

	Specification	Symbol	Condition / Comment		240-300-SCR	Unit
ABSOLUTE MAXIMUM RATINGS	Maximum Operating Voltage	V _{O(max)}	I _{off} < 150 µADC, T _{case} = 70°C		24000	VDC
	Minimum Operating Voltage	V _{O(min)}	t _{r(on)} and t _{r(off)} may increase slightly if operated below 5% of V _{O(max)}		2000	VDC
	Typical Breakdown Voltage	V _{br}	NOTE: V _{br} is a test parameter for quality control purposes only. Not applicable in normal operation!	I _{off} > 0.5 mA	26400	VDC
	Maximum Isolation Voltage	V _I	Between HV switch and control / GND, continuously		40000	VDC
	Max. Housing Insulation Voltage	V _{INS}	Between switch and housing surface, 3 minutes		50000	VDC
	Maximum Turn-On Peak Current	I _{P(max)}	T _{case} = 25°C, half sine single pulse, Please note P _{d(max)} limitations!	t _p < 100 µs, duty cycle <1% t _p < 500 µs, duty cycle <1% t _p < 1 ms, duty cycle <1% t _p < 10 ms, duty cycle <1% t _p < 100 ms, duty cycle <1%	3000 2400 1950 720 345	ADC
	Max. Non-repetitive Peak Current	I _{P(nr)}	T _{case} = 25°C		Please consult factory	ADC
	Maximum Continuous Load Current	I _{L(max)}	T _{case} = 25°C	Increased I _{L(max)} on request	1.7	ADC
	Max. Continuous Power Dissipation	P _{d(max)}	T _{case} = 25°C	Standard devices & FH, forced air 4 m/s	40	Watt
	Linear Derating		Above 25°C	Standard devices & FH, forced air 4 m/s	0.166	W/K
ELECTRICAL CHARACTERISTICS	Operating Temperature Range	T _O	Standard devices & options CF, GCF, ILC. (Option DLC)		-40...70 (60)	°C
	Storage Temperature Range	T _S	Switches with option ILC may require frost protection!		-40...90	°C
	Max. Permissible Magnetic Field	B	Homogeneous steady-field, surrounding the whole switch		25	mT
	Max. Auxiliary Voltage	V _{aux}	Built-in overvoltage limiter (replaceable)		5.25	VDC
	Critical Rate-of-Rise to Off-State Voltage	dv/dt	@ V _{O(max)} , exponential waveform		36	kV/µs
	Typical Off-State Current	I _{off}	0.8xV _O , T _{case} =25...70°C, reduced I _{off} on request		< 150	µADC
	Typical Holding Current	I _H	T _{case} = 25°C T _{case} = 70°C		50 35	mADC
	Typical On-State Voltage	V _{sat}	T _{case} = 25°C t _p < 10µs, duty cycle < 1%	0.001 x I _{P(max)} 0.01 x I _{P(max)} 0.1 x I _{P(max)} 1.0 x I _{P(max)}	20 24 43 110	VDC
	Typical Propagation Delay Time	t _{d(on)}	Resistive load, 0.1 x I _{P(max)} , 0.8 x V _{O(max)} , 50-50%		200	ns
	Typical Turn-On Rise Time	t _{r(on)}	Resistive load, 10-80%	0.1 x V _{O(max)} , I _L = 0.1 x I _{p(max)} 0.8 x V _{O(max)} , I _L = 0.1 x I _{p(max)} 0.8 x V _{O(max)} , I _L = 0.5 x I _{p(max)} 0.8 x V _{O(max)} , I _L = 1.0 x I _{p(max)}	240 250 380 400	ns
Typical Turn-Off Fall Time	t _q , t _{off}	inductive load with free-wheeling diode	I _L = 0.1 x I _{p(max)} I _L = 1.0 x I _{p(max)}	40 100	µs	
Maximum On-Time	t _{on(max)}	Please note P _{d(max)} limitations!		Infinitely if I _L > I _H		
Typical Output Pulse Jitter	t _j	Impedance matched input, V _{aux} / V _{ctrl} = 5.00 VDC		1	ns	
Max. Switching Frequency	f _(max)	Please note P _{d(max)} limitations!		1	kHz	
Maximum Burst Frequency	f _{b(max)}	HFB option required Please consult factory		1 10	kHz	
Coupling Capacitance	C _C	Switch against control side		150	pF	
Control Voltage Range	V _{ctrl}	The V _{ctrl} has no impact on the output pulse shape.		3 ... 10	VDC	
Auxiliary Supply Voltage Range	V _{aux}	The +5 V supply is not required in the HFS mode.		4.75 ... 5.25	VDC	
Typical Auxiliary Supply Current	I _{aux}	V _{aux} = 5.00 VDC, T _{case} = 25°C. Active current limitation above 1A.	0.01 x f _(max) @ specified f _(max)	200 600	mADC	
Fault Signal Output Voltage		Short circuit proof, source/ sink current max. 10mA	Ready = High Fault = Low	> 4.0 < 0.5	VDC	
Fault Signal Output Load		Sink/ source current. Output is short circuit proof.		10	mADC	
