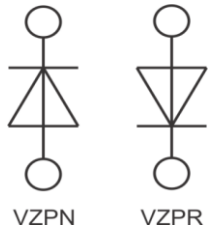
Rectifier Diode (VZPN26 VZPR26)

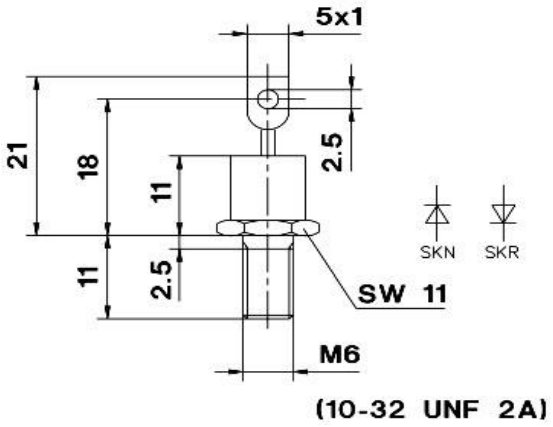
Features

- Reverse voltage up to 1600V
- Hermetic metal case with glass insulator
- Threaded stud ISO M6(VZPR26 also 10-12 UNF)
- VZPN: anode to stud, VZPR: cathode to stud

Typical Applications

- All-purpose mean power rectifier diodes
- Cooling via metal plates or heatsinks
- Non-controllable and half-controllable rectifiers
- Free-wheeling diodes
- Recommended snubber network: RC: 0.05µF, 200Ω(P_R=1W), R_P=150kΩ(P_R=4W)





V_{RSM}	V_{RRM}	I_{FRMS}=40A (maximum value for continuous operation)	
V	V	I_{FAV}=25A(sin.180°; Tc=100°C)	
400	400	VZPN 26/04	VZPR 26/04
800	800	VZPN 26/08	VZPR 26/08
1200	1200	VZPN 26/12	VZPR 26/12
1400	1400	VZPN 26/14	VZPR 26/14
1600	1600	VZPN 26/16	VZPR 26/16

Symbol	Conditions	Values	Units
I_{FAV}	sin.180; T_c=100°C	25	A
I_D	K9: Ta=45°C; B2/B6	20/29	A
	K3: Ta=45°C; B2/B6	35/50	A
I_{FSM}	T_{vj}=25°C; 10ms	375	A
	T_{vj}=180°C; 10ms	320	A
i^2t	T_{vj}=25°C; 8.3...10ms	700	A^2S
	T_{vj}=180°C; 8.3...10ms	510	A^2S
V_F	T_{vj}=25°C; I_F=60A	max. 1.55	V
$V_{(TO)}$	T_{vj}=180°C	max. 0.85	V
r_T	T_{vj}=180°C	max. 11	mΩ
I_{RD}	T_{vj}=180°C; V_{RD}=V_{RRM}	max. 4	mA
Q_{rr}	T_{vj}=160°C; -di_F/dt=10A/µs	20	µC
$R_{th(j-c)}$		2	K/W
$R_{th(c-s)}$		1	K/W
T_{vj}		-40...+180	°C
T_{stg}		-55...+180	°C
V_{isol}		-	V~
M_s	to heatsink	2.0	Nm
a		5*9.81	m/s^2
m	approx	7	g
Case		E8	

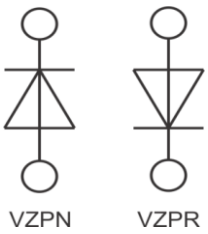
Rectifier Diode (VZPN45 VZPR45)

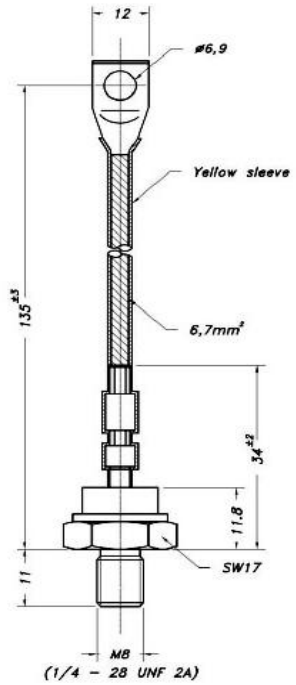
Features

- Reverse voltage up to 1600V
- Hermetic metal case with glass insulator
- Threaded stud ISO M8
- VZPN: anode to stud, VZPR: cathode to stud

Typical Applications

- All-purpose mean power rectifier diodes
- Cooling via heatsinks
- Non-controllable and half-controllable rectifiers
- Free-wheeling diodes
- Recommended snubber network: RC: 0.1µF, 200Ω(P_R=1W), R_P=80kΩ(P_R=6W)

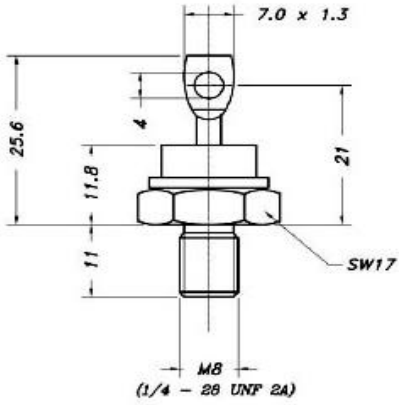




V_{RSM}	V_{RRM}	I_{FRMS}=80A (maximum value for continuous operation)	
V	V	I_{FAV}=45A(sin.180°; Tc=100°C)	
400	400	VZPN 45/04	VZPR 45/04
800	800	VZPN 45/08	VZPR 45/08
1200	1200	VZPN 45/12	VZPR 45/12
1400	1400	VZPN 45/14	VZPR 45/14
1600	1600	VZPN 45/16	VZPR 45/16

Symbol	Conditions	Values	Units
I_{FAV}	sin.180; T_c=100°C	50	A
I_D	K9: Ta=45°C; B2/B6	40/57	A
	K3: Ta=45°C; B2/B6	86/120	A
I_{FSM}	T_{vj}=25°C; 10ms	700	A
	T_{vj}=180°C; 10ms	600	A
i^2t	T_{vj}=25°C; 8.3...10ms	2500	A^2S
	T_{vj}=180°C; 8.3...10ms	1800	A^2S
V_F	T_{vj}=25°C; I_F=150A	max. 1.65	V
$V_{(TO)}$	T_{vj}=180°C	max. 0.85	V
r_T	T_{vj}=180°C	max. 5	mΩ
I_{RD}	T_{vj}=180°C; V_{RD}=V_{RRM}	max. 10	mA
Q_{rr}	T_{vj}=160°C; -di_F/dt=10A/µs	70	µC
$R_{th(j-c)}$		0.85	K/W
$R_{th(c-s)}$		0.25	K/W
T_{vj}		-40...+180	°C
T_{stg}		-55...+180	°C
V_{isol}		-	V~
M_s	to heatsink	4	Nm
a		5*9.81	m/s^2
m	approx	30	g
Case		E12	

Rectifier Diode (VZPN71 VZPR71)

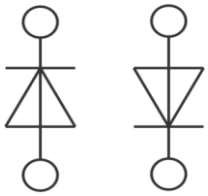


Features

- Reverse voltage up to 1600V
- Hermetic metal case with glass insulator
- Threaded stud ISO M8 and also 1/4-28 UNF
- VZPN: anode to stud, VZPR: cathode to stud

Typical Applications

- All-purpose mean power rectifier diodes
- Cooling via heatsinks
- Non-controllable and half-controllable rectifiers
- Free-wheeling diodes
- Recommended snubber network: RC: 0.1µF, 100Ω(P_R=2W), R_P=80kΩ(P_R=6W)



V_{RSM}	V_{RRM}	I_{FRMS}=150A (maximum value for continuous operation)	
V	V	I_{FAV}=70A(sin.180°; Tc=125°C)	
400	400	VZPN 71/04	VZPR 71/04
800	800	VZPN 71/08	VZPR 71/08
1200	1200	VZPN 71/12	VZPR 71/12
1400	1400	VZPN 71/14	VZPR 71/14
1600	1600	VZPN 71/16	VZPR 71/16

Symbol	Conditions	Values	Units
I_{FAV}	sin.180; T_c=100°C	95	A
I_D	K1.1: Ta=45°C; B2/B6	112/159	A
	K1.1F: Ta=35°C; B2/B6	174/246	A
I_{FSM}	T_{vj}=25°C; 10ms	1150	A
	T_{vj}=180°C; 10ms	1000	A
i^2t	T_{vj}=25°C; 8.3...10ms	6600	A^2S
	T_{vj}=180°C; 8.3...10ms	5000	A^2S
V_F	T_{vj}=25°C; I_F=200A	max. 1.5	V
$V_{(TO)}$	T_{vj}=180°C	max. 0.85	V
r_T	T_{vj}=180°C	max. 3	mΩ
I_{RD}	T_{vj}=180°C; V_{RD}=V_{RRM}	max. 10	mA
Q_{rr}	T_{vj}=160°C; -di_F/dt=10A/µs	70	µC
$R_{th(j-c)}$		0.55	K/W
$R_{th(c-s)}$		0.2	K/W
T_{vj}		-40...+180	°C
T_{stg}		-55...+180	°C
V_{isol}		-	V~
M_s	to heatsink	4	Nm
a		5*9.81	m/s^2
m	approx	18	g
Case		E11	

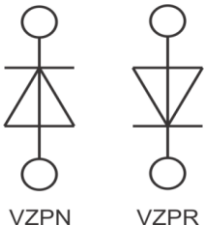
Rectifier Diode (VZPN100 VZPR100)

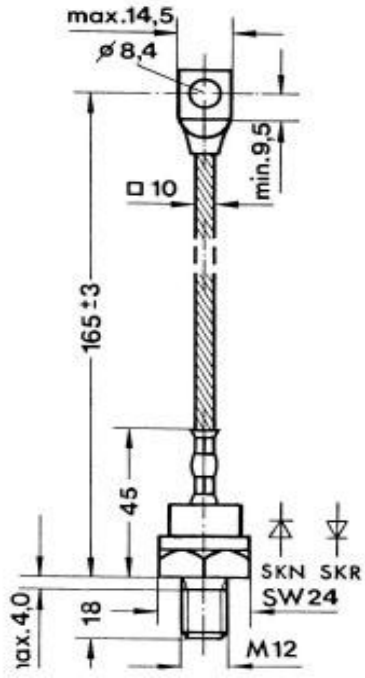
Features

- Reverse voltage up to 1800V
- Hermetic metal case with glass insulator
- Threaded stud ISO M12, M16×1.5
- VZPN: anode to stud, VZPR: cathode to stud

