	Specification	Symbol	Condition / Comment				HTS 1001-120 SiC HTS 1001-180 SiC		Unit
	Maximum Operating Voltage	$V_{O(max)}$	I _{off} < 80 µADC, T _{case} = 70°C				100		kVDC
	Maximum Isolation Voltage	VI	Between HV switch and control / GND, continuously				± 180		kVDC
RATINGS	Max. Housing Insulation Voltage	V _{INS}	Between switch and housing				± 200		kVDC
	Maximum Turn-On Peak Current	I _{P(max)}	T _{case} = 25°C	t _o < 200 µs, duty cycle <1%			1200	1800	<u> </u>
		1 (many	0000	t₀< 1 ms, duty cycle			760	1420	
R				t _p < 10 ms, duty cycle			230	400	
M				t₀< 100 ms, duty cycle <1%		120	190	ADC	
ABSOLUTE MAXIMUM	Maximum Continuous Load Current	I _{L(max)}		Standard devices		10	20		
		-E(max)	T _{case} = 25°C	Devices with option DLC Standard devices & FC, forced air 4 m/s		240	450	ADC	
	Max. Continuous Power Dissipation	P _{d(max)}				100	120		
	,	· u(max)	T _{case} = 25°C	Devices with option DLC		3000	3200	Watt	
	Linear Derating			Standard devices & I			3.85	4.55	
0			Above 25°C Devices with option DLC			375	486	W/K	
BS	Operating Temperature Range	To	Standard devices & options CF, GCF, ILC. (Option DLC)		-406	60	°C		
4	Storage Temperature Range	Ts	Switches with option ILC may require frost protection!		-4090		°C		
	Max. Permissible Magnetic Field	В	Homogeneous steady-field, surrounding the whole switch			25		mT	
	Max. Auxilliary Voltage	V _{aux}	Built-in overvoltage limiter (replaceable)			5.5		VDC	
	Permissible Operating Voltage Range	Vo	(0 ± 100		kVDC	
	Typical Breakdown Voltage V _{br}		NOTE: V _{br} is a test parameter for quality control purposes I _{off} > 0.5 mA			110		kVDC	
ELECTRICAL CHARACTERISTICS			only. Not applicable in normal operation!						
	Typical Off-State Current	l _{off}	0.8xV ₀ , T _{case} =2570°C, re	educed loff on request			<80		μADC
	Typical Turn-On Resistance	R _{stat}	Each switching path		0.1 x I _{P(max)} , T _{case} =2		0.42	0.28	
			t _p < 1µs, duty cycle < 1%		1.0 x I _{P(max)} , T _{case} =2		0.91	0.52	
					1.0 x I _{P(max)} , T _{case} =7	0°C	1.82	0.98	Ohm
	Typical Propagation Delay Time	t _{d(on)}	Resistive load, 0.1 x I _{P(max)} , 0.8 x V _{O(max)} , 50-50%				250		ns
	Typical Output Pulse Jitter	t _j	Impedance matched input, V _{aux} / V _{ctrl} = 5.00 VDC				3		ns
	Typical Turn-On Rise Time	$t_{r(on)}$	Resistive load, 10-90%		$0.1 \times V_{O(max)}$, $I_L = 0.1 \times I_{p(max)}$		120		
		t _{off} , t _q			$0.8 \times V_{O(max)}$, $I_L = 0.1$		260		
					$0.8 \times V_{O(max)}$, $I_L = 1.0 \times I_{p(max)}$		283		ns
	Typical Turn-Off Rise Time		Resistive load, 10-90%		$0.1 \times V_{O(max)}$, $I_L = 0.1 \times I_{p(max)}$		50		
					$0.8 \text{ x V}_{O(max)}$, $I_L = 1.0 \text{ x } I_{p(max)}$		100		ns
	Maximum Turn-On Time	t _{on(max)}	No limitation				∞		ns
	Minimum Turn-On Time	ton(min)	t _{on(min)} can be customized. Please consult factory				250		ns
	Maximum Turn-Off Time	t _{off(max)}	No limitation				∞		ns
	Minimum Turn-Off Time	t _{off(min)}	toff(min) can be customized. Please consult factory				250		ns
	Max. Continuous Switching	f _(max)	@ V _{aux} = 5.00 V Standard devices without HFS option				<1		
	Frequency Sw. shutdown if f _(max) is Standard do		Standard devices wi			30			
			exceeded Opt. HFS + sufficient cooling option		60		kHz		
				se option HFB for >10 pulses within 20µs or less			400		kHz
	Maximum Number of Pulses / Burst N _(max)		@ f _{b(max)} Standard			>10			
			Note: Option HFB requires external buffer capacitors with a voltage rating of > 630 VDC and a capacitance of 100 rF per additional pulse. Option HFB Option HFB			>100			
						>1000		Pulses	
	Coupling Capacitance Cc		HV side against control side				<100		pF
