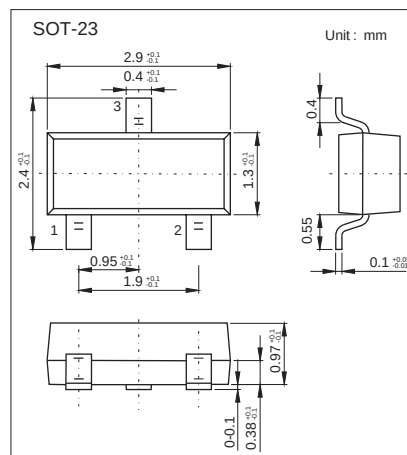


TVS Diodes

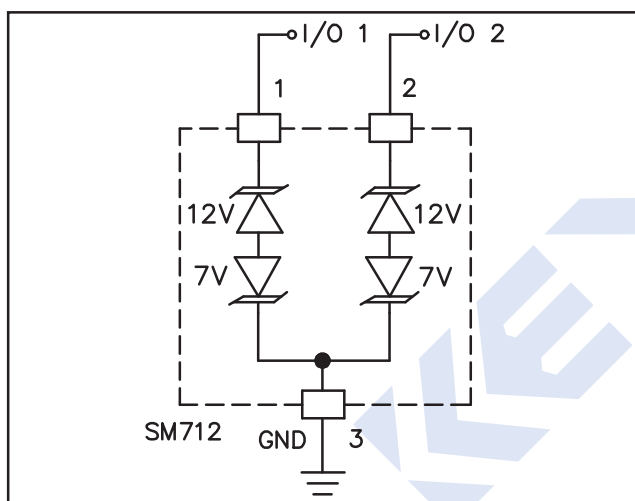
SM712

■ Features

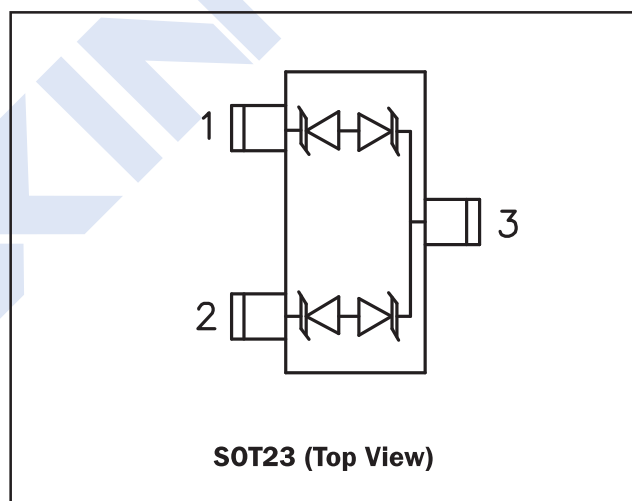
- 400 watts peak pulse power ($t_p=8/20\mu s$)
- Transient protection for asymmetrical data lines to
IEC 61000-4-2(ESD) 15kV(air),8kV(contact)
IEC 61000-4-4(EFT) 40A ($t_5/50ns$)
IEC 61000-4-5(Lightning) 12A($8/20\mu s$)
- Protects two +12V to -7V lines
- Low capacitance
- Low clamping voltage
- Marking :712



Circuit Diagram



Schematic & PIN Configuration

■ Absolute Maximum Ratings $T_a = 25^\circ C$

Parameter	Symbol	Rating	Unit
Peak Pulse Power($t_p=8/20\mu s$)	PPK	400	W
Peak Pulse Current($t_p=8/20\mu s$)	IPP	17	A
Lead Soldering Temperature (10 sec.)	TL	260	$^\circ C$
Operating Temperature	TJ	-55 to +125	$^\circ C$
Storage Temperature	Tstg	-55 to +150	

