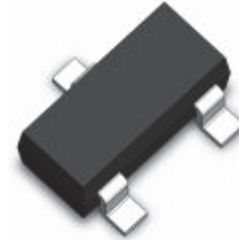
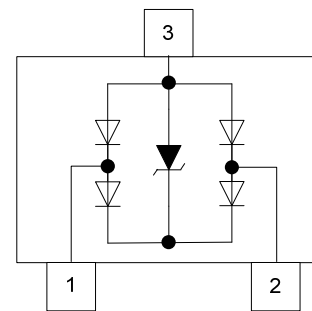


FEATURES

- ✧ 60 watts peak pulse power per line ($t_P=8/20\mu s$)
- ✧ Protects two I/O lines with uni-directional
- ✧ Low clamping voltage
- ✧ Ultra-low capacitance: $C_J=0.4pF$ typ.
- ✧ Working voltage:5V
- ✧ Low leakage current
- ✧ RoHS compliant
- ✧ Compliant to Halogen - free
- ✧ Suffix "-Q1" for AEC-Q101



SOT-23



Pin Configuration

MAIN APPLICATIONS

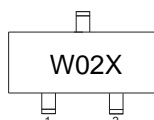
- ✧ USB 2.0 and USB 3.0
- ✧ HDMI 1.3 and HDMI 1.4
- ✧ SATA and eSATA
- ✧ DVI
- ✧ PCI Express
- ✧ Portable Electronics
- ✧ IEEE 1394

PROTECTION SOLUTION TO MEET

- ✧ IEC61000-4-2 (ESD) $\pm 20kV$ (air), $\pm 20kV$ (contact)
- ✧ IEC61000-4-4 (EFT) 40A (5/50ns)
- ✧ IEC61000-4-5 (lightning) 4A (8/20 μs)

MECHANICAL CHARACTERISTICS

- ✧ SOT-23 package
- ✧ Molding compound flammability rating: UL 94V-0
- ✧ Reel size: 7 inch
- ✧ Lead finish: lead free
- ✧ Marking code: W02X



X:Control Code

ABSOLUTE MAXIMUM RATINGS ($T_A=25^{\circ}\text{C}$, RH=45%-75%, unless otherwise noted)

Parameter	Symbol	Value	Unit
Peak pulse power dissipation on 8/20 μs waveform	P_{PP}	60	W
ESD per IEC 61000-4-2 (Air) ESD per IEC 61000-4-2 (Contact)	V_{ESD}	+/- 20 +/- 20	kV
Lead soldering temperature	T_L	260 (10 sec.)	$^{\circ}\text{C}$
Operating junction temperature range	T_J	-55 to +125	$^{\circ}\text{C}$
Storage temperature range	T_{STG}	-55 to +150	$^{\circ}\text{C}$

ELECTRICAL CHARACTERISTICS ($T_A=25^{\circ}\text{C}$)

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Reverse working voltage	V_{RWM}				5.0	V
Reverse breakdown voltage	V_{BR}	$I_T=1\text{mA}$ Any I/O pin to GND	6.0	7.7	9.0	V
Reverse leakage current	I_R	$V_{RWM}=5\text{V}$ Any I/O pin to GND			100	nA
Clamping voltage	V_C	$I_{PP}=1\text{A}$, $t_P=8/20\mu\text{s}$ Any I/O pin to GND		8.2	11	V
		$I_{PP}=4\text{A}$, $t_P=8/20\mu\text{s}$ Any I/O pin to GND		10.6	15	V
Junction capacitance	C_J	$V_R=0\text{V}$, $f=1\text{MHz}$ Any I/O pin to GND		0.4	0.65	pF
		$V_R=0\text{V}$, $f=1\text{MHz}$ Between any I/O pin		0.25	0.40	

RATINGS AND V-I CHARACTERISTICS CURVES ($T_A=25^\circ\text{C}$, unless otherwise noted)

FIG.1: V- I curve characteristics (Uni-directional)

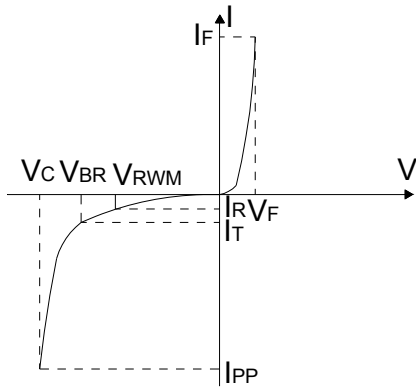


FIG.2: Pulse waveform (8/20 μs)