Typical Applications

- All-purpose mean power rectifier diodes
- Cooling via heatsinks
- Non-controllable and half-controllable rectifiers
- Free-wheeling diodes
- Recommended snubber network: RC: 0.25µF, 50Ω(P_R=2W), R_P=50kΩ(P_R=20W)

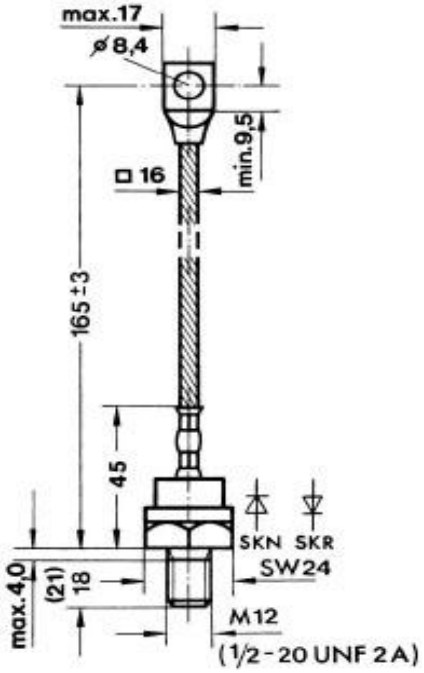




V_{RSM}	V_{RRM}	I_{FRMS}=200A (maximum value for continuous operation)	
V	V	I_{FAV}=100A(sin.180°; Tc=120°C)	
400	400	VZPN 100/04	VZPR 100/04
800	800	VZPN 100/08	VZPR 100/08
1200	1200	VZPN 100/12	VZPR 100/12
1400	1400	VZPN 100/14	VZPR 100/14
1600	1600	VZPN 100/16	VZPR 100/16
1800	1800	VZPN 100/18	VZPR 100/18

Symbol	Conditions	Values	Units
I_{FAV}	sin.180; T_c=100°C	125	A
I_D	K1.1: Ta=45°C; B2/B6	140/204	A
	K1.1F: Ta=35°C; B2/B6	240/336	
I_{FSM}	T_{vj}=25°C; 10ms	1750	A
	T_{vj}=180°C; 10ms	1500	
i^2t	T_{vj}=25°C; 8.3...10ms	15000	A^2S
	T_{vj}=180°C; 8.3...10ms	11500	
V_F	T_{vj}=25°C; I_F=400A	max. 1.55	V
$V_{(TO)}$	T_{vj}=180°C	max. 0.85	V
r_T	T_{vj}=180°C	max. 1.8	mΩ
I_{RD}	T_{vj}=180°C; V_{RD}=V_{RRM}	max. 15	mA
Q_{rr}	T_{vj}=160°C; -di_F/dt=10A/µs	100	µC
$R_{th(j-c)}$		0.45	K/W
$R_{th(c-s)}$		0.08	K/W
T_{vj}		-40...+180	oC
T_{stg}		-55...+180	oC
V_{isol}		-	V~
M_s	to heatsink	10	Nm
a		5*9.81	m/s^2
m	approx	90	g
Case		E13	

Rectifier Diode (VZPN130 VZPR130)

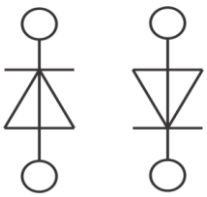


Features

- Reverse voltage up to 1800V
- Hermetic metal case with glass insulator
- Threaded stud ISO M12 (also 1/2-20 UNF, 3/8-24UNF and M12×1.5)
- VZPN: anode to stud, VZPR: cathode to stud

Typical Applications

- All-purpose mean power rectifier diodes
- Cooling via heatsinks
- Non-controllable and half-controllable rectifiers
- Free-wheeling diodes
- Recommended snubber network: RC: 0.25µF, 50Ω(P_R=2W), R_P=50kΩ(P_R=20W)



V_{RSM}	V_{RRM}	I_{FRMS}=260A (maximum value for continuous operation)	
V	V	I_{FAV}=130A(sin.180°; Tc=125°C)	
400	400	VZPN 130/04	VZPR 130/04
800	800	VZPN 130/08	VZPR 130/08
1200	1200	VZPN 130/12	VZPR 130/12
1400	1400	VZPN 130/14	VZPR 130/14
1600	1600	VZPN 130/16	VZPR 130/16
1800	1800	VZPN 130/18	VZPR 130/18

Symbol	Conditions	Values	Units
I_{FAV}	sin.180; T_c=100°C	165	A
I_D	K1.1: Ta=45°C; B2/B6	160/225	A
	K1.1F: Ta=35°C; B2/B6	290/405	
I_{FSM}	T_{vj}=25°C; 10ms	2500	A
	T_{vj}=180°C; 10ms	2000	
i^2t	T_{vj}=25°C; 8.3...10ms	31000	A^2S
	T_{vj}=180°C; 8.3...10ms	20000	
V_F	T_{vj}=25°C; I_F=500A	max. 1.5	V
$V_{(TO)}$	T_{vj}=180°C	max. 0.85	V
r_T	T_{vj}=180°C	max. 1.3	mΩ
I_{RD}	T_{vj}=180°C; V_{RD}=V_{RRM}	max. 22	mA
Q_{rr}	T_{vj}=160°C; -di_F/dt=10A/µs	120	µC
$R_{th(j-c)}$		0.35	K/W
$R_{th(c-s)}$		0.08	K/W
T_{vj}		-40...+180	oC
T_{stg}		-55...+180	oC
V_{isol}		-	V~
M_s	to heatsink	10	Nm
a		5*9.81	m/s^2
m	approx	100	g
Case		E14	

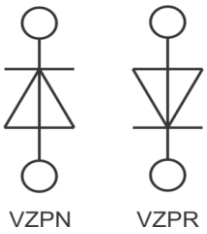
Rectifier Diode (VZPN240 VZPR240)

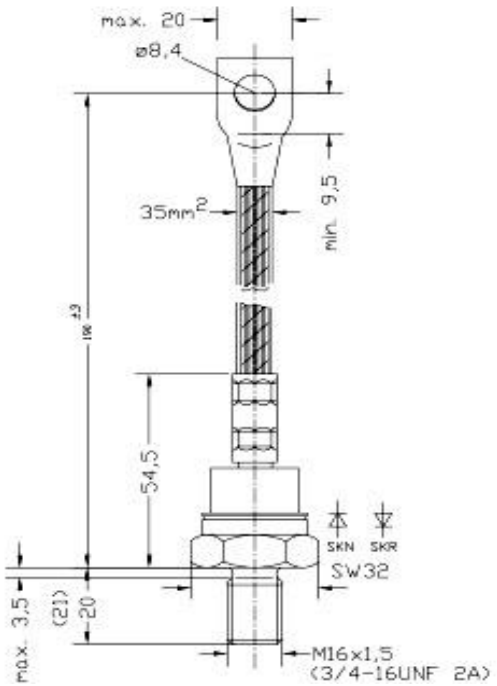
Features

- Reverse voltage up to 1800V
- Hermetic metal case with glass insulator
- Threaded stud ISO M16×1.5
- VZPN/VZPR 240/04.../16 also available with threaded stud 3/4-16UNF (e.g.VZPR240/12 UNF)
- VZPN: anode to stud, VZPR: cathode to stud

Typical Applications

- All-purpose mean power rectifier diodes
- Cooling via heatsinks
- Non-controllable and half-controllable rectifiers
- Free-wheeling diodes
- Recommended snubber network: RC: 0.5µF, 30Ω(P_R=2W), R_P=50kΩ(P_R=20W)





V_{RSM}	V_{RRM}	I_{FRMS}=500A (maximum value for continuous operation)	
V	V	I_{FAV}=240A(sin.180°; Tc=125°C)	
400	400	VZPN 240/04	VZPR 240/04
800	800	VZPN 240/08	VZPR 240/08
1200	1200	VZPN 240/12	VZPR 240/12
1400	1400	VZPN 240/14	VZPR 240/14
1600	1600	VZPN 240/16	VZPR 240/16
1800	1800	VZPN 240/18	VZPR 240/18

Symbol	Conditions	Values	Units
I_{FAV}	sin.180; T_c=100°C	320	A
I_D	K0.55: Ta=45°C; B2/B6	340/480	A
	K0.55F: Ta=35°C; B2/B6	620/840	
I_{FSM}	T_{vj}=25°C; 10ms	6000	A
	T_{vj}=180°C; 10ms	5000	
i^2t	T_{vj}=25°C; 8.3...10ms	180000	A^2S
	T_{vj}=180°C; 8.3...10ms	125000	
V_F	T_{vj}=25°C; I_F=750A	max. 1.4	V
$V_{(TO)}$	T_{vj}=180°C	max. 0.85	V
r_T	T_{vj}=180°C	max. 0.6	mΩ
I_{RD}	T_{vj}=180°C; V_{RD}=V_{RRM}	max. 60	mA
Q_{rr}	T_{vj}=160°C; -di_F/dt=10A/µs	200	µC
$R_{th(j-c)}$		0.2	K/W
$R_{th(c-s)}$		0.03	K/W
T_{vj}		-40...+180	oC
T_{stg}		-55...+180	oC
V_{isol}		-	V~
M_s	to heatsink	30	Nm
a		5*9.81	m/s^2
m	approx	250	g
Case		E15	

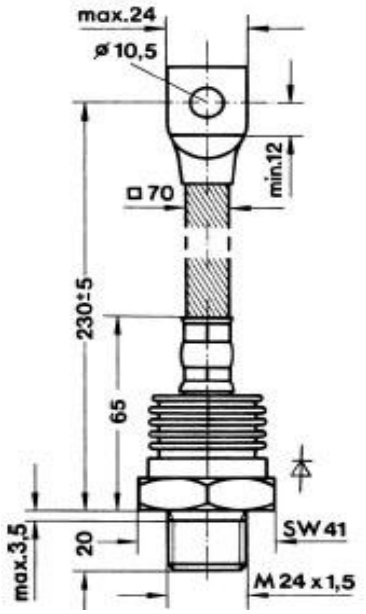
Rectifier Diode (VZPN400)

Features

- Reverse voltage up to 3000V
- Hermetic metal case with ceramic insulator with extra long creepage distances
- Threaded stud ISO M24×1.5
- VZPN: anode to stud

