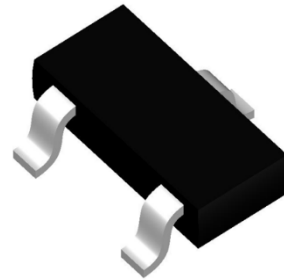


FEATURES

- Stand-off voltage: 24V Max.
- Transient protection for each line according to IEC61000-4-2 (ESD): $\pm 30\text{kV}$ (contact discharge)
: $\pm 30\text{kV}$ (air discharge)
ISO 10605 (ESD): $\pm 30\text{kV}$ (contact discharge)
IEC61000-4-5 (surge): 4A (8/20 μs)
- Capacitance: $C_J = 5.5\text{pF}$ typ.
- Low leakage current
- Low clamping voltage: $V_{CL} = 31.5\text{V}$ typ. @ $I_{PP} = 16\text{A}$ (TLP)
- Solid-state silicon technology
- Device meets MSL 1 requirements
- AEC-Q101 qualified



Provide green and environmentally friendly lead-free package

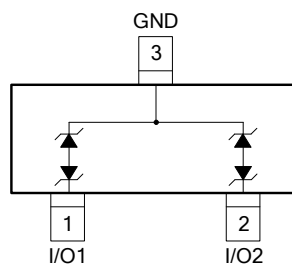
DESCRIPTION

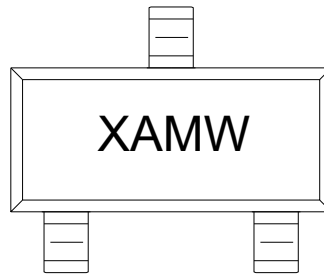
The SITSE24V2BNQ is a transient voltage suppressor designed to protect two automotive Controller Area Network (CAN) bus lines from the damage caused by ESD and other transients.

The SITSE24V2BNQ is available in SOT-23 package. Standard products are Pb-free and Halogen-free.

Applications:

- CAN Bus Protection
- Automotive Applications
- Electronic Control Units
- Body Control Units
- ADAS Control Units
- Power Train Control Units

CIRCUIT DIAGRAM

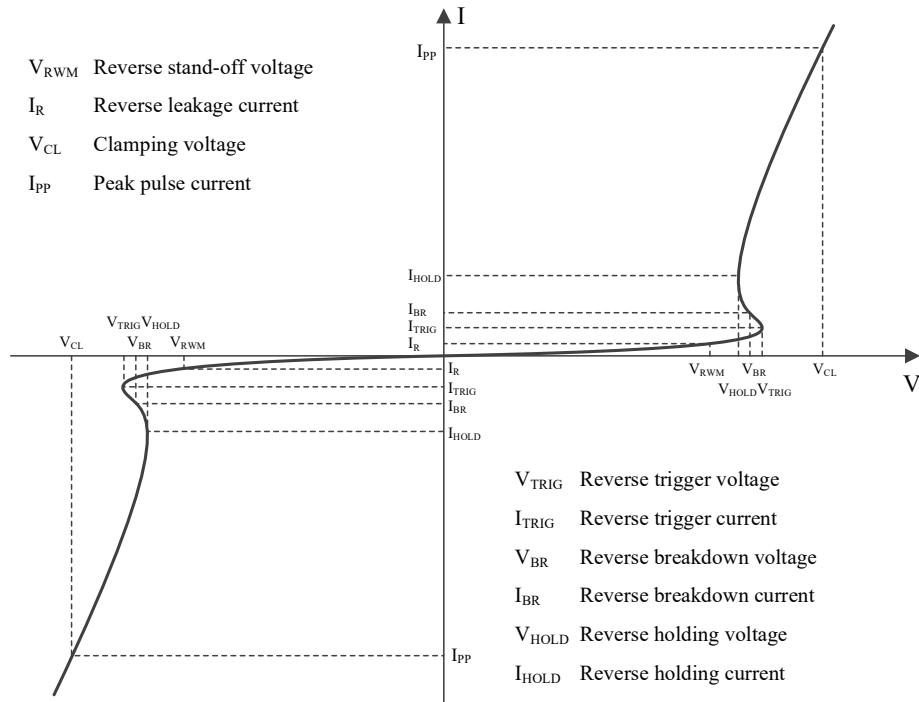
MARKING (TOP VIEW)


XA = Device code
 MW = Date code (A~Z a~z)

