

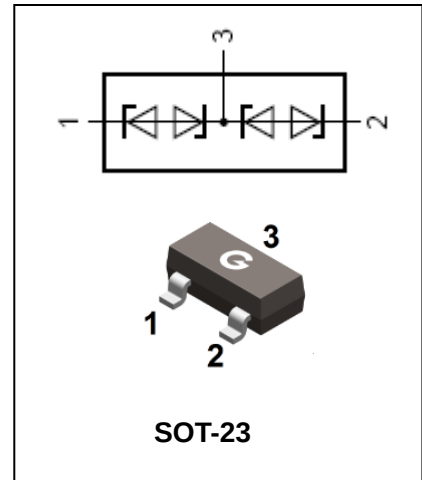
FlexRay Bus ESD Protection Diode

TPESD1FLEX

FEATURES

- Due to the integrated diode structure only one small SOT23 package is needed to protect two FlexRay bus lines
- Max. peak pulse power: $P_{pp} = 200\text{ W}$ at $t_p = 8/20\text{ us}$
- Low clamping voltage: $V_{(CL)R} = 40\text{ V}$ at $I_{pp} = 1\text{ A}$
- Ultra low leakage current: $I_{RM} < 1\text{ nA}$
- ESD protection of up to 23 kV
- Halogen free
- Qualified to AEC-Q101 standards for high reliability

HF



APPLICATIONS

- FlexRay bus protection
- Automotive applications

ORDERING INFORMATION

Type No.	Marking	Package Code
TPESD1FLEX	ZJ	SOT-23

MAXIMUM RATING @ $T_a=25^\circ\text{C}$ unless otherwise specified

Symbol	Parameter	Ratings	Units
P_{PP}	Peak Pulse Power($t_p=8/20\text{us}$)	200	W
I_{PP}	peak pulse current ($t_p=8/20\text{us}$)	3	A
ESD	electrostatic discharge capability IEC 61000-4-2(contact discharge) HBM MIL-STD883	23 10	KV KV
$R_{\theta JA}$	Thermal Resistance Junction-to-Air ^{*1}	300	$^\circ\text{C/W}$
$R_{\theta JC}$	Thermal Resistance Junction-to-Case ^{*1}	185	$^\circ\text{C/W}$
$R_{\theta JL}$	Thermal Resistance Junction-to-Lead ^{*1}	230	$^\circ\text{C/W}$
T_J	junction temperature	-55 to +150	$^\circ\text{C}$
T_{STG}	Storage Temperature	-65 to +150	$^\circ\text{C}$

Note 1: The data tested by surface mounted on a 25.4mm * 25.4mm * 1mm FR4-epoxy P.C.B

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ELECTRICAL CHARACTERISTICS @ Ta=25°C unless otherwise specified

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Reverse Stand-Off Voltage	V_{RWM}				24	V
Reverse Breakdown Voltage	V_{BR}	$I_t=1mA$	25.4	27.8	30.3	V
Reverse Leakage Current	I_R	$V_{RWM}=24V$			50	nA
Clamping Voltage	V_C	$I_{PP}=1A$ $I_{PP}=3A$			40 70	V
Junction Capacitance	C_d	$V_R=0V, f=1MHz$		11		pF
differential resistance	r_{dif}	$I_R=1mA$			300	Ω

