



# SM24QC

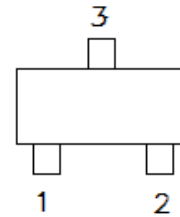
Dual Line CAN bus protection Diode

## CAN BUS ESD PROTECTION DIODES

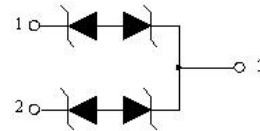
### Features

- ◆ 200W peak pulse power (8/20μs)
- ◆ IEC61000-4-2 (ESD) ±15kV (air), ±8kV (contact)
- ◆ IEC61000-4-4 (EFT) 40A (5/50ns)
- ◆ IEC61000-4-5 (Lighting) 3A (8/20μs)
- ◆ Y [ I \ a \* A ] | c e ^ • A G X
- ◆ S [ , A | c e ] a \* A ] | c e ^
- ◆ Low leakage current

### Pin Configuration



### Circuit Diagram



### Applications

- ◆ DeviceNet
- ◆ Low and High Speed CAN
- ◆ Smart Distribution Systems (SDS)
- ◆ Controlled Area Network – CAN 2.1 / CAN FD

### Mechanical Characteristics

- ◆ Package: SOT-23
- ◆ Lead Finish: Matte Tin
- ◆ Flammability Rating: UL 94V-0
- ◆ Packaging: Tape and Reel
- ◆ Marking: C24

### PACKAGE SPECIFICATIONS

Package	Reel Size	Reel DIA. (mm)	Q'TY/Reel (pcs)	Box Size (mm)	QTY/Box (pcs)	Carton Size (mm)	Q'TY/Carton (pcs)
SOT-23	7'	330	3000	203×203×195	45000	438×438×220	180000

### Absolute Maximum Ratings (T<sub>A</sub>=25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
ESD per IEC 61000-4-2 (Air)	V <sub>ESD</sub>	± 30	kV
ESD per IEC 61000-4-2 (Contact)		± 20	
Peak Pulse Power(tp=8/20us waveform)	P <sub>PP</sub>	200	W
Operating Temperature	T <sub>OPT</sub>	-55 to +150	°C
Storage Temperature Range	T <sub>STG</sub>	-55 to +150	°C
Lead Solder Temperature – Maximum (10 Second Duration)	T <sub>L</sub>	260(10 sec.)	°C

The above data are for reference only.



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### Electrical Characteristics (T<sub>A</sub>=25°C unless otherwise specified)

Symbol	Param	Test Condition	Min	Typ	Max	Units
V <sub>RWM</sub>	Reverse Working Voltage	Pin 1,2,to Pin3			24	V
V <sub>BR</sub>	Reverse Breakdown Voltage	I <sub>T</sub> = 1mA Pin 1,2,to Pin3	26		32	V
I <sub>R</sub>	Reverse Leakage Current	V <sub>RWM</sub> = 24V Pin 1,2,to Pin3			1.0	μA
V <sub>C</sub>	Clamping Voltage	I <sub>PP</sub> = 1A, t <sub>p</sub> = 8/20μs Pin 1,2,to Pin3			36	V
		I <sub>PP</sub> = 3A, t <sub>p</sub> = 8/20μs Pin 1,2,to Pin3			50	V
C <sub>J</sub>	Junction Capacitance	V <sub>R</sub> = 0V, f = 1MHz Pin 1,2,to Pin3		13	17	pF