LIMITING VALUES

Parameter	Symbol	Value	Unit
Peak pulse power ($t_p = 8/20\mu s$)	P_{PK}	152	W
Peak pulse current ($t_p = 8/20\mu s$)	I_{PP}	4	A
ESD according to IEC61000-4-2 air discharge	V_{ESD}	± 30	kV
ESD according to IEC61000-4-2 contact discharge		± 30	kV
ESD according to ISO 10605 contact discharge $C = 330\text{ pF}$, $R = 330\ \Omega$; $C = 150\text{ pF}$, $R = 330\ \Omega$; $C = 330\text{ pF}$, $R = 2\text{ k}\Omega$; $C = 150\text{ pF}$, $R = 2\text{ k}\Omega$;		± 30	kV
Junction temperature	T_J	150	$^{\circ}\text{C}$
Operating temperature	T_{OP}	-55~150	$^{\circ}\text{C}$
Lead temperature	T_L	260	$^{\circ}\text{C}$
Storage temperature	T_{STG}	-65~150	$^{\circ}\text{C}$

ELECTRICAL CHARACTERISTICS



Definitions of electrical characteristics

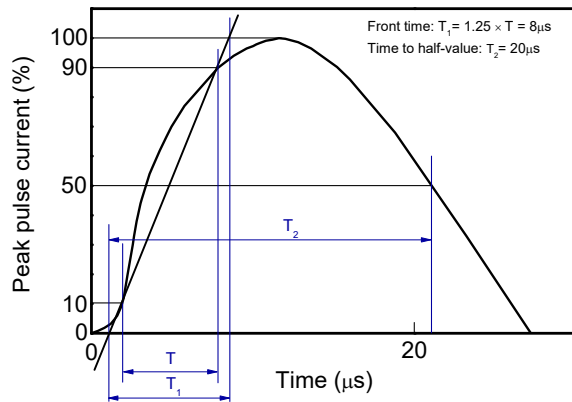
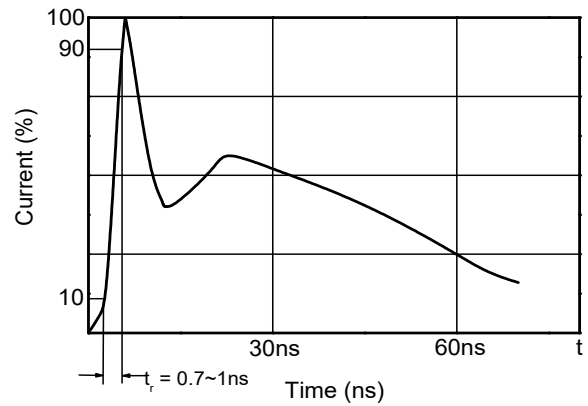
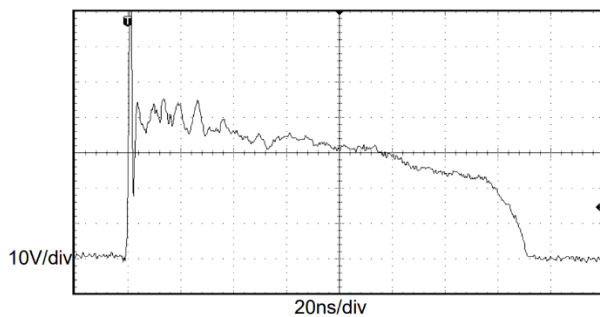
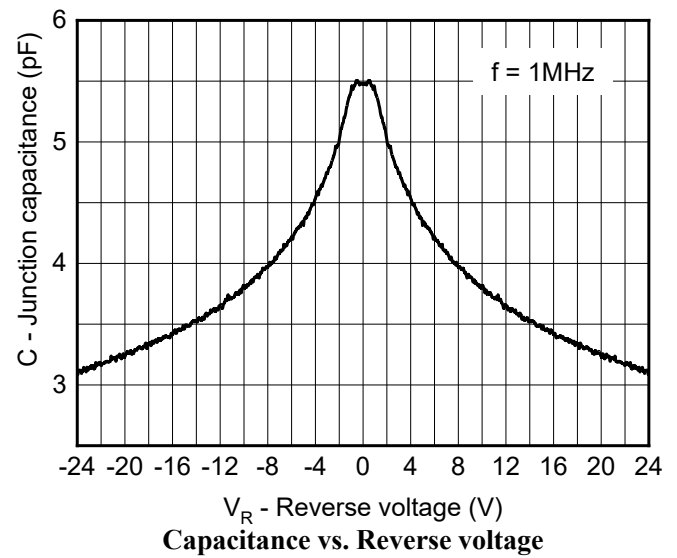
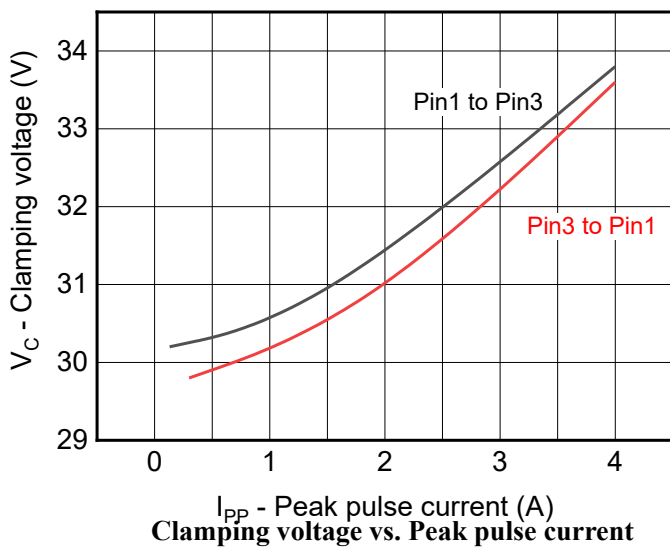
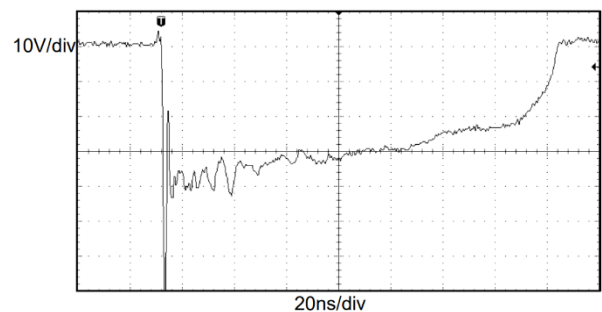
Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Reverse maximum working voltage	V_{RWM}				± 24	V
Reverse leakage current	I_R	$V_{RWM} = 24V$			50	nA
Reverse breakdown voltage	V_{BR}	$I_{BR} = 1mA$	26			V
Clamping voltage ⁽¹⁾	V_{CL}	$I_{PP} = 16A, t_p = 100ns$		31.5		V
Clamping voltage ⁽²⁾	V_{CL}	$V_{ESD} = 8kV$		36		V
Clamping voltage ⁽³⁾	V_{CL}	$I_{PP} = 1A, t_p = 8/20\mu s$			34	V
		$I_{PP} = 4A, t_p = 8/20\mu s$			38	V
Dynamic resistance ⁽¹⁾	R_{DYN}			0.4		Ω
Junction capacitance	C_J	$V_R = 0V, f = 1MHz$, Any I/O pin to GND		5.5	6.5	pF

