



NXP 300 W TVS series PTVSxU1UPA in DFN2020-3

300 W surge protection in a leadless, flat 2 x 2 mm package

Protect the charger port in mobile devices and save PCB-space with NXP's new 300 W surge protection device in leadless DFN2020-3. This discrete solution offers superior electrical performance, a higher PCB design flexibility and easier routing than integrated solutions currently available.

FEATURES AND BENEFITS

- ▶ Six types from $V_{RWM} = 7.5$ to 26 V
- ▶ High surge rating: $P_{PPM} = 300$ W 10/1000 μ s pulse
- ▶ Very compact package: DFN2020-3 (2 x 2 x 0.62 mm)
- ▶ Low leakage current: down to 1 nA
- ▶ High ESD robustness: $V_{ESD} = 30$ kV (IEC61000-4-2)

Surge pulses from the power supply, e.g. via a car charger, are a severe threat for the charger port VBUS line of smart phones and other portables. Supply voltages of these chargers often exceed the 5V level – requiring high reverse standoff voltages.

The AEC-Q101 qualified NXP PTVSxU1UPA series, with reverse standoff voltages from 7.5 to 26 V, is ideally suited to protect the charger port in mobile devices against transient overvoltages.

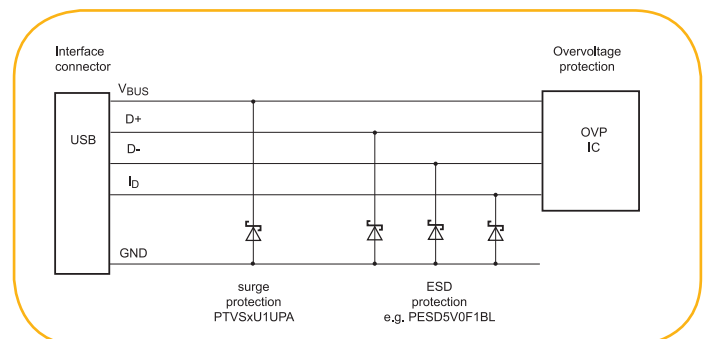


- ▶ Package info, including outline and soldering footprint: www.nxp.com/packages/SOT1061.html

The low leakage current of only 1 nA reduces the power consumption and helps extend the battery lifetime.

The PTVSxU1UPA series is a discrete solution that offers superior electrical performance, a higher PCB design flexibility and easier routing than array or integrated solutions currently available.

PTVSxxx application



PTVSxU1UPA series versus alternative solutions

	Discrete: NXP PTVSxU1UPA series + NXP dataline protection	Array: 3 datalines + 1 surge (Competitor)	Integrated OVP: OVP with surge protection
Application			
Electrical	<ul style="list-style-type: none"> $V_{RWM} = 7.5 - 26 \text{ V (} V_{BUS} \text{)}$ $P_{PPM} = 3000 \text{ W (} 8/20\mu\text{s pulse)}$ $C_D (V_{Line}) = \text{down to } 0.25 \text{ pF}$ 	<ul style="list-style-type: none"> $V_{RWM} = 12 \text{ V (} V_{BUS} \text{)} / 5 \text{ V (} V_{Line} \text{)}$ $P_{PPM} (V_{BUS}) = 2500 \text{ W (} 8/20\mu\text{s)}$ $C_D (V_{Line}) = 0.35 \text{ pF}$ 	<ul style="list-style-type: none"> • Not applicable
Performance	<ul style="list-style-type: none"> Small PCB area ✓ Customized electrical parameters ✓ Benchmark performance ✓ Easy PCB routing ✓ 	<ul style="list-style-type: none"> Small PCB area ✓ 	<ul style="list-style-type: none"> Small PCB area ✓ Customized electrical parameters (for datalines) ✓

PTVSxU1UPA series versus alternative solutions

Type	$V_{RWM} \text{ (V)}$	$V_{BR} \text{ min (V)}$	$V_{BR} \text{ max (V)}$	$I_{PPM} \text{ 10/1000 } \mu\text{s (A)}$	$V_{CL} \text{ 10/1000 } \mu\text{s (V)}$	$P_{PPM} \text{ 10/1000 } \mu\text{s (W)}$	Package name
PTVS7V5U1UPA	7.5	8.33	9.21	23.3	12.9	300	<p>DFN2020-3 (SOT1061) 2.0 x 2.0 x 0.62</p>
PTVS10VU1UPA	10	11.1	12.3	17.6	17	300	
PTVS12VU1UPA	12	13.3	14.7	15.1	19.9	300	
PTVS15VU1UPA	15	16.7	18.5	12.3	24.4	300	
PTVS18VU1UPA	18	20	22.1	10.3	29.2	300	
PTVS26VU1UPA	26	28.9	31.9	7	43	300	



Product Series Page

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