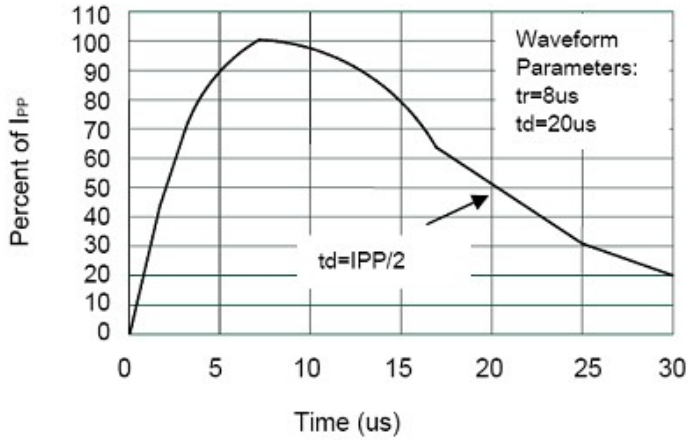
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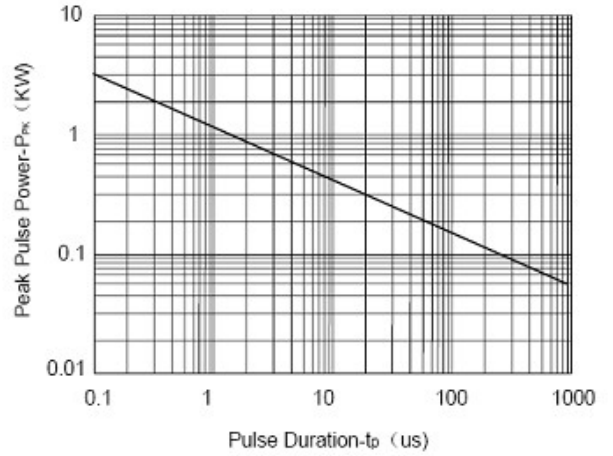
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### ELECTRICAL CHARACTERISTICS CURVE



**Pulse Waveform**

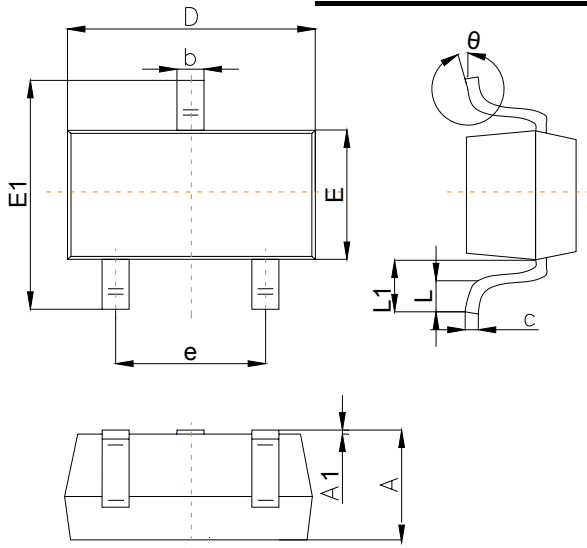


**Non-Repetitive Peak Pulse Power vs. Pulse Time**

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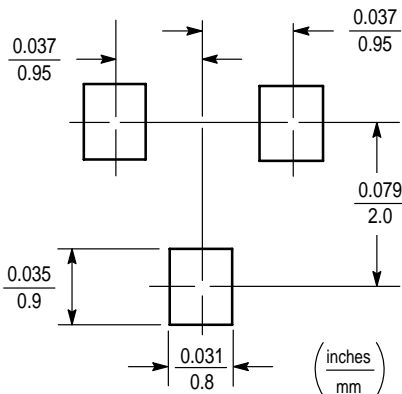
### Outline Drawing

#### SOT-23 Package Outline Dimensions



Symbol	Dimensions In Millimeters		
	Min	Typ	Max
A	1.00		1.40
A1			0.10
b	0.35		0.50
c	0.10		0.20
D	2.70	2.90	3.10
E	1.40		1.60
E1	2.4		2.80
e		1.90	
L	0.10		0.30
L1	0.4		
$\theta$	0°		10°

### Suggested Pad Layout



**Note:**

1. Controlling dimension: in/millimeters.
2. General tolerance:  $\pm 0.05\text{mm}$ .
3. The pad layout is for reference purposes only.

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