TYPICAL CHARACTERISTICS @ Ta=25°C unless otherwise specified

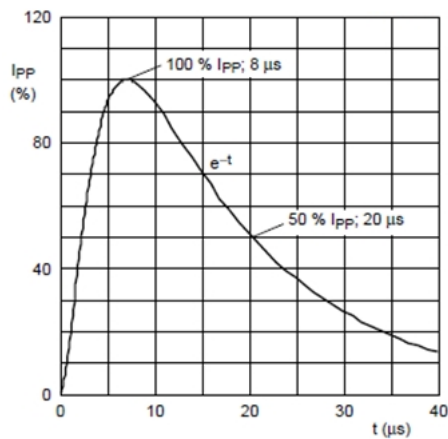


Fig1. 8/20us pulse waveform according to
IEC61000-4-5

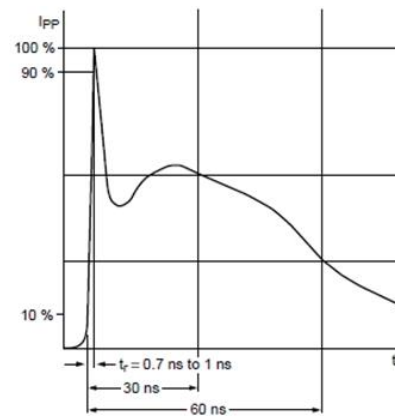


Fig2. ESD pulse waveform according to
IEC61000-4-2

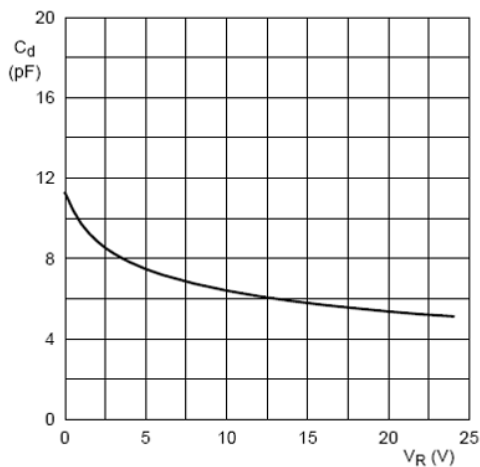


Fig3. Cd vs Vr Cure

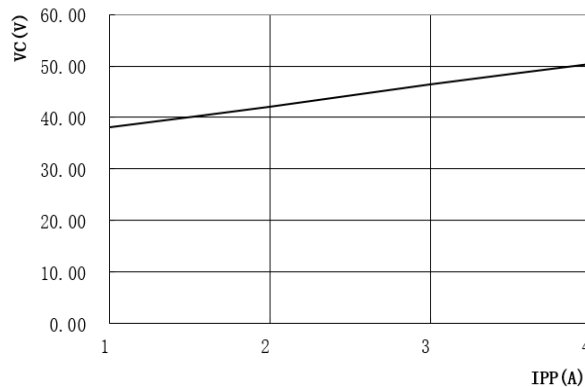


Fig4. VC vs IPP Cure

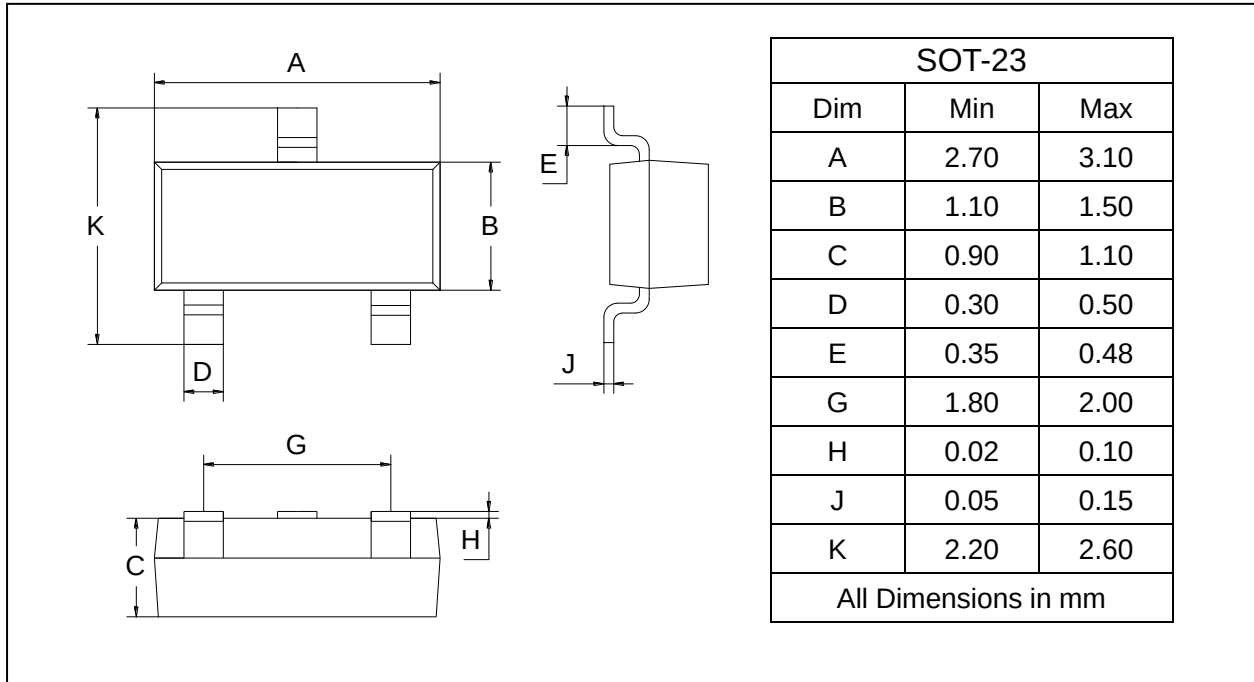
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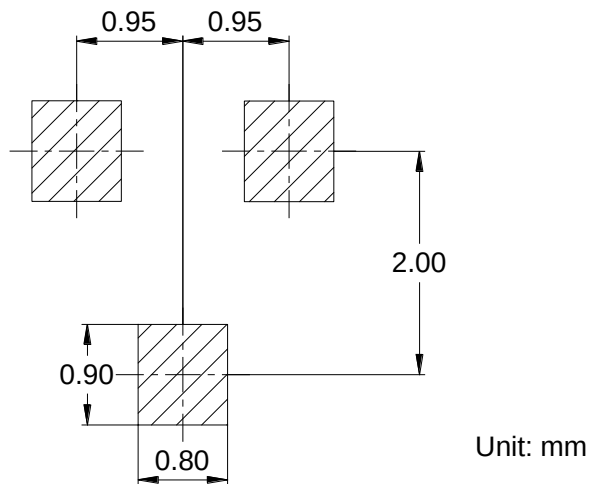
PACKAGE OUTLINE

Plastic surface mounted package

SOT-23



SOLDERING FOOTPRINT



PACKAGE INFORMATION

Device	Package	Shipping
TPESD1FLEX	SOT-23	3000 pcs / Tape & Reel