Typical Applications

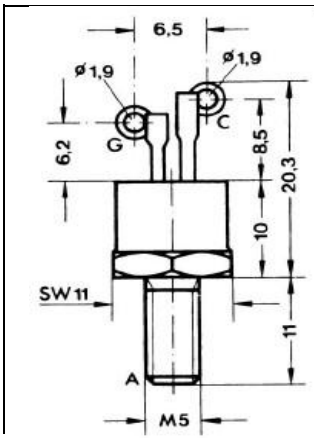
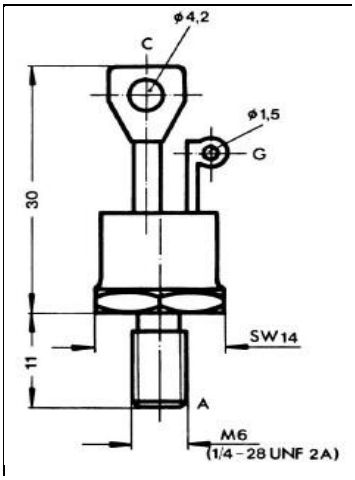
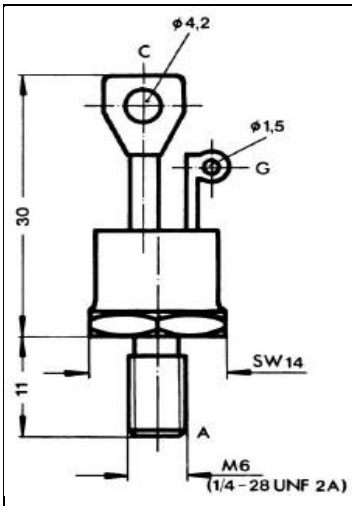
- High voltage rectifier diode, especially for traction applications
- Cooling via heatsinks
- Non-controllable and half-controllable rectifiers
- Free-wheeling diodes
- Recommended snubber network: RC: 1 µF, 20Ω(P_R=2W), R_P=25kΩ(P_R=20W)



V_{RSM}	V_{RRM}	I_{FRMS}=700A (maximum value for continuous operation)	
V	V	I_{FAV}=320A(sin.180°; Tc=125°C)	
1800	1800	VZPN 400/18	
2400	2400	VZPN 400/24	
2700	2700	VZPN 400/27	
3000	3000	VZPN 400/30	

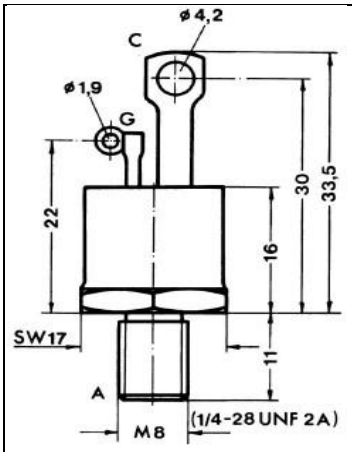
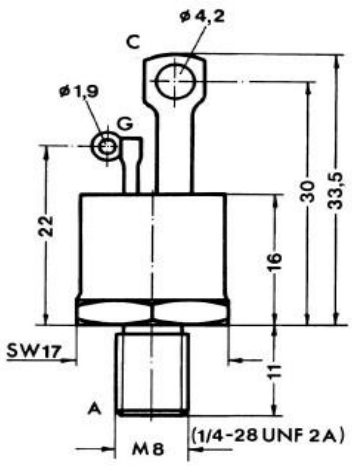
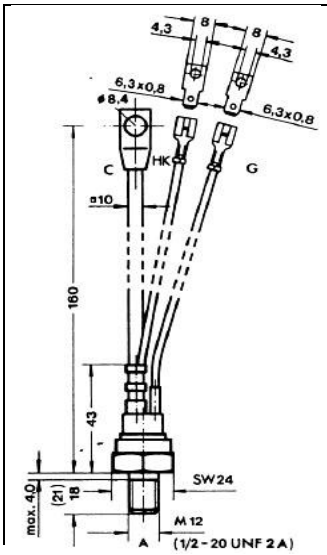
Symbol	Conditions	Values	Units
I_{FAV}	sin.180; T_c=85(100)°C	445(400)	A
I_D	K0.55; Ta=45°C; B2/B6	310/450	A
	K0.55F; Ta=35°C; B2/B6	700/1000	
I_{FSM}	T_{vj}=25°C; 10ms	9000	A
	T_{vj}=160°C; 10ms	7500	
i^2t	T_{vj}=25°C; 8.3...10ms	400000	A^2S
	T_{vj}=160°C; 8.3...10ms	280000	
V_F	T_{vj}=25°C; I_F=1200A	max. 1.45	V
$V_{(TO)}$	T_{vj}=160°C	max. 0.9	V
r_T	T_{vj}=160°C	max. 0.5	mΩ
I_{RD}	T_{vj}=160°C; V_{RD}=V_{RRM}	max. 60	mA
Q_{rr}	T_{vj}=160°C; -di_F/dt=10A/µs	400	µC
$R_{th(j-c)}$		0.11	K/W
$R_{th(c-s)}$		0.01	K/W
T_{vj}		-40...+160	oC
T_{stg}		-55...+160	oC
V_{isol}		-	V~
M_s	to heatsink	60	Nm
a		5*9.81	m/s^2
m	approx	500	g
Case		E17	

Parameter

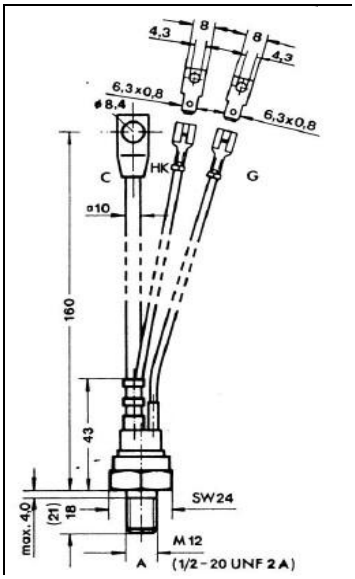
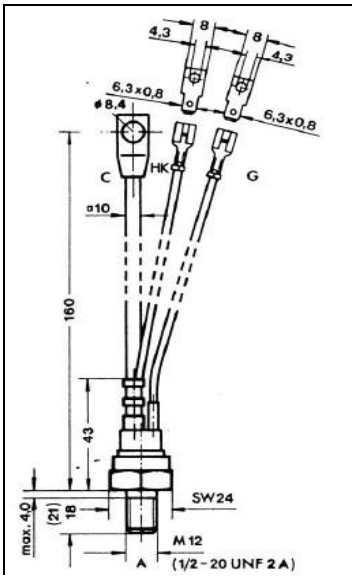
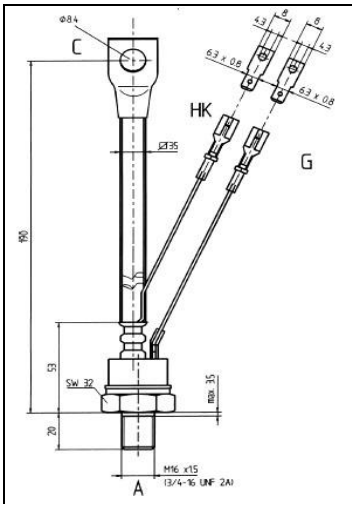
I_{TAV} A	I_{TRMS} A	Dimension	V_{RSM} V	V_{RRM} V_{DRM} V	Reference	Remarks
Line Thyristor						
10 sin. 180° Tc=111°C	30		700	600	VKP 10/06	- Hermetic metal case with glass insulator; - Threaded stud ISO M5; - International standard case; - Data Sheet pág 23
			900	800	VKP 10/08	
			1300	1200	VKP 10/12	
16 sin. 180° Tc=104°C	40		500	400	VKP 16/04	- Hermetic metal case with glass insulator; - Threaded stud ISO M6 or UNF 1/4-28; - International standard case; - Data Sheet pág 24
			700	600	VKP 16/06	
			900	800	VKP 16/08	
			1300	1200	VKP 16/12	
			1500	1400	VKP 16/14	
			1700	1600	VKP 16/16	
			1900	1800	VKP 16/18	
24 sin. 180° Tc=95°C	50		500	400	VKP 24/04	- Hermetic metal case with glass insulator; - Threaded stud ISO M6 or UNF 1/4-28; - International standard case; - Data Sheet pág 25
			900	800	VKP 24/08	
			1300	1200	VKP 24/12	
			1500	1400	VKP 24/14	
			1700	1600	VKP 24/16	
			1900	1800	VKP 24/18	

Parameter

Line Thyristor

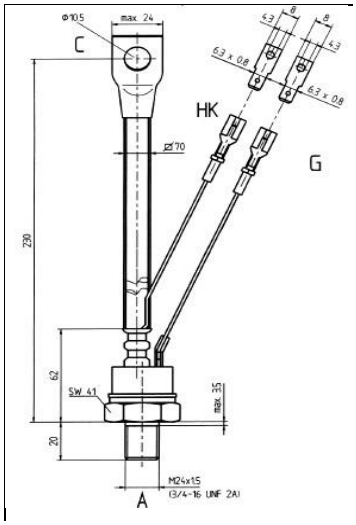
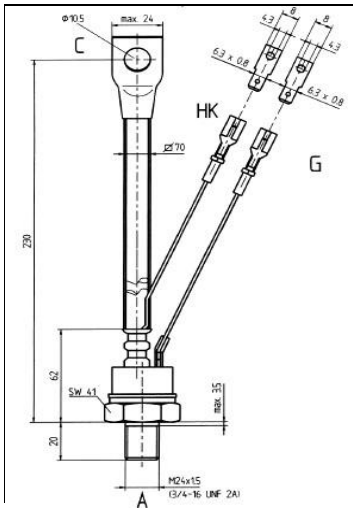
I_{TAV} A	I_{TRMS} A	Dimension	V_{RSM} V	V_{RRM} V_{DRM} V	Reference	Remarks
40 sin. 180° Tc=95°C	50		500	400	VKP 40/04	- Hermetic metal case with glass insulator; - Threaded stud ISO M8; - International standard case; - Data Sheet pág 26
			700	600	VKP 40/06	
			900	800	VKP 40/08	
			1300	1200	VKP 40/12	
			1500	1400	VKP 40/14	
			1700	1600	VKP 40/16	
			1900	1800	VKP 40/18	
50 sin. 180° Tc=78°C	78		700	600	VKP 50/06	- Hermetic metal case with glass insulator; - Threaded stud ISO M8 or UNF 1/4-28; - International standard case; - Data Sheet pág 27
			900	800	VKP 50/08	
			1300	1200	VKP 50/12	
			1500	1400	VKP 50/14	
			1700	1600	VKP 50/16	
			1900	1800	VKP 50/18	
55 sin. 180° Tc=92°C	110		500	400	VKP 55/04	- Hermetic metal case with glass insulator; - Threaded stud ISO M12; - International standard case - Data Sheet pág 28
			700	600	VKP 55/06	
			900	800	VKP 55/08	
			1300	1200	VKP 55/12	
			1500	1400	VKP 55/14	
			1700	1600	VKP 55/16	
			1900	1800	VKP 55/18	

