

# SM712.TCT-(SOT-23)

TVS Diode Array

## DESCRIPTION

The SM712 is designed for applications requiring transient overvoltage protection capability. They are intended for use in voltage and ESD sensitive equipment such as computers, printers, business machines, communication systems, medical equipment and other applications. These devices are ideal for situations where board space is at a premium.

This series has been specifically designed to protect sensitive components which are connected to power, data and transmission lines from overvoltage caused by ESD (electrostatic discharge), CDE (Cable Discharge Events), and EFT (electrical fast transients).

## FEATURES

- ◇ IEC61000-4-2 (ESD)  $\pm 15\text{kV}$  (air),  $\pm 8\text{kV}$  (contact)
- ◇ IEC61000-4-4 (EFT) 40A (5/50ns)
- ◇ 105 Watts Peak Pulse Power per (tp=8/20 $\mu\text{s}$ )
- ◇ Protects one bidirectional line or two unidirectional lines
- ◇ Low clamping voltage
- ◇ Working voltages : 12V
- ◇ Low leakage current

## MACHANICAL DATA

- ◇ SOT-23 package
- ◇ Flammability Rating: UL 94V-0
- ◇ Packaging: Tape and Reel
- ◇ High temperature soldering guaranteed: 260 °C /10s
- ◇ Reel size: 7 inch
- ◇ MSL 1

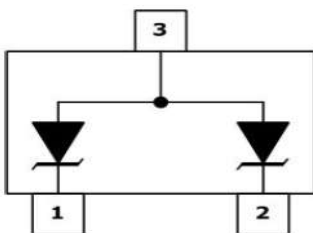
## ORDERING INFORMATION

- ◇ Device: SM712
- ◇ Package: SOT-23
- ◇ Marking: 12C
- ◇ Material: Halogen free
- ◇ Packing: Tape & Reel
- ◇ Quantity per reel: 3,000pcs

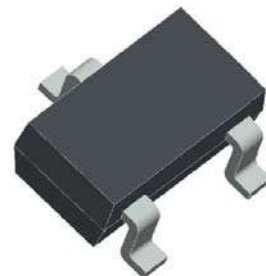
## APPLICATIONS

- ◇ Cell Phone Handsets and Accessories
- ◇ Microprocessor based equipment
- ◇ Personal Digital Assistants (PDA's)
- ◇ Notebooks, Desktops, and Servers
- ◇ Portable Instrumentation
- ◇ Networking and Telecom
- ◇ Serial and Parallel Ports.
- ◇ Peripherals

## PIN CONFIGURATION



## PACKAGE OUTLINE



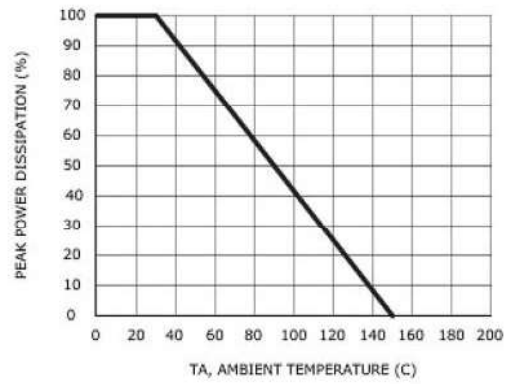
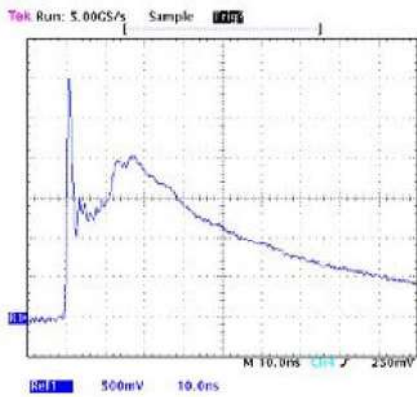
**ABSOLUTE MAXIMUM RATING**

Symbol	Parameter	Value	Units
$V_{ESD}$	ESD per IEC 61000-4-2 (Air)	$\pm 30$	kV
	ESD per IEC 61000-4-2 (Contact)	$\pm 30$	
$P_{PP}$	Peak Pulse Power (8/20 $\mu$ s)	198	W
$T_{OPT}$	Operating Temperature	-55/+150	$^{\circ}$ C
$T_{STG}$	Storage Temperature	-55/+150	$^{\circ}$ C
$T_L$	Lead Soldering Temperature	260 (10 sec.)	$^{\circ}$ C

**ELECTRICAL CHARACTERISTICS (Tamb=25 $^{\circ}$ C)**

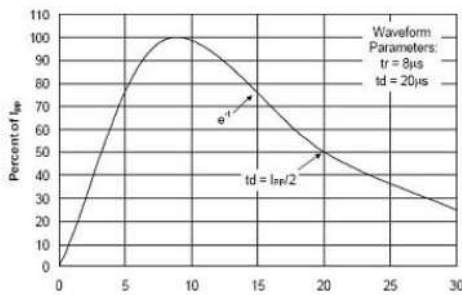
Symbol	Parameter	Test Condition	Min	Typ	Max	Units
$V_{RWM}$	Reverse Working Voltage				12	V
$V_{BR}$	Reverse Breakdown Voltage	$I_T = 1\text{mA}$	13.3			V
$I_R$	Reverse Leakage Current	$V_{RWM} = 12\text{V}$			1.0	$\mu$ A
$V_C$	Clamping Voltage	$I_{PP} = 1\text{A}$ , $t_p = 8/20\mu\text{s}$			19	V
$V_C$	Clamping Voltage	$I_{PP} = 6\text{A}$ , $t_p = 8/20\mu\text{s}$			33	V
$C_J$	Junction Capacitance	$V_R = 0\text{V}$ , $f = 1\text{MHz}$			60	pF

## ELECTRICAL CHARACTERISTICS CURVE

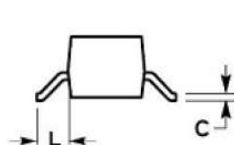
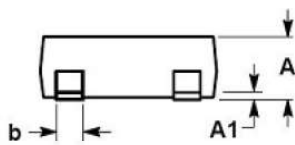
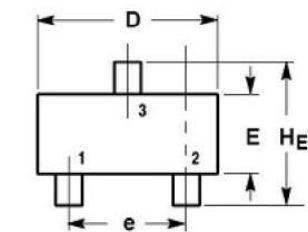


Power Derating Curve

Pulse Waveform



## SOT-23 PACKAGE OUTLINE DIMENSIONS



DIM	MILLIMETERS			INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	0.89	1.00	1.11	0.035	0.040	0.044
A1	0.01	0.06	0.10	0.001	0.002	0.004
b	0.37	0.44	0.50	0.015	0.018	0.020
c	0.09	0.13	0.18	0.003	0.005	0.007
D	2.80	2.90	3.04	0.110	0.114	0.120
E	1.20	1.30	1.40	0.047	0.051	0.055
e	1.78	1.90	2.04	0.070	0.075	0.081
L	0.35	0.54	0.69	0.014	0.021	0.029
HE	2.10	2.40	2.64	0.083	0.094	0.104