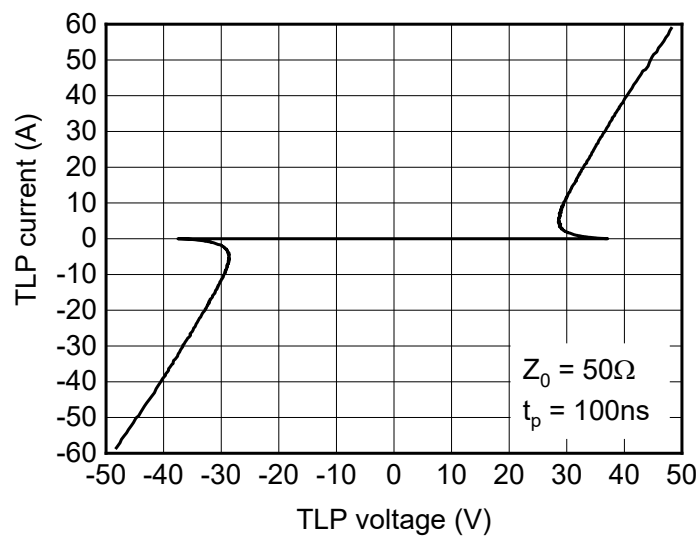
($T_A = 25^\circ C$, unless otherwise noted.)

(1) TLP parameter: $Z_0 = 50\Omega$, $t_p = 100ns$, averaging window from 70ns to 90ns. R_{DYN} is calculated from 20A to 40A.

(2) Contact discharge mode, according to IEC61000-4-2.

(3) Non-repetitive current pulse, according to IEC61000-4-5.

TYPICAL CHARACTERISTICS

8/20μs waveform per IEC61000-4-5

Contact discharge current waveform per IEC61000-4-2

ESD clamping
(+8kV contact discharge per IEC61000-4-2)

ESD clamping
(-8kV contact discharge per IEC61000-4-2)