Parameter

I_{TAV} A	I_{TRMS} A	Dimension	V_{RSM} V	V_{RRM} V_{DRM} V	Reference	Remarks
Line Thyristor						
80 sin. 180° Tc=85°C	135		700	600	VKP 80/06	- Hermetic metal case with glass insulator; - Threaded stud ISO M12 or UNF 1/2-20; - International standard case; - Data Sheet pág 29
			900	800	VKP 80/08	
			1300	1200	VKP 80/12	
			1500	1400	VKP 80/14	
			1700	1600	VKP 80/16	
			1900	1800	VKP 80/18	
100 sin. 180° Tc=85°C	175		500	400	VKP 100/04	- Hermetic metal case with glass insulator; - Threaded stud ISO M12 or UNF 1/2-20; - Interchangeable with international standard case; - Data Sheet pág 30
			900	800	VKP 100/08	
			1300	1200	VKP 100/12	
			1500	1400	VKP 100/14	
			1700	1600	VKP 100/16	
			1900	1800	VKP 100/18	
130 sin. 180° Tc=85°C	175		500	400	VKP 130/04	- Hermetic metal case with glass insulator; - Threaded stud ISO M16x1,5 - International standard case; - Data Sheet pág 31
			700	600	VKP 130/06	
			900	800	VKP 130/12	
			1300	1200	VKP 130/14	
			1500	1400	VKP 130/16	
			1700	1600	VKP 130/16	

Parameter

Line Thyristor

I_{TAV} A	I_{TRMS} A	Dimension	V_{RSM} V	V_{RRM} V_{DRM} V	Reference	Remarks
250 sin. 180° Tc=85°C	450		500	400	VKP 250/04	- Hermetic metal case with glass insulator; - Threaded stud ISO M24x1,5; - High i2t and ITSM values for easy fusing - International standard case; - Data Sheet pág 33
			900	800	VKP 250/08	
			1300	1200	VKP 250/12	
			1500	1400	VKP 250/14	
			1700	1600	VKP 250/16	
250 sin. 300° Tc=93°C	550		500	400	VKP 300/04	- Hermetic metal case with glass insulator; - Threaded stud ISO M24x1,5 or UNF 3/4-16; - High i2t and ITSM values for easy fusing - International standard case; - Data Sheet pág 34
			900	800	VKP 300/08	
			1300	1200	VKP 300/12	
			1500	1400	VKP 300/14	
			1700	1600	VKP 300/16	

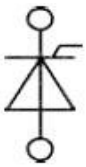
Line Thyristor (VKP 10)

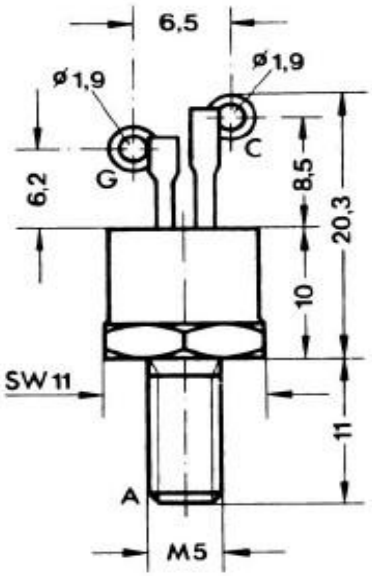
Features

- Hermetic metal case with glass insulator
- Threaded stud ISO M5
- International standard case

Typical Applications

- DC motor control (e.g. for machine tools)
- Controlled rectifiers (e.g. for battery charging)
- AC controllers (e.g. for temperature control)
- Recommended snubber network e.g. for V_{VRMS}≤400V: R=100Ω/5W, C=0.1µF





V_{RSM}	V_{RRM}, V_{DRM}	I_{TRMS}=30A (maximum value for continuous operation)
V	V	I_{TAV}=10A(sin.180; T_C=111°C)
700	600	VKP 10/06D
900	800	VKP 10/08D
1300	1200	VKP 10/12E

Symbol	Conditions	Values	Units
I_{TAV}	sin.180; T_c=100(85)°C	14(19)	A
I_D	K9: Ta=45°C; B2/B6	12/16.5	A
	K5: Ta=45°C; B2/B6	17/24	A
I_{RMS}	K9: Ta=45°C; W1C	13	A
I_{TSM}	T_{vj}=25°C; 10ms	250	A
	T_{vj}=130°C; 10ms	210	A
i^2t	T_{vj}=25°C; 8.35...10ms	310	A^2S
	T_{vj}=130°C; 8.35...10ms	220	A^2S
V_T	T_{vj}=25°C; I_T=30A	max. 1.6	V
$V_{T(TO)}$	T_{vj}=130°C	max. 1	V
r_T	T_{vj}=130°C	max. 18	mΩ
I_{DD}; I_{RD}	T_{vj}=130°C; V_{RD}=V_{RRM}; V_{DD}=V_{DRM}	max. 4	mA
t_{gd}	T_{vj}=25°C; I_G=1A; di_G/dt=1A/µs	1	µs
t_{gr}	V_D=0.67*V_{DRM}	2	µs
$(di/dt)_{cr}$	T_{vj}=125°C	max. 50	A/µs
$(dv/dt)_{cr}$	T_{vj}=125°C; SKD...D/SKT...E	max. 500/1000	V/µs
t_q	T_{vj}=130°C	80	µs
I_H	T_{vj}=25°C; typ./max.	80/150	mA
I_L	T_{vj}=25°C; typ./max.	150/300	mA
V_{GT}	T_{vj}=25°C; d.c.	min.3	V
I_{GT}	T_{vj}=25°C; d.c.	min.100	mA
V_{GD}	T_{vj}=130°C; d.c.	min.0.25	V
I_{GD}	T_{vj}=130°C; d.c.	min.3	mA
$R_{th(j-c)}$	cont.	1.2	K/W
$R_{th(j-c)}$	sin.180	1.3	K/W
$R_{th(j-c)}$	rec.120	1.35	K/W
$R_{th(c-s)}$		1	K/W
T_{vj}		-40...+130	°C
T_{stg}		-40...+150	°C
V_{isol}		-	V~
M_s	to heatsink	2.0	Nm
a		5*9.81	m/s^2
m	approx	7	g
Case		B1	

Line Thyristor (VKP 16)

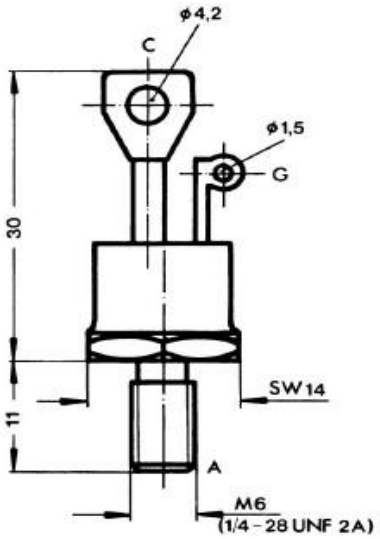
Features

- Hermetic metal case with glass insulator
- Threaded stud ISO M6 or UNF 1/4-28
- International standard case

Typical Applications

- DC motor control (e.g. for machine tools)
- Controlled rectifiers (e.g. for battery charging)
- AC controllers (e.g. for temperature control)
- Recommended snubber network e.g. for V_{VRMS}≤400V: R=100Ω/5W, C=1µF

1) Available with UNF thread 1/4-28 UNF2A, e.g. SKT 16/06D UNF



V_{RSM}	V_{RRM}, V_{DRM}	I_{TRMS}=40A (maximum value for continuous operation)
V	V	I_{TAV}=16A(sin.180; T_C=104°C)
500	400	VKP 16/04D
700	600	VKP 16/06D1)
900	800	VKP 16/08D
1300	1200	VKP 16/12E1)
1500	1400	VKP 16/14E
1700	1600	VKP 16/16E
1900	1800	VKP 16/18E

Symbol	Conditions	Values	Units
I_{TAV}	sin.180; T_c=100(85)°C	18(23)	A
I_D	K5: Ta=45°C; B2/B6	18/24	A
	K3: Ta=45°C; B2/B6	24/33	A
I_{RMS}	K5: Ta=45°C; W1C	20	A
I_{TSM}	T_{vj}=25°C; 10ms	370	A
	T_{vj}=130°C; 10ms	330	A
i^2t	T_{vj}=25°C; 8.35...10ms	680	A^2S
	T_{vj}=130°C; 8.35...10ms	550	A^2S
V_T	T_{vj}=25°C; I_T=75A	max. 2.4	V
$V_{T(TO)}$	T_{vj}=130°C	max. 1	V
r_T	T_{vj}=130°C	max. 20	mΩ
I_{DD}; I_{RD}	T_{vj}=130°C; V_{RD}=V_{RRM}; V_{DD}=V_{DRM}	max. 8	mA
t_{gd}	T_{vj}=25°C; I_G=1A; di_G/dt=1A/µs	1	µs
t_{gr}	V_D=0.67*V_{DRM}	2	µs
$(di/dt)_{cr}$	T_{vj}=130°C	max. 50	A/µs
$(dv/dt)_{cr}$	T_{vj}=130°C; SKD...D/SKT...E	max. 500/1000	V/µs
t_q	T_{vj}=130°C	80	µs
I_H	T_{vj}=25°C; typ./max.	80/150	mA
I_L	T_{vj}=25°C; typ./max.	150/300	mA
V_{GT}	T_{vj}=25°C; d.c.	min.3	V
I_{GT}	T_{vj}=25°C; d.c.	min.100	mA
V_{GD}	T_{vj}=130°C; d.c.	min.0.25	V
I_{GD}	T_{vj}=130°C; d.c.	min.3	mA
$R_{th(j-c)}$	cont.	0.8	K/W
$R_{th(j-c)}$	sin.180	0.9	K/W
$R_{th(j-c)}$	rec.120	0.95	K/W
$R_{th(c-s)}$		0.5	K/W
T_{vj}		-40...+130	°C
T_{stg}		-40...+150	°C
V_{isol}		-	V~
M_s	to heatsink	2.5	Nm
a		5*9.81	m/s^2
m	approx	13	g
Case		B2	

Line Thyristor (VKP 24)

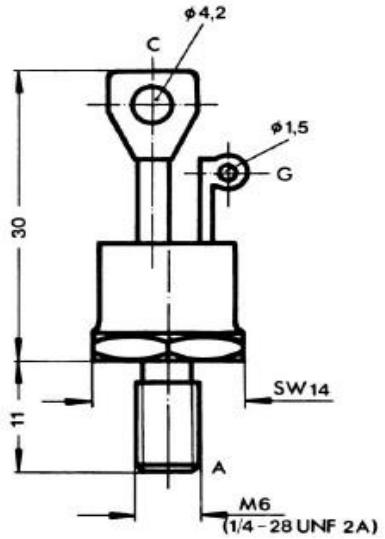
Features

- Hermetic metal case with glass insulator
- Threaded stud ISO M6 or UNF 1/4-28
- International standard case