TVS Diodes

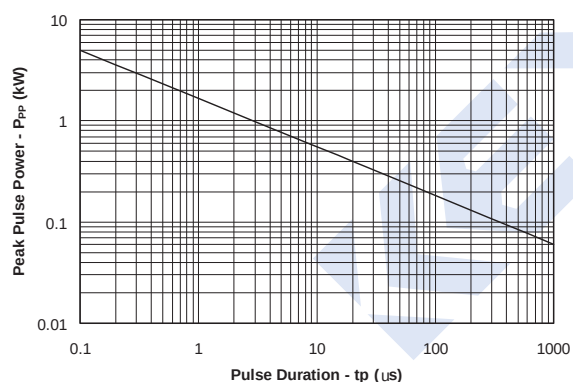
SM712

■ Electrical Characteristics $T_a = 25^\circ\text{C}$

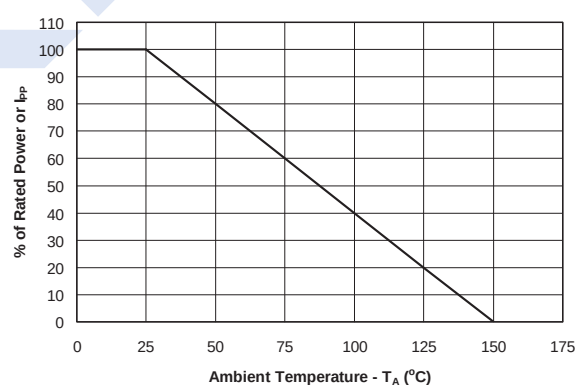
Parameter	Symbol	Test Conditions	Min	Typ	Max	Min	Typ	Max	Unit
			Pins 1 to 3 and 2 to 3 (12V TVS)			Pins 1 to 3 and 2 to 3 (7V TVS)			
Reverse Stand-Off voltage	V_{RWM}	Pin 3 to 1 or Pin 2 to 1			12			7	V
Reverse Breakdown voltage	V_{BR}	$I_{PT} = 1\text{ mA}$	13.3			7.5			
Clamping Voltage	V_C	$I_{PP} = 5\text{A}$, $t_p = 8/20\mu\text{s}$ $I_{PP} = 17\text{A}$, $t_p = 8/20\mu\text{s}$			20 26			10 12	
Reverse Voltage leakage Current	I_R	$V_R = V_{RWM}$			1			20	nA
Junction Capacitance	C_j	$V_R = 0\text{ V}$, $f = 1\text{ MHz}$			75			75	pF
		$V_R = V_{RWM}$, $f = 1\text{ MHz}$		45			45		

■ Typical Characteristics

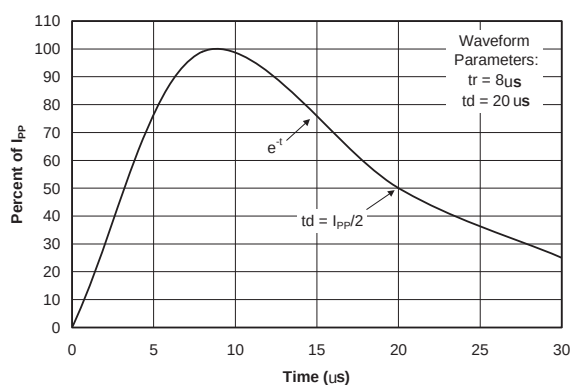
Non-Repetitive Peak Pulse Power vs. Pulse Time



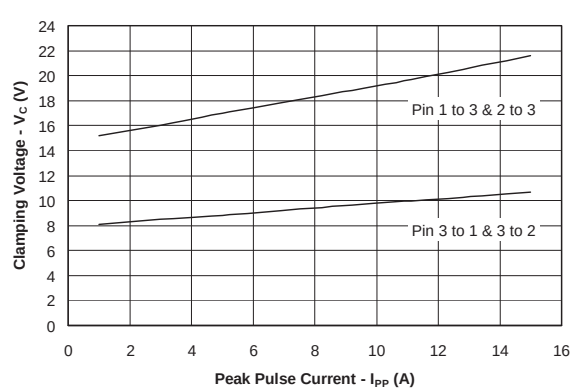
Power Derating Curve



Pulse Waveform



Clamping Voltage vs. Peak Pulse Current

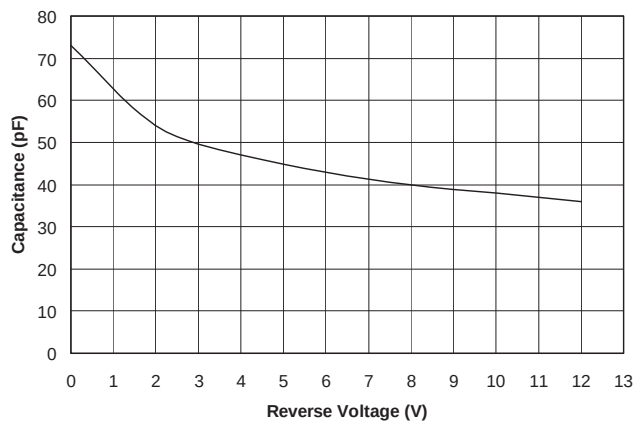


TVS Diodes

SM712

■ Typical Characteristics

Capacitance vs. Reverse Voltage



RS-485 Protection Circuit

