	Specification	Symbol	Condition / Comment		HTS 901-10 AC	HTS 1001-10-AC	Unit
ABSOLUTE MAXIMUM RATINGS	Maximum Operating Voltage	$V_{O(max)}$	I_{off} < 50 µADC, T_{case} = 70°C		± 90	± 100	kVDC
	Maximum Isolation Voltage	V_I	Between HV switch and control / GND, continuously		120		kVDC
	Max. Housing Insulation Voltage	V_{INS}	Between switch and housing surface, 3 minutes		150		kVDC
	Maximum Turn-On Peak Current	$I_{P(max)}$	T_{case} = 25°C	t_p< 200 µs, duty cycle <1%	100		ADC
				t_p< 1 ms, duty cycle <1%	59		
				t_p< 10 ms, duty cycle <1%	36		
				t_p< 100 ms, duty cycle <1%	27		
	Maximum Continuous Load Current	$I_{L(max)}$	T_{case} = 25°C	Standard devices	0.6		ADC
				Devices with option DLC	3.19		
	Max. Continuous Power Dissipation	$P_{d(max)}$	T_{case} = 25°C	Standard devices & FC, forced air 4 m/s	57	64	Watt
				Devices with option DLC	3000	3000	
	Linear Derating		Above 25°C	Standard devices & FC, forced air 4 m/s	1.28	1.4	W/K
				Devices with option DLC	40	43.7	
	Operating Temperature Range	T_O	Standard devices & options CF, GCF, ILC. (Option DLC)		-40...75		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. Auxilliary Voltage	V_{aux}	Built-in overvoltage limiter (replaceable)		5		VDC
ELECTRICAL CHARACTERISTICS	Permissible Operating Voltage Range	V_O			0... ± 90	0... ± 100	kVDC
	Typical Breakdown Voltage	V_{br}	**NOTE:** V_{br} is a test parameter for quality control purposes only. Not applicable in	I_{off} > 0.5 mA	99	110	kVDC
	Typical Off-State Current	I_{off}	0.8xV_O, T_{case} =25...70°C, reduced I_{off} on request		20		µADC
	Typical Turn-On Resistance	R_{stat}	Each switching path t_p < 1µs, duty cycle < 1%	0.1 x $I_{P(max)}$, T_{case} =25°C	32	36	Ohm
				1.0 x $I_{P(max)}$, T_{case} =25°C	37.5	41.7	
				1.0 x $I_{P(max)}$, T_{case} =70°C	78	80.8	
	Residual Voltage (Total Voltage drop in on-state)	V_{res}	T_{case} = 25°C	I_L = 0.001 A	0.072	0.08	
				I_L = 0.01 A	0.72	0.8	
				I_L = 0.1 A	7	8	
				I_L = 1.0 A	91	102	
				I_L = 10.0 A	409	459	
	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 x $V_{O(max)}$, I_L = 0.1 x $I_{p(max)}$	70		ns
				0.8 x $V_{O(max)}$, I_L = 0.1 x $I_{p(max)}$	90		
				0.8 x $V_{O(max)}$, I_L = 1.0 x $I_{p(max)}$	110		
	Typical Turn-Off Rise Time	t_{off}, t_q	Resistive load, 10-90%	0.1 x $V_{O(max)}$, I_L = 0.1 x $I_{p(max)}$	40		ns
				0.8 x $V_{O(max)}$, I_L = 1.0 x $I_{p(max)}$	90		
	Maximum Turn-On Time	$t_{on(max)}$	No limitation		∞		
	Minimum Turn-On Time	$t_{on(min)}$	$t_{on(min)}$ can be customized. Please consult factory		250		ns
	Maximum Turn-Off Time	$t_{off(max)}$	No limitation		∞		
	Minimum Turn-Off Time	$t_{off(min)}$	$t_{off(min)}$ can be customized. Please consult factory		250		ns
	Max. Continuous Switching Frequency	$f_{(max)}$	@ V_{aux}= 5.00 V Sw. shutdown if $f_{(max)}$ is exceeded	Standard devices without HFS option	<1		kHz
				Standard devices with HFS supply	30		
				Opt. HFS + sufficient cooling option	71		
	Maximum Burst Frequency	$f_{b(max)}$	Use option HFB for >10 pulses within 20µs or less		500		kHz
	Maximum Number of Pulses / Burst	$N_{(max)}$	@ $f_{b(max)}$ Note: Option HFB requires external buffer capacitors with a voltage rating of > 630VDC and a cpacitance of 100nF per additional pulse.	Standard	10 Use option HFB for >150		Pulses
				Option I-HFB	>100		
				Option HFB	>1000		
	Coupling Capacitance	C_C	HV side against control side		50…100		pF
	Natural Capacitance	C_N	Between switch poles, @ 0.5 x $V_{O(max)}$		<20		pF
	Control Voltage Range	V_{tr}	The V_{tr} 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…9		VDC
	Typical Auxiliary Supply Current	I_{aux}	V_{aux} = 5.00 VDC, T_{case} = 25°C.	0.01 x $f_{(max)}$	150		mADC
			Active current limitation above 1A.	@ $f_{(max)}$	800		
	Fault Signal Output		Switch will be turn off, if f>$f_{(max)}$, V_{aux}<4.75V or T_{case}>75°C Fault condition is indicated by a logical "L"		H=4V, L=0.5V		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 <0.9 mA/kHz @ 25°C		450		VDC
	Intrinsic Diode Forward Voltage	V_F	T_{case} = 25°C, I_F = 10A		<50		VDC
	Diode Reverse Recovery Time	t_{rrc}	CAUTION: Intrinsic diodes must not used in normal operation. Inductive load requires fast free-wheeling diodes (series FDA) in parallel to the switch.	I_F= 10.0 A	<250		ns
HOUSIN	Dimensions	LxWxH	Standard housing Tubular Housing, option TH (LxD)		Please contact the manufactured!	Please contact the manufactured!	mm^3
	Weight		Standard housing Tubular Housing, option TH		Please contact the manufactured!		g

Recommended Options:

FUNCTIONS

Option LP	Low Pass. Input filter for increased noise immunity.
Option S-TT	Soft Transition Time. Slower switching speed for simplified EMC.
Option HFB	High Frequency Burst, Improved burst capability by driver.
Option HFS	High Frequency Switching (two auxiliary supply inputs V1 & V2)
Option MIN-ON	Minimum ON-Time: Individually increased "Minimum ON-Time" to avoid unwanted triggering by input noise during this time. Please indicate the demanded $t_{on(min)}$ with order.
Option MIN-OFF	Minimum OFF-Time: Individually increased "Minimum OFF-Time" to avoid unwanted triggering by input noise during this time. Please indicate the demanded $t_{off(min)}$ with order.
Option ILC	Indirect Liquid Cooling (for water). $P_{d(max)}$ can be increased by the factor 3 to 15.
Option DLC	Direct Liquid Cooling (for FPE/PFC). $P_{d(max)}$ can be increased by the factor 10 to 100. 15.

FOR FURTHER PRODUCT OPTIONS PLEASE REFER TO THE OPTIONS PAGE.