Typical Applications

- DC motor control (e.g. for machine tools)
- Controlled rectifiers (e.g. for battery charging)
- AC controllers (e.g. for temperature control)
- Recommended snubber network e.g. for V_{VRMS}≤400V: R=100Ω/5W, C=0.1µF

1) Available with UNF thread 1/4-28 UNF2A, e.g. SKT 24/12E UNF



V_{RSM}	V_{RRM}, V_{DRM}	I_{TRMS}=50A (maximum value for continuous operation)
V	V	I_{TAV}=24A(sin.180; T_C=95°C)
500	400	VKP 24/04D
900	800	VKP 24/08D
1300	1200	VKP 24/12E1)
1500	1400	VKP 24/14E
1700	1600	VKP 24/16E1)
1900	1800	VKP 24/18E

Symbol	Conditions	Values	Units
I_{TAV}	sin.180; T_c=100(85)°C	22(29)	A
I_D	K5: Ta=45°C; B2/B6	22/30	A
	K3: Ta=45°C; B2/B6	28/40	A
I_{RMS}	K5: Ta=45°C; W1C	24	A
I_{TSM}	T_{vj}=25°C; 10ms	450	A
	T_{vj}=130°C; 10ms	380	A
i^2t	T_{vj}=25°C; 8.35...10ms	1000	A^2S
	T_{vj}=130°C; 8.35...10ms	720	A^2S
V_T	T_{vj}=25°C; I_T=75A	max. 1.9	V
$V_{T(TO)}$	T_{vj}=130°C	max. 1	V
r_T	T_{vj}=130°C	max. 10	mΩ
I_{DD}; I_{RD}	T_{vj}=130°C; V_{RD}=V_{RRM}; V_{DD}=V_{DRM}	max. 8	mA
t_{gd}	T_{vj}=25°C; I_G=1A; di_G/dt=1A/µs	1	µs
t_{gr}	V_D=0.67*V_{DRM}	2	µs
$(di/dt)_{cr}$	T_{vj}=130°C	max. 50	A/µs
$(dv/dt)_{cr}$	T_{vj}=130°C; SKD...D/SKT...E	max. 500/1000	V/µs
t_q	T_{vj}=130°C	80	µs
I_H	T_{vj}=25°C; typ./max.	80/150	mA
I_L	T_{vj}=25°C; typ./max.	150/300	mA
V_{GT}	T_{vj}=25°C; d.c.	min.3	V
I_{GT}	T_{vj}=25°C; d.c.	min.100	mA
V_{GD}	T_{vj}=130°C; d.c.	min.0.25	V
I_{GD}	T_{vj}=130°C; d.c.	min.3	mA
$R_{th(j-c)}$	cont.	0.8	K/W
$R_{th(j-c)}$	sin.180	0.9	K/W
$R_{th(j-c)}$	rec.120	0.95	K/W
$R_{th(c-s)}$		0.5	K/W
T_{vj}		-40...+130	°C
T_{stg}		-40...+150	°C
V_{isol}		-	V~
M_s	to heatsink	2.5	Nm
a		5*9.81	m/s^2
m	approx	13	g
Case		B2	

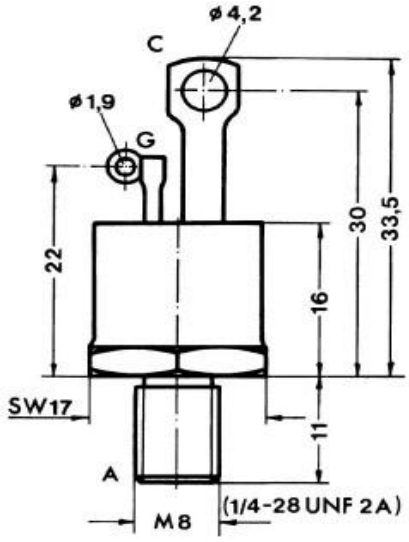
Line Thyristor (VKP 40)

Features

- Hermetic metal case with glass insulator
- Threaded stud ISO M8
- International standard case

Typical Applications

- DC motor control (e.g. for machine tools)
- Controlled rectifiers (e.g. for battery charging)
- AC controllers (e.g. for temperature control)
- Recommended snubber network e.g. for V_{VRMS}≤400V: R=68Ω/11W, C=0.22µF



V_{RSM}	V_{RRM}, V_{DRM}	I_{TRMS}=50A (maximum value for continuous operation)
V	V	I_{TAV}=40A(sin.180; T_C=95°C)
500	400	VKP 40/04D
700	600	VKP 40/06D
900	800	VKP 40/08D
1300	1200	VKP 40/12E
1500	1400	VKP 40/14E
1700	1600	VKP 40/16E
1900	1800	VKP 40/18E

Symbol	Conditions	Values	Units
I_{TAV}	sin.180; T_c=100(85)°C	28(37)	A
I_D	K5: Ta=45°C; B2/B6	24/33	A
	K3: Ta=45°C; B2/B6	34/48	A
I_{RMS}	K3: Ta=45°C; W1C	38	A
I_{TSM}	T_{vj}=25°C; 10ms	700	A
	T_{vj}=130°C; 10ms	600	A
i^2t	T_{vj}=25°C; 8.35...10ms	2500	A^2S
	T_{vj}=130°C; 8.35...10ms	1800	A^2S
V_T	T_{vj}=25°C; I_T=120A	max. 1.95	V
$V_{T(TO)}$	T_{vj}=130°C	max. 1	V
r_T	T_{vj}=130°C	max. 9	mΩ
I_{DD}; I_{RD}	T_{vj}=130°C; V_{RD}=V_{RRM}; V_{DD}=V_{DRM}	max. 8	mA
t_{gd}	T_{vj}=25°C; I_G=1A; di_G/dt=1A/µs	1	µs
t_{gr}	V_D=0.67*V_{DRM}	1.5	µs
$(di/dt)_{cr}$	T_{vj}=130°C	max. 50	A/µs
$(dv/dt)_{cr}$	T_{vj}=130°C; SKD...D/SKT...E	max. 500/1000	V/µs
t_q	T_{vj}=130°C	100	µs
I_H	T_{vj}=25°C; typ./max.	100/200	mA
I_L	T_{vj}=25°C; R_G=33Ω typ./max.	250/400	mA
V_{GT}	T_{vj}=25°C; d.c.	min.3	V
I_{GT}	T_{vj}=25°C; d.c.	min.150	mA
V_{GD}	T_{vj}=130°C; d.c.	max.0.25	V
I_{GD}	T_{vj}=130°C; d.c.	max.5	mA
$R_{th(j-c)}$	cont.	0.6	K/W
$R_{th(j-c)}$	sin.180	0.66	K/W
$R_{th(j-c)}$	rec.120	0.7	K/W
$R_{th(c-s)}$		0.2	K/W
T_{vj}		-40...+130	°C
T_{stg}		-55...+150	°C
V_{isol}		-	V~
M_s	to heatsink	4(UNF:2.5)	Nm
a		5*9.81	m/s^2
m	approx	22	g
Case		B3	

Line Thyristor (VKP 50)

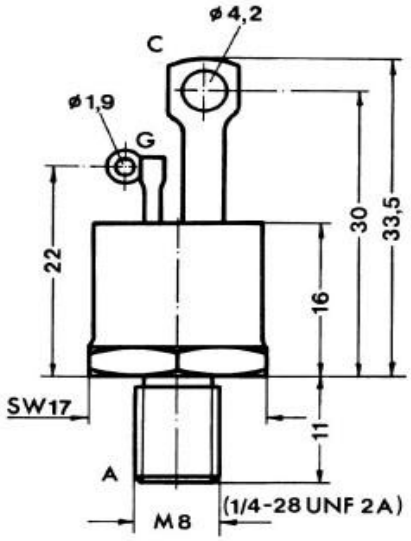
Features

- Hermetic metal case with glass insulator
- Threaded stud ISO M8 or UNF 1/4-28
- International standard case

Typical Applications

- DC motor control (e.g. for machine tools)
- Controlled rectifiers (e.g. for battery charging)
- AC controllers (e.g. for temperature control)
- Recommended snubber network e.g. for V_{VRMS}≤400V: R=68Ω/11W, C=0.22µF

1) Available with UNF thread 1/4-28 UNF2A, e.g.SKT 50/06D UNF



V_{RSM}	V_{RRM}, V_{DRM}	I_{TRMS}=78A (maximum value for continuous operation)
V	V	I_{TAV}=50A(sin.180; T_C=78°C)
700	600	VKP 50/06D1)
900	800	VKP 50/08D
1300	1200	VKP 50/12E1)
1500	1400	VKP 50/14E1)
1700	1600	VKP 50/16E1)
1900	1800	VKP 50/18E

Symbol	Conditions	Values	Units
I_{TAV}	sin.180; T_c=100(85)°C	33(45)	A
I_D	K5: Ta=45°C; B2/B6	25/36	A
	K3: Ta=45°C; B2/B6	36/50	A
I_{RMS}	K3: Ta=45°C; W1C	40	A
I_{TSM}	T_{vj}=25°C; 10ms	1050	A
	T_{vj}=130°C; 10ms	900	A
i^2t	T_{vj}=25°C; 8.35...10ms	5000	A^2S
	T_{vj}=130°C; 8.35...10ms	4000	A^2S
V_T	T_{vj}=25°C; I_T=120A	max. 1.8	V
$V_{T(TO)}$	T_{vj}=130°C	max. 1.1	V
r_T	T_{vj}=130°C	max. 5	mΩ
I_{DD}; I_{RD}	T_{vj}=130°C; V_{RD}=V_{RRM}; V_{DD}=V_{DRM}	max. 8	mA
t_{gd}	T_{vj}=25°C; I_G=1A; di_G/dt=1A/µs	1	µs
t_{gr}	V_D=0.67*V_{DRM}	1.5	µs
$(di/dt)_{cr}$	T_{vj}=130°C	max. 50	A/µs
$(dv/dt)_{cr}$	T_{vj}=130°C; SKD...D/SKT...E	max. 500/1000	V/µs
t_q	T_{vj}=130°C	100	µs
I_H	T_{vj}=25°C; typ./max.	100/200	mA
I_L	T_{vj}=25°C; R_G=33Ω typ./max.	250/400	mA
V_{GT}	T_{vj}=25°C; d.c.	min.3	V
I_{GT}	T_{vj}=25°C; d.c.	min.150	mA
V_{GD}	T_{vj}=130°C; d.c.	max.0.25	V
I_{GD}	T_{vj}=130°C; d.c.	max.5	mA
$R_{th(j-c)}$	cont.	0.57	K/W
$R_{th(j-c)}$	sin.180	0.6	K/W
$R_{th(j-c)}$	rec.120	0.65	K/W
$R_{th(c-s)}$		0.2	K/W
T_{vj}		-40...+130	°C
T_{stg}		-55...+150	°C
V_{isol}		-	V~
M_s	to heatsink	4(UNF:2.5)	Nm
a		5*9.81	m/s^2
m	approx	22	g
Case		B3	

