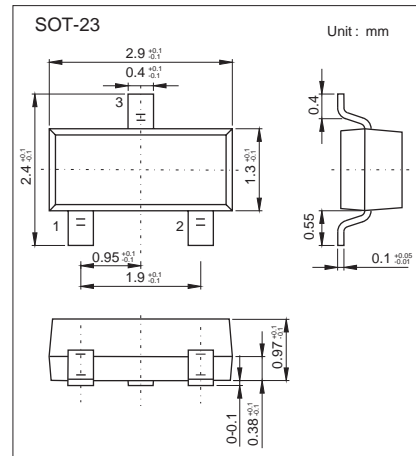


## TVS Diodes

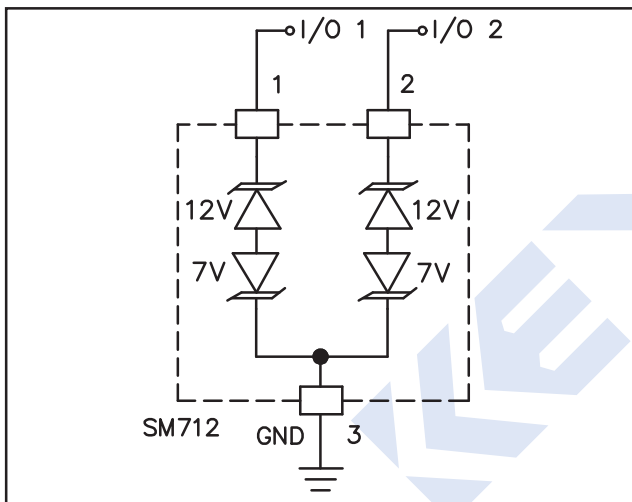
### SM712

#### ■ Features

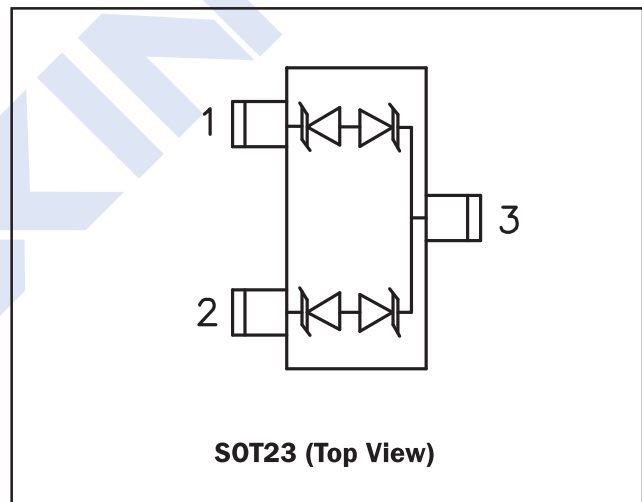
- 400 watts peak pulse power ( $t_p=8/20\mu s$ )
- Transient protection for asymmetrical data lines to  
IEC 61000-4-2(ESD) 15kV(air),8kV(contact)  
IEC 61000-4-4(EFT) 40A ( $t_5/50ns$ )  
IEC 61000-4-5(Lightning) 12A( $8/20\mu s$ )
- Protects two +12V to -7V lines
- Low capacitance
- Low clamping voltage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