Typical Insulation Strength of Housing	V _{ins}	Caution: Keep appropriate distance between module housing and all conductive elements of the setup!		20	kVDC	
HOUSING	Dimensions	LxWxH	Standard housing with option PT-HV Devices with option FH Devices with option FH & CF	Please consult factory	mm ³	
	Weight		Standard housing, with option PT-HV Devices with option FH Devices with option FH & CF	Please consult factory	g	
FUNCTIONS	Control Signal Input	Pin 1 / Yellow (LS-C: Pin 1). TTL compatible (LS-C: With 100Ω termination). Schmitt-Trigger characteristics. Control voltage 2-10 V (3-5 V for low jitter). Pin 2 / Black (LS-C: Pin 2). The ground pin is internally connected with the safety earthings terminals (threaded inserts) on bottom side. Pin 3 / Red (LS-C: Pin 3). The 5 V input is used for rep rates up to the specified max. frequency f _(max) . Higher rep rates require option HFS. Pin 4 / Orange (LS-C: Pin 4). TTL output, short circuit proof. Indicating switch & driver over-heat, over-frequency, low auxiliary voltage. L = Fault. Pin 5 / Black (LS-C: Shielding). The ground pin is internally connected with the safety earthings terminals (threaded inserts) on bottom side. GREEN: "Auxiliary power good, switch OFF". YELLOW: "Control signal received, switch ON". RED: "Fault condition, switch OFF" A) Standard switches and switches with opt. FC, CF, GCF: Thermo trigger 75°C, response time < 60 s @ 3xP _{d(max)} , ΔT=25K (50 to 75°C). Separate driver protection. B) Switches with option DLC: 65°C, response time < 3 s @ 3xP _{d(max)} , ΔT=25K (40 to 65°C), coolant flow > 3l / min. Separate driver protection.				
	Logic GND / 5V Return					
	5V Auxiliary Supply					
	Fault Signal Output					
	Logic GND / 5V Return					
	LED Indicators					
	Temperature Protection					
ORDERING	HTS 240-300-SCR	Thyristor Switch, 24kV, 3000 A	Option LP	Low Pass. Input filter for increased noise immunity.	Option I-PC	Integrated part components according to customer specification.
			Option HFB	High Frequency Burst (improved capability by external capacitors)	Option UL-94	Flame retardant casting resin, UL94-V0
			Option HFS	High Frequency Switching (two auxiliary supply inputs V1 & V2)	Option I-FWD	Integrated Free-Wheeling Diode. In connection with inductive load only.
			Option I-HFS	Integrated High Frequency Burst	Option I-FWDN	Integrated Freewheeling Diode Network. In connection with inductive
			Option S-TT	Soft Transition Time decrease the rise and fall time by 20%	Option PT-C	Pigtail for control connection: Flexible leads (l=75mm) with lemo
			Option Min-On	Individually increased "Min. On-Time" to avoid unwanted triggering	Option SEP-C	Separated control unit. Control unit with LED indicators in a separate
			Option Min-Off	Individually increased "Min. Off-Time" to avoid unwanted triggering	Option TH	Tubular Housing
			Option PCC	Pulser Configuration. Switch combined with custom specific parts.	Option CF	Copper Cooling Fins. P _{d(max)} can be increased by the factor 3 to
			Option ISO-40	40kV Isolation. Isolation Voltage increased to 40kV.	Option GCF	Grounded Cooling Flange. P _{d(max)} can be increased by the factor 3 to
			Option ISO-80	80kV Isolation. Isolation Voltage increased to 80kV.	Option ILC	Indirect Liquid Cooling (for water). P _{d(max)} can be increased by the factor 3
			Option ISO-120	120kV Isolation. Isolation Voltage increased to 120kV.	Option DLC	Direct Liquid Cooling. P _{d(max)} can be increased by the factor 10 to 100.
			Option ISO-200	200kV Isolation. Isolation Voltage increased to 200kV.	FOR FURTHER PRODUCT OPTIONS PLEASE REFER TO THE OPTIONS	
	Customized switching units are available on request. All data and specifications subject to change without notice. Please visit www.behlke.com for up-dates. 240-300-SCR / Revision 10-03-2017 ©2012 All rights reserved					