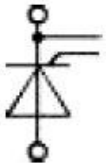
Line Thyristor (VKP 55)

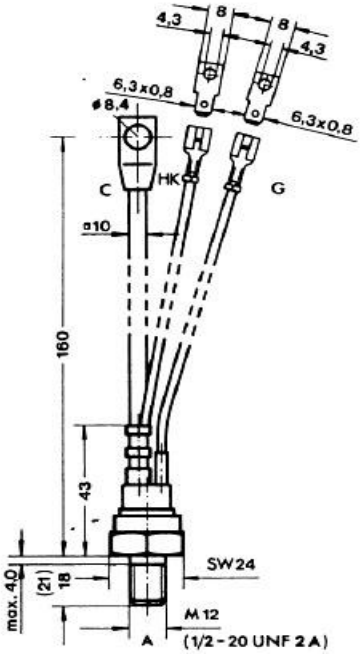
Features

- Hermetic metal case with glass insulator
- Threaded stud ISO M12
- International standard case

Typical Applications

- DC motor control (e.g. for machine tools)
- Controlled rectifiers (e.g. for battery charging)
- AC controllers (e.g. for temperature control)
- Recommended snubber network e.g. for V_{VRMS}≤400V: R=47Ω/10W, C=0.22µF





V_{RSM}	V_{RRM}, V_{DRM}	I_{TRMS}=110A (maximum value for continuous operation)
V	V	I_{TAV}=55A(sin.180; T_C=92°C)
500	400	VKP 55/04D
700	600	VKP 55/06D
900	800	VKP 55/08D
1300	1200	VKP 55/12E
1500	1400	VKP 55/14E
1700	1600	VKP 55/16E
1900	1800	VKP 55/18E

Symbol	Conditions	Values	Units
I_{TAV}	sin.180; T_c=100(85)°C	47(63)	A
	K3: Ta=45°C; B2/B6	42/60	A
I_D	K1: Ta=45°C; B2/B6	76/110	A
I_{RMS}	K3: Ta=45°C; W1C	46	A
	T_{vj}=25°C; 10ms	1300	A
I_{TSM}	T_{vj}=130°C; 10ms	1100	A
	T_{vj}=25°C; 8.35...10ms	8500	A^2S
i^2t	T_{vj}=130°C; 8.35...10ms	6000	A^2S
V_T	T_{vj}=25°C; I_T=200A	max. 1.8	V
$V_{T(TO)}$	T_{vj}=130°C	max. 0.9	V
r_T	T_{vj}=130°C	max. 4	mΩ
I_{DD}; I_{RD}	T_{vj}=130°C; V_{RD}=V_{RRM}; V_{DD}=V_{DRM}	max. 25	mA
t_{gd}	T_{vj}=25°C; I_G=1A; di_G/dt=1A/µs	1	µs
t_{gr}	V_D=0.67*V_{DRM}	2	µs
$(di/dt)_{cr}$	T_{vj}=130°C	max. 50	A/µs
$(dv/dt)_{cr}$	T_{vj}=130°C; SKD...D/SKT...E	max. 500/1000	V/µs
t_q	T_{vj}=130°C	100	µs
I_H	T_{vj}=25°C; typ./max.	150/250	mA
I_L	T_{vj}=25°C; typ./max.	300/600	mA
V_{GT}	T_{vj}=25°C; d.c.	min.3	V
I_{GT}	T_{vj}=25°C; d.c.	min.150	mA
V_{GD}	T_{vj}=130°C; d.c.	max.0.25	V
I_{GD}	T_{vj}=130°C; d.c.	max.10	mA
$R_{th(j-c)}$	cont.	0.4	K/W
$R_{th(j-c)}$	sin.180	0.47	K/W
$R_{th(j-c)}$	rec.120	0.53	K/W
$R_{th(c-s)}$		0.08	K/W
T_{vj}		-40...+130	°C
T_{stg}		-55...+150	°C
V_{isol}		-	V~
M_s	to heatsink	10	Nm
a		5*9.81	m/s^2
m	approx	100	g
Case		B5	

Line Thyristor (VKP 80)

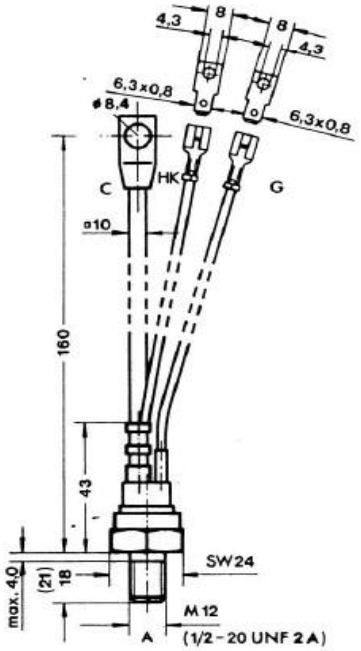
Features

- Hermetic metal case with glass insulator
- Threaded stud ISO M12 or UNF 1/2-20
- International standard case

Typical Applications

- DC motor control (e.g. for machine tools)
- Controlled rectifiers (e.g. for battery charging)
- AC controllers (e.g. for temperature control)
- Recommended snubber network e.g. for V_{VRMS}≤400V: R=47Ω/10W, C=0.22µF

1) Available with UNF thread 1/2-20 UNF2A, e.g.SKT 80/06D UNF



V_{RSM}	V_{RRM}, V_{DRM}	I_{TRMS}=135A (maximum value for continuous operation)
V	V	I_{TAV}=80A(sin.180; T_C=85°C)
700	600	VKP 80/06D1)
900	800	VKP 80/08D
1300	1200	VKP 80/12E1)
1500	1400	VKP 80/14E
1700	1600	VKP 80/16E1)
1900	1800	VKP 80/18E

Symbol	Conditions	Values	Units
I_{TAV}	sin.180; T_c=100(85)°C	60(80)	A
I_D	K1.1: Ta=45°C; B2/B6	76/105	A
	K0.55: Ta=45°C; B2/B6	110/150	A
I_{RMS}	K1.1: Ta=45°C; W1C	84	A
I_{TSM}	T_{vj}=25°C; 10ms	1700	A
	T_{vj}=130°C; 10ms	1500	A
i^2t	T_{vj}=25°C; 8.35...10ms	14500	A^2S
	T_{vj}=130°C; 8.35...10ms	11000	A^2S
V_T	T_{vj}=25°C; I_T=300A	max. 2.25	V
$V_{T(TO)}$	T_{vj}=130°C	max. 1.2	V
r_T	T_{vj}=130°C	max. 4	mΩ
I_{DD}; I_{RD}	T_{vj}=130°C; V_{RD}=V_{RRM}; V_{DD}=V_{DRM}	max. 30	mA
t_{gd}	T_{vj}=25°C; I_G=1A; di_G/dt=1A/µs	1	µs
t_{gr}	V_D=0.67*V_{DRM}	2	µs
$(di/dt)_{cr}$	T_{vj}=130°C	max. 50	A/µs
$(dv/dt)_{cr}$	T_{vj}=130°C; SKD...D/SKT...E	max. 500/1000	V/µs
t_q	T_{vj}=130°C	100	µs
I_H	T_{vj}=25°C; typ./max.	150/250	mA
I_L	T_{vj}=25°C; typ./max.	300/600	mA
V_{GT}	T_{vj}=25°C; d.c.	min.3	V
I_{GT}	T_{vj}=25°C; d.c.	min.150	mA
V_{GD}	T_{vj}=130°C; d.c.	max.0.25	V
I_{GD}	T_{vj}=130°C; d.c.	max.10	mA
$R_{th(j-c)}$	cont.	0.25	K/W
$R_{th(j-c)}$	sin.180	0.28	K/W
$R_{th(j-c)}$	rec.120	0.31	K/W
$R_{th(c-s)}$		0.08	K/W
T_{vj}		-40...+130	°C
T_{stg}		-55...+150	°C
V_{isol}		-	V~
M_s	to heatsink	10	Nm
a		5*9.81	m/s^2
m	approx	100	g
Case		B5	

Line Thyristor (VKP 100)

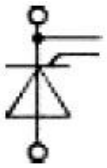
Features

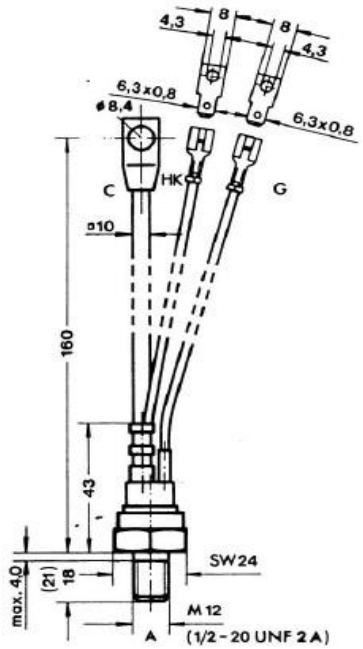
- Hermetic metal case with glass insulator
- Threaded stud ISO M12 or UNF 1/2-20
- Interchangeable with international standard case

Typical Applications

- DC motor control (e.g. for machine tools)
- Controlled rectifiers (e.g. for battery charging)
- AC controllers (e.g. for temperature control)
- Recommended snubber network e.g. for V_{VRMS}≤400V: R=47Ω/10W, C=0.22µF