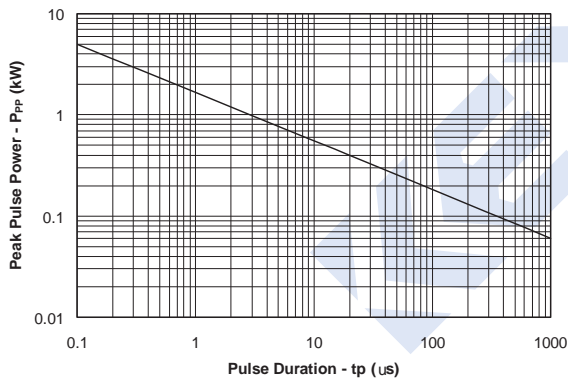
SM712

Electrical Characteristics Ta = 25°C

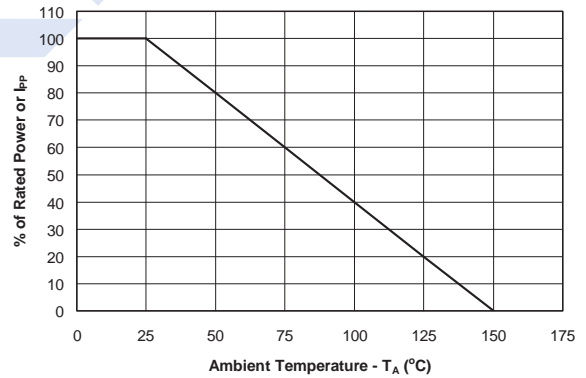
Parameter	Symbol	Test Conditions	Min	Typ	Max	Min	Typ	Max	Unit
			Pins 1 to 3 and 2 to 3 (12V TVS)			Pins 1 to 3 and 2 to 3 (7V TVS)			
Reverse Stand-Off voltage	$V_{RWM}$	Pin 3 to 1 or Pin 2 to 1			12			7	V
Reverse Breakdown voltage	$V_{BR}$	$I_{PT} = 1 \text{ mA}$	13.3			7.5			
Clamping Voltage	$V_C$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

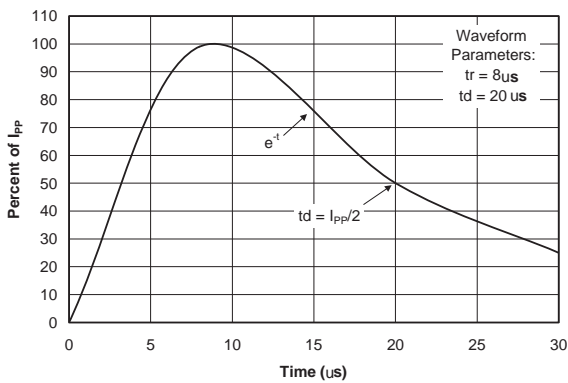
Non-Repetitive Peak Pulse Power vs. Pulse Time



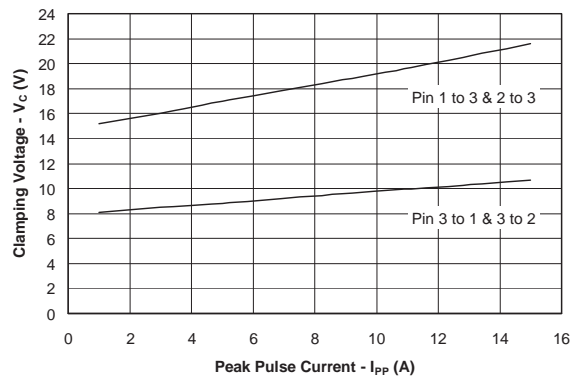
Power Derating Curve



Pulse Waveform



Clamping Voltage vs. Peak Pulse Current

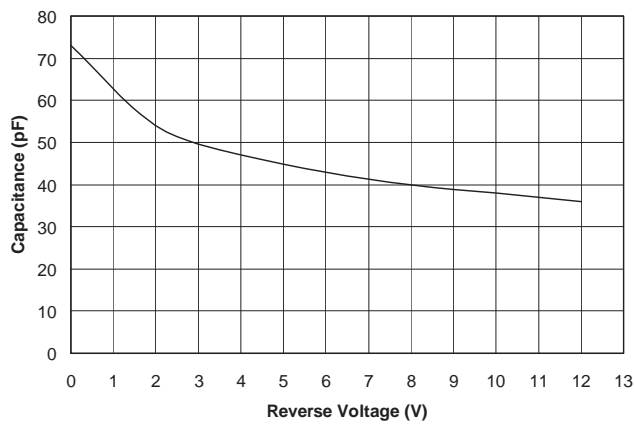


## TVS Diodes

## SM712

## ■ Typical Characteristics

Capacitance vs. Reverse Voltage



RS-485 Protection Circuit