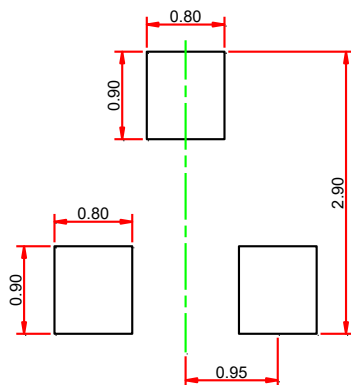
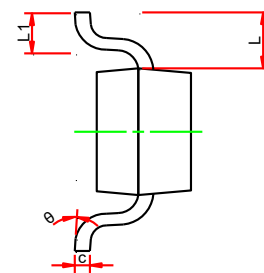
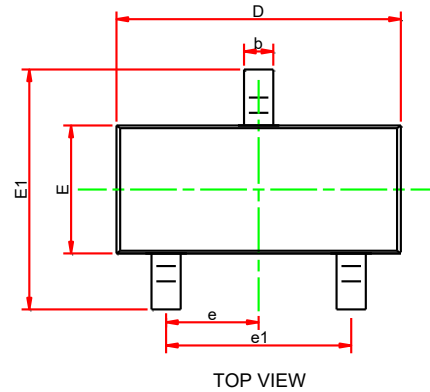
TLP Measurement



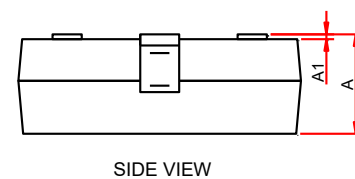
SOT-23 DIMENSIONS

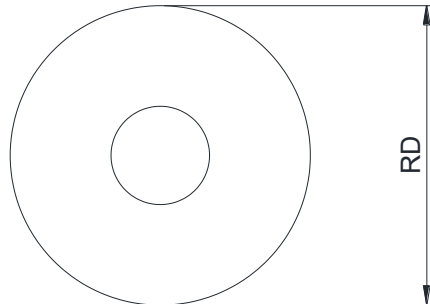
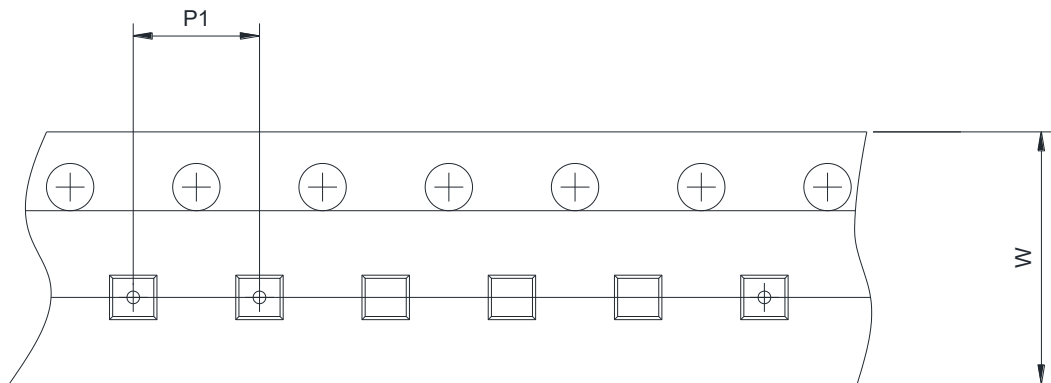
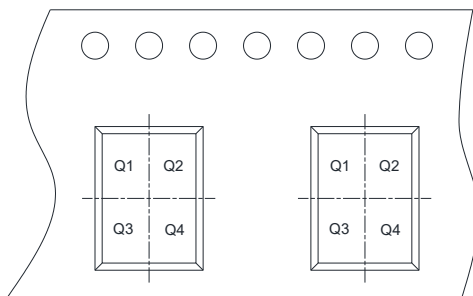
PACKAGE SIZE

Symbol	Min.	Typ.	Max.
A	0.91	-	1.12
A1	0.01	-	0.10
b	0.30	0.40	0.50
c	0.09	-	0.15
D	2.80	2.90	3.00
E1	2.25	2.40	2.55
E	1.20	1.30	1.40
e	0.95 BSC		
e1	1.80	1.90	2.00
L	0.55Ref.		
L1	0.30	0.40	0.50
θ	0°	-	8°



RECOMMENDED LAND PATTERN(unit:mm)



TAPE AND REEL INFORMATION
Reel Dimensions

Tape Dimensions

Quadrant Assignments For PIN1 Orientation In Tape



 User Direction of Feed

RD	Reel Dimension	☒ 7inch ☐ 13inch
W	Overall width of the carrier tape	☒ 8mm ☐ 12mm ☐ 16mm
P1	Pitch between successive cavity centers	☐ 2mm ☒ 4mm ☐ 8mm
Pin1	Pin1 Quadrant	☐ Q1 ☐ Q2 ☒ Q3 ☐ Q4



ORDERING INFORMATION

TYPE NUMBER	PACKAGE	PACKING
SITSE24V2BNQ-3/TR	SOT-23	Tape and reel

SOT-23 is packed with 3000 pieces/disc in braided packaging.

Important statement

SIT reserves the right to change the above-mentioned information without prior notice.

REVISION HISTORY

Version number	Datasheet status	Revision date
V1.0	Initial version.	May 2025