1) Available with UNF thread 1/2-20 UNF2A, e.g.SKT 100/08D UNF

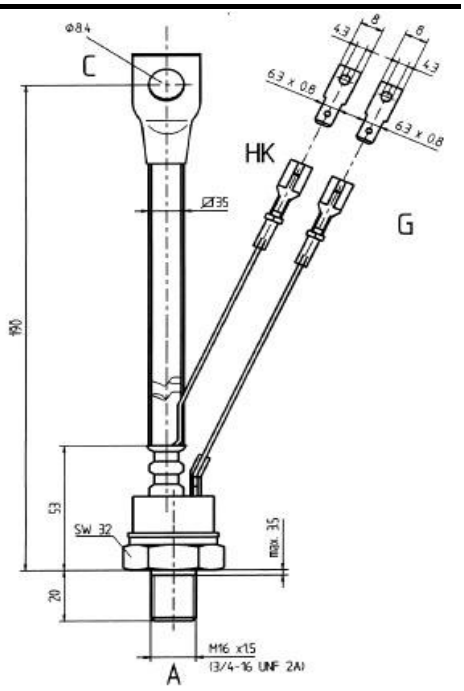




V_{RSM}	V_{RRM}, V_{DRM}	I_{TRMS}=175A (maximum value for continuous operation)
V	V	I_{TAV}=100A(sin.180; T_C=85°C)
500	400	VKP 100/04D
900	800	VKP 100/08D1)
1300	1200	VKP 100/12E1)
1500	1400	VKP 100/14E1)
1700	1600	VKP 100/16E1)
1900	1800	VKP 100/18E

Symbol	Conditions	Values	Units
I_{TAV}	sin.180; T_c=100(85)°C	74(100)	A
I_D	K1.1: Ta=45°C; B2/B6	90/125	A
	K0.55: Ta=45°C; B2/B6	130/180	A
I_{RMS}	K1.1: Ta=45°C; W1C	100	A
I_{TSM}	T_{vj}=25°C; 10ms	2000	A
	T_{vj}=130°C; 10ms	1750	A
i^2t	T_{vj}=25°C; 8.35...10ms	20000	A^2S
	T_{vj}=130°C; 8.35...10ms	15000	A^2S
V_T	T_{vj}=25°C; I_T=300A	max. 1.75	V
$V_{T(TO)}$	T_{vj}=130°C	max. 1	V
r_T	T_{vj}=130°C	max. 2.4	mΩ
I_{DD}; I_{RD}	T_{vj}=130°C; V_{RD}=V_{RRM}; V_{DD}=V_{DRM}	max. 30	mA
t_{gd}	T_{vj}=25°C; I_G=1A; di_G/dt=1A/µs	1	µs
t_{gr}	V_D=0.67*V_{DRM}	2	µs
$(di/dt)_{cr}$	T_{vj}=130°C	max. 50	A/µs
$(dv/dt)_{cr}$	T_{vj}=130°C; SKD...D/SKT...E	max. 500/1000	V/µs
t_q	T_{vj}=130°C	100	µs
I_H	T_{vj}=25°C; typ./max.	150/250	mA
I_L	T_{vj}=25°C; typ./max.	300/600	mA
V_{GT}	T_{vj}=25°C; d.c.	min.3	V
I_{GT}	T_{vj}=25°C; d.c.	min.150	mA
V_{GD}	T_{vj}=130°C; d.c.	max.0.25	V
I_{GD}	T_{vj}=130°C; d.c.	max.10	mA
$R_{th(j-c)}$	cont.	0.25	K/W
$R_{th(j-c)}$	sin.180	0.28	K/W
$R_{th(j-c)}$	rec.120	0.31	K/W
$R_{th(c-s)}$		0.08	K/W
T_{vj}		-40...+130	°C
T_{stg}		-55...+150	°C
V_{isol}		-	V~
M_s	to heatsink	16	Nm
a		5*9.81	m/s^2
m	approx	100	g
Case		B5	

Line Thyristor (VKP 130)

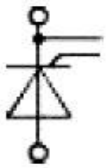


Features

- Hermetic metal case with glass insulator
- Threaded stud ISO M16×1.5
- International standard case

Typical Applications

- DC motor control (e.g. for machine tools)
- Controlled rectifiers (e.g. for battery charging)
- AC controllers (e.g. for temperature control)
- Recommended snubber network e.g. for V_{VRMS}≤400V: R=33Ω/13W, C=0.47µF



V_{RSM}	V_{RRM}, V_{DRM}	I_{TRMS}=175A (maximum value for continuous operation)
V	V	I_{TAV}=130A(sin.180; T_C=85°C)
500	400	VKP 130/04D
700	600	VKP 130/06D
900	800	VKP 130/08D
1300	1200	VKP 130/12E
1500	1400	VKP 130/14E
1700	1600	VKP 130/16E

Symbol	Conditions	Values	Units
I_{TAV}	sin.180; T_c=100(85)°C	97(130)	A
I_D	K1.1: Ta=45°C; B2/B6	90/125	A
	K0.55: Ta=45°C; B2/B6	140/200	A
I_{RMS}	K0.55: Ta=45°C; W1C	155	A
I_{TSM}	T_{vj}=25°C; 10ms	3500	A
	T_{vj}=130°C; 10ms	3000	A
i^2t	T_{vj}=25°C; 8.35...10ms	61000	A^2S
	T_{vj}=130°C; 8.35...10ms	45000	A^2S
V_T	T_{vj}=25°C; I_T=500A	max. 2.25	V
$V_{T(TO)}$	T_{vj}=130°C	max. 1.2	V
r_T	T_{vj}=130°C	max. 2.2	mΩ
I_{DD}; I_{RD}	T_{vj}=130°C; V_{RD}=V_{RRM}; V_{DD}=V_{DRM}	max. 50	mA
t_{gd}	T_{vj}=25°C; I_G=1A; di_G/dt=1A/µs	1	µs
t_{gr}	V_D=0.67*V_{DRM}	2	µs
$(di/dt)_{cr}$	T_{vj}=130°C	max. 100	A/µs
$(dv/dt)_{cr}$	T_{vj}=130°C; SKT...D/SKT...E	max. 500/1000	V/µs
t_q	T_{vj}=130°C	120	µs
I_H	T_{vj}=25°C; typ./max.	150/250	mA
I_L	T_{vj}=25°C; R_G=33Ω; typ./max.	300/600	mA
V_{GT}	T_{vj}=25°C; d.c.	min.3	V
I_{GT}	T_{vj}=25°C; d.c.	min.200	mA
V_{GD}	T_{vj}=130°C; d.c.	max.0.25	V
I_{GD}	T_{vj}=130°C; d.c.	max.10	mA
$R_{th(j-c)}$	cont.	0.16	K/W
$R_{th(j-c)}$	sin.180	0.18	K/W
$R_{th(j-c)}$	rec.120	0.2	K/W
$R_{th(c-s)}$		0.03	K/W
T_{vj}		-40...+130	°C
T_{stg}		-55...+150	°C
V_{isol}		-	V~
M_s	to heatsink	30	Nm
a		5*9.81	m/s^2
m	approx	250	g
Case		B6	

Line Thyristor (VKP 160)

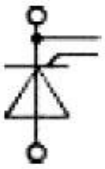
Features

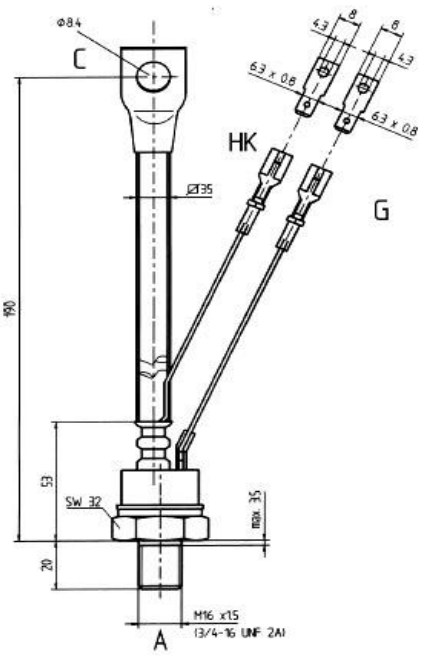
- Hermetic metal case with glass insulator
- Threaded stud ISO M16×1.5 or UNF 3/4-16
- International standard case

Typical Applications

- DC motor control (e.g. for machine tools)
- Controlled rectifiers (e.g. for battery charging)
- AC controllers (e.g. for temperature control)
- Recommended snubber network e.g. for V_{VRMS}≤400V: R=33Ω/13W, C=0.47µF

1) Available with UNF thread 3/4-16 UNF2A; e.g. SKT 160/12E UNF

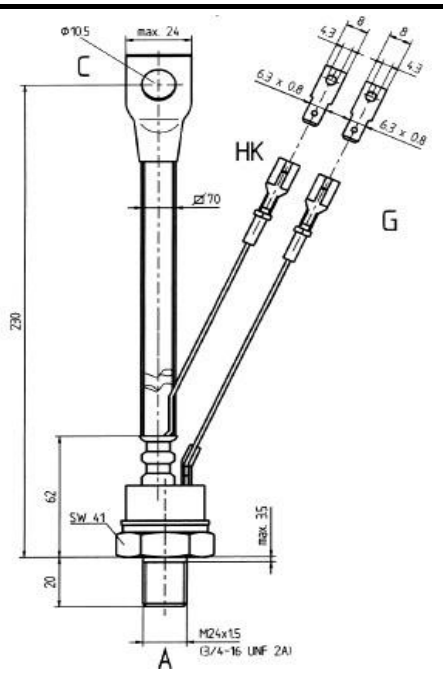




V_{RSM}	V_{RRM}, V_{DRM}	I_{TRMS}=280A (maximum value for continuous operation)
V	V	I_{TAV}=160A(sin.180; T_C=84°C)
500	400	VKP 160/04D
700	600	VKP 160/06D
900	800	VKP 160/08D
1300	1200	VKP 160/12E1)
1500	1400	VKP 160/14E
1700	1600	VKP 160/16E1)

Symbol	Conditions	Values	Units
I_{TAV}	sin.180; T_c=100(85)°C	116(158)	A
I_D	K1.1: Ta=45°C; B2/B6	110/150	A
	K0.55: Ta=45°C; B2/B6	170/240	A
I_{RMS}	K0.55: Ta=45°C; W1C	190	A
I_{TSM}	T_{vj}=25°C; 10ms	4300	A
	T_{vj}=130°C; 10ms	3750	A
i^2t	T_{vj}=25°C; 8.35...10ms	92500	A^2S
	T_{vj}=130°C; 8.35...10ms	70000	A^2S
V_T	T_{vj}=25°C; I_T=500A	max. 1.75	V
$V_{T(TO)}$	T_{vj}=130°C	max. 1	V
r_T	T_{vj}=130°C	max. 1.5	mΩ
I_{DD}; I_{RD}	T_{vj}=130°C; V_{RD}=V_{RRM}; V_{DD}=V_{DRM}	max. 50	mA
t_{gd}	T_{vj}=25°C; I_G=1A; di_G/dt=1A/µs	1	µs
t_{gr}	V_D=0.67*V_{DRM}	2	µs
$(di/dt)_{cr}$	T_{vj}=130°C	max. 100	A/µs
$(dv/dt)_{cr}$	T_{vj}=130°C; SKT...D/SKT...E	max. 500/1000	V/µs
t_q	T_{vj}=130°C	120	µs
I_H	T_{vj}=25°C; typ./max.	150/250	mA
I_L	T_{vj}=25°C; R_G=33Ω; typ./max.	300/600	mA
V_{GT}	T_{vj}=25°C; d.c.	min.3	V
I_{GT}	T_{vj}=25°C; d.c.	min.200	mA
V_{GD}	T_{vj}=130°C; d.c.	max.0.25	V
I_{GD}	T_{vj}=130°C; d.c.	max.10	mA
$R_{th(j-c)}$	cont.	0.16	K/W
$R_{th(j-c)}$	sin.180	0.18	K/W
$R_{th(j-c)}$	rec.120	0.2	K/W
$R_{th(c-s)}$		0.03	K/W
T_{vj}		-40...+130	°C
T_{stg}		-55...+150	°C
V_{isol}		-	V~
M_s	to heatsink	30	Nm
a		5*9.81	m/s^2
m	approx	250	g
Case		B6	