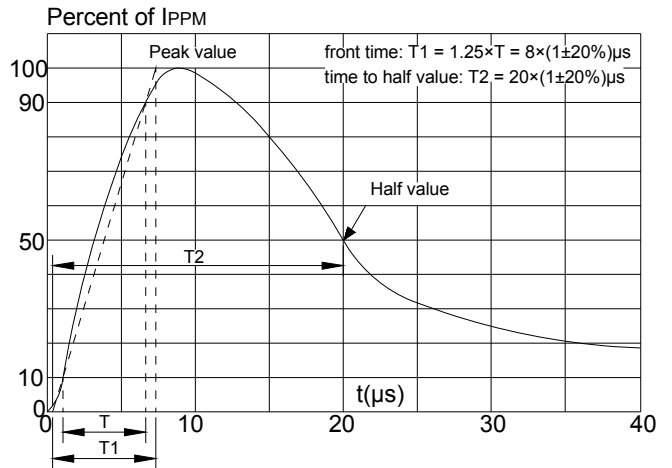


FIG.3: Pulse derating curve

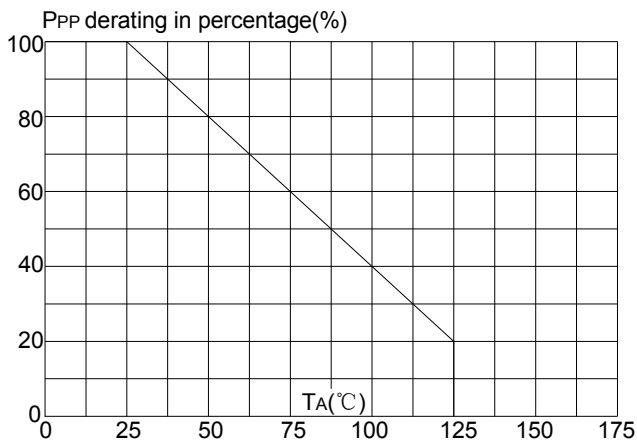
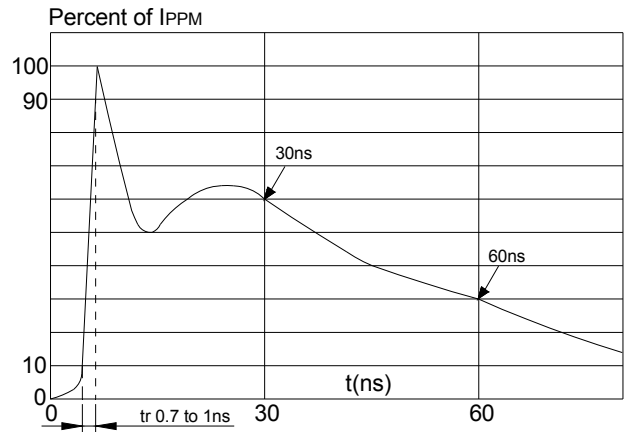
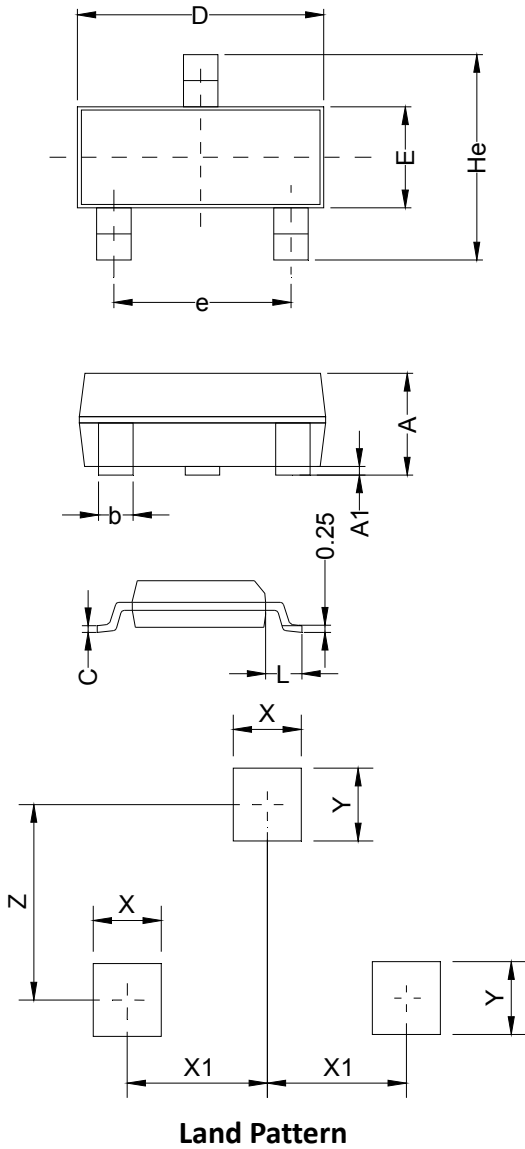


FIG.4: ESD clamping (20kV contact)



PACKAGE MECHANICAL DATA



Symbol	Millimeter		Inches	
	Min	Max	Min	Max
A	0.90	1.15	0.035	0.045
A1	0.00	0.14	0.000	0.006
b	0.25	0.50	0.010	0.020
C	0.07	0.25	0.003	0.010
D	2.80	3.00	0.110	0.118
e	1.80	2.00	0.071	0.079
E	1.20	1.40	0.047	0.055
L	0.55 REF		0.022 REF	
He	2.25	2.55	0.089	0.100
X	0.80		0.031	
X1	0.95		0.037	
Y	0.80		0.031	
Z	2.02		0.080	