			Between switch poles, @ 0.5 x V _{O(max)}				<10		pF
				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.				4.5 5	5.5	VDC
	Typical Auxiliary Supply Current laux		V _{aux} = 5.00 VDC, T _{case} = 25°C. 0.01 x f _(max)				TBD		
	Typical Adxillary Supply Surrent		Active current limitation above 1A.			800		mADC	
	Fault Signal Output		Switch will be turn off, if f>f _(max) , V _{aux} <4.75V or T _{case} >75°C			>4.0			
	3		Fault condition is indicated by a logical "L"			<0.8		VDC	
	Opt. HFS, Ext. Supply Voltage V1 V _{HFS(V1)}		Stability ±3%, current consumption <0.4 mA/kHz @ 25°C			15		VDC	
	Opt. HFS, Ext. Supply Voltage V2	V _{HFS(V2)}	Stability ±3%, current consumption <0.5 mA/kHz @ 25°C			300		VDC	
	trinsic Diode Forward Voltage V _F T _{case} = 25°C, I _F = 0.3 x I _{P(max)}						<100)	VDC
	Diode Reverse Recovery Time t_{rrc} $T_{case} = 25^{\circ}C$, $I_{F} = 0.3 \text{ x } I_{P(max)}$, $di/dt = 100 \text{ A/}\mu\text{s}$						< 50		ns
	Dimensions								
HOUSING	Devices with option DLC					TBD		mm ³	
	Weight Standard housing								
		Devices with option DLC	ices with option DLC			TBD		Kg	
	Control Circuit Din 4 / Volley // C.O. Din 4 \ TTL						priotion Operated and	10 1/ /2 5 1/ 5 - 1 - ""	io "\
	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).								er).
SN									
10			G-C: Pin 4). The 5 V input is used for rep rates up to the specified max. frequency f _(max) . Higher						
FUNCTIONS		Orange (LS	S-C: Pin 3). TTL output, short circuit proof. Indicating switch & driver over-heat, over				r-frequency, low auxiliary v	oltage. L = Fault.	
	Inhibit Signal Input Pin 5 / 0	Green (LS-	LS-C: Pin 2). TTL compatible, Schmitt-Trigger characteristics for the connection of external safety					witch Inhibited.	
F	LED Indicators GREEN: "Auxiliary power good, switch OFF". YELLOW: "Control signal received, switch ON". RED: "Fault condition, switch OFF"								
	Temperature Protection Switches with option DLC: 65°C, response time < 3 s @ 3xPd(max), Δ T=25K (40 to 65°C), coolant flow > 3l / min. Separate driver protection.								
ORDERING	HTS 1001-120-SiC Fast HV Mosfet Switch,		Option LP Low Pass. Input filter for increased noise immunity. Option I-PC				Integrated part components according to customer specification.		
	HTS 1001-180-SiC Fast HV Mosfet Switch,	cy Burst (improved capability	urst (improved capability by external capacitors) Option UL-94		4 Flame retardant casting resin, UL94-V0				
	Option HFS High Frequency Switching (two auxiliary supply inputs V1 & V2)				oply inputs V1 & V2)	Option I-FWI			
		Option I-HFS Integrated High Frequency Burst Option I-FW Option S-TT Soft Transition Time decrease the rise and fall time by 20% Option PT-C			DN Integrated Freewheeling Diode Network. In connection with inductive Piqtail for control connection: Flexible leads (I=75mm) with lemo				
EF	Option Min-On Individually increased "Min. On-Time" to avoid un			,	Option SEP-0	, ,			
RE					Option TH	Tubular Housing			
0			Option PCC Pulser Configuration. Switch combined with custom specific parts. Option CF Option ISO-120 120kV Isolation. Isolation Voltage increased to 120kV. Option DLC			Copper Cooling Fins. P _{d(max)} can be increased by the factor 3 to 10			
						Direct Liquid Cooling. Pd(max) can be increased by the factor 10 to 100.			
C	omizad quitabing units are smile less	not All-det					HER PRODUCT OPTIONS PLEASE REFER TO THE OPTIONS PAGE. 1001-120-SiC-RS / Revision 08-04-2024 ©2018 All rights		
cust	omized switching units are available on requ	est. All data a	and specifications subject to chan	ge witnout hotice. Please v	Sit www.benike.com for u	p-dates.	1001-120-SiC-RS / Rev	nsion 08-04-2024 ©2018 A	an rights