Line Thyristor (VKP 250)



Features

- Hermetic metal case with glass insulator
- Threaded stud ISO M24×1.5
- High i^2t and I_{TSM} values for easy fusing
- International standard case

Typical Applications

- DC motor control (e.g. for machine tools)
- Controlled rectifiers (e.g. for battery charging)
- AC controllers (e.g. for temperature control)
- Recommended snubber network e.g. for V_{VRMS}≤400V: R=33Ω/32W, C=0.47µF

V_{RSM}	V_{RRM}, V_{DRM}	I_{TRMS}=450A (maximum value for continuous operation)
V	V	I_{TAV}=250A(sin.180; T_C=85°C)
500	400	VKP 250/04D
900	800	VKP 250/08D
1300	1200	VKP 250/12E
1500	1400	VKP 250/14E
1700	1600	VKP 250/16E

Symbol	Conditions	Values	Units
I_{TAV}	sin.180; T_c=100(85)°C	185(250)	A
I_D	K0.55: Ta=45°C; B2/B6	240/330	A
	K0.55F: Ta=35°C; B2/B5	490/675	A
I_{RMS}	K0.55: Ta=45°C; W1C	265	A
I_{TSM}	T_{vj}=25°C; 10ms	7000	A
	T_{vj}=130°C; 10ms	6000	A
i^2t	T_{vj}=25°C; 8.35...10ms	245000	A^2S
	T_{vj}=130°C; 8.35...10ms	180000	A^2S
V_T	T_{vj}=25°C; I_T=800A	max. 1.65	V
$V_{T(TO)}$	T_{vj}=130°C	max. 1	V
r_T	T_{vj}=130°C	max. 0.7	mΩ
I_{DD}; I_{RD}	T_{vj}=130°C; V_{RD}=V_{RRM}; V_{DD}=V_{DRM}	max. 50	mA
t_{gd}	T_{vj}=25°C; I_G=1A; di_G/dt=1A/µs	1	µs
t_{gr}	V_D=0.67*V_{DRM}	2	µs
$(di/dt)_{cr}$	T_{vj}=130°C	max. 100	A/µs
$(dv/dt)_{cr}$	T_{vj}=130°C; SKT...D/SKT...E	max. 500/1000	V/µs
t_q	T_{vj}=130°C	50...150	µs
I_H	T_{vj}=25°C; typ./max.	150/250	mA
I_L	T_{vj}=25°C; R_G=33Ω; typ./max.	300/600	mA
V_{GT}	T_{vj}=25°C; d.c.	min.3	V
I_{GT}	T_{vj}=25°C; d.c.	min.200	mA
V_{GD}	T_{vj}=130°C; d.c.	max.0.25	V
I_{GD}	T_{vj}=130°C; d.c.	max.10	mA
$R_{th(j-c)}$	cont.	0.11	K/W
$R_{th(j-c)}$	sin.180	0.123	K/W
$R_{th(j-c)}$	rec.120	0.137	K/W
$R_{th(c-s)}$		0.015	K/W
T_{vj}		-40...+130	°C
T_{stg}		-55...+150	°C
V_{isol}		-	V~
M_s	to heatsink	60	Nm
a		5*9.81	m/s^2
m	approx	490	g
Case		B7	

Line Thyristor (VKP 300)

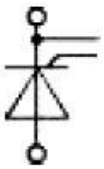
Features

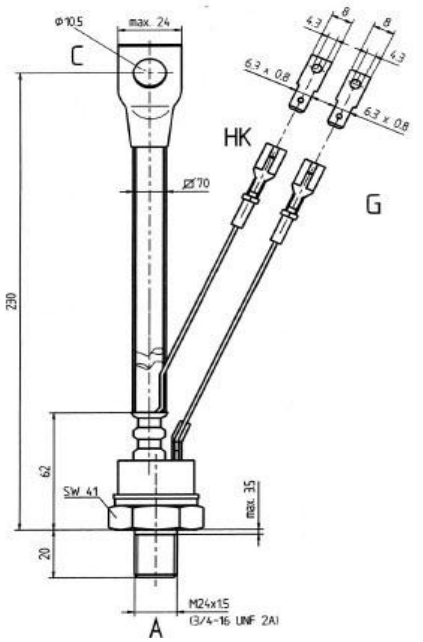
- Hermetic metal case with glass insulator
- Threaded stud ISO M24×1.5 or UNF 3/4-16
- High i^2t and I_{TSM} values for easy fusing
- International standard case

Typical Applications

- DC motor control (e.g. for machine tools)
- Controlled rectifiers (e.g. for battery charging)
- AC controllers (e.g. for temperature control)
- Recommended snubber network e.g. for V_{VRMS}≤400V: R=33Ω/32W, C=0.47µF

1) Available with UNF thread 3/4-16 UNF2A, e.g. SKT 300/08D UNF





V_{RSM}	V_{RRM}, V_{DRM}	I_{TRMS}=550A (maximum value for continuous operation)
V	V	I_{TAV}=250A(sin.300; T_C=93°C)
500	400	VKP 300/04D
900	800	VKP 300/08D1)
1300	1200	VKP 300/12E1)
1500	1400	VKP 300/14E1)
1700	1600	VKP 300/16E1)

Symbol	Conditions	Values	Units
I_{TAV}	sin.180; T_c=100(85)°C	257(351)	A
I_D	K0.55: Ta=45°C; B2/B6	250/360	A
	K0.55F: Ta=35°C; B2/B5	570/800	A
I_{RMS}	K0.55: Ta=45°C; W1C	280	A
I_{TSM}	T_{vj}=25°C; 10ms	11000	A
	T_{vj}=130°C; 10ms	10000	A
i^2t	T_{vj}=25°C; 8.35...10ms	600000	A^2S
	T_{vj}=130°C; 8.35...10ms	500000	A^2S
V_T	T_{vj}=25°C; I_T=800A	max. 1.45	V
$V_{T(TO)}$	T_{vj}=130°C	max. 0.9	V
r_T	T_{vj}=130°C	max. 0.5	mΩ
I_{DD}; I_{RD}	T_{vj}=130°C; V_{RD}=V_{RRM}; V_{DD}=V_{DRM}	max. 50	mA
t_{gd}	T_{vj}=25°C; I_G=1A; di_G/dt=1A/µs	1	µs
t_{gr}	V_D=0.67*V_{DRM}	2	µs
$(di/dt)_{cr}$	T_{vj}=130°C	max. 100	A/µs
$(dv/dt)_{cr}$	T_{vj}=130°C; SKT...D/SKT...E	max. 500/1000	V/µs
t_q	T_{vj}=130°C	50...150	µs
I_H	T_{vj}=25°C; typ./max.	150/250	mA
I_L	T_{vj}=25°C; R_G=33Ω; typ./max.	300/600	mA
V_{GT}	T_{vj}=25°C; d.c.	min.3	V
I_{GT}	T_{vj}=25°C; d.c.	min.200	mA
V_{GD}	T_{vj}=130°C; d.c.	max.0.25	V
I_{GD}	T_{vj}=130°C; d.c.	max.10	mA
$R_{th(j-c)}$	cont.	0.09	K/W
$R_{th(j-c)}$	sin.180	0.096	K/W
$R_{th(j-c)}$	rec.120	0.101	K/W
$R_{th(c-s)}$		0.015	K/W
T_{vj}		-40...+130	°C
T_{stg}		-55...+150	°C
V_{isol}		-	V~
M_s	to heatsink	60(UNF:30)	Nm
a		5*9.81	m/s^2
m	approx	490	g
Case		B7	

AREAS DE ATUAÇÃO - PERFORMANCE AREAS

- **PROTEÇÃO E MEDIÇÃO**
  PROTECTION AND MEASUREMENT
- **ACIONAMENTO PARA MOTORES**
  MOTORS DRIVES
- **EXCITATRIZES PARA MOTORES E GERADORES SÍCRONOS**
  EXCITATION FOR SYNCHRONOUS MOTORS AND GENERATORS
- **CONTROLE DE GARGAS RESISTIVAS E INDUTIVAS**
  CONTROL OF RESISTIVE AND INDUCTIVE LOADS
- **RETIFICADORES DE POTÊNCIA**
  POWER RECTIFIERS
- **CONVERSORES CA/CC**
  AC/DC CONVERTERS

OUTROS EQUIPAMENTOS - OTHER EQUIPMENTS

Strata NX - Medium Voltage Soft Starters
Poweramp - Control and Excitation for Synchronous Motors
Powergage - Control and Excitation for Generators
Morack - Medium Voltage Motor Control Centers
Daxxo - Relay for Inteligent MCCsSmartCore Motor Protection Relay
Vanta 200 - High End Motor Protection Relay
VERT 300 - Management and Protection for Generators
Compactvar M - Digital and Analog Exciters for Synchronous Motors
Compactvar G - Digital and Analog for Generators
Traccon - Low Cost Soft Starters
Solidvar - Solid State Contactors
Mykron - Power Controllers
Rectivar 45000 - Walk In Type Very High Current Rectifiers
Rectivar 15000 - Modular High Current Rectifiers
Rectivar 2000 - Compact Rectifiers
Syncstart - Starter and Exciter for Low Voltage Synchronous Motors
Evomag - Magnet Control System
Statix 600 - Choppers for DC Motors
Hyamp - Power Control Systems
AllBatt - Battery System with Chager
Gspeed - Turbines and Generators Managers
Mag V - Magnet Controllers
Cbox V- Internal Synchronism Controllers for Synchronous Motors
Crw V - Crowbar for Excitation Systems
Invaxx V - Sensorless Vector Frequency Inverter
Invaxx VA - Advanced Vector Frequency Inverter Sensorless
Invaxx E - Frequency Inverter Control Scale
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