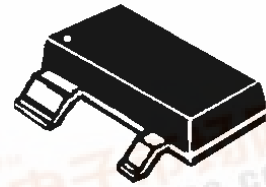




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# USB50403C thru USB50424C

## TVSarray™ Series



### DESCRIPTION (500 watt)

This 4 pin 1 line **bidirectional ULTRA LOW CAPACITANCE** array is designed for use in applications requiring board level protection from voltage transients caused by electrostatic discharge (ESD) as defined by IEC 1000-4-2, electrical fast transients (EFT) per IEC 1000-4-4 and effects of secondary lightning.

These arrays are used to protect 1 discrete line utilizing pins (1,4 signal and 2,3 ground). The S0T-143 product provides board level protection from static electricity and other induced voltage surges that can damage sensitive circuitry.

These TRANSIENT VOLTAGE SUPPRESSOR (TVS) Diode Arrays protect 3.3 Volt components such as DRAM's, SRAM's, CMOS, HCMOS, HSIC, and low voltage interfaces up to 24Volts.

### FEATURES

- Protects 3.3 up through 24V Components
- Protects 1 line bidirectional
- Provides electrically isolated protection
- SOT-143 Packaging
- **ULTRA LOW CAPACITANCE 3 pF**

### MAXIMUM RATINGS

- Operating Temperatures: -55°C to +150°C
- Storage Temperature: -55°C to +150°C
- Peak Pulse Power: 500 Watts (8/20 μsec, Figure 1)
- Pulse Repetition Rate: <.01%

### MECHANICAL

- Molded SOT-143 Surface Mount
- Weight: .035 grams (approximate)
- Body Marked with device marking code
- Pin #1 defined by DOT on top of package

### PACKAGING

- Tape & Reel EIA Standard 481-1-A
- 7 inch reel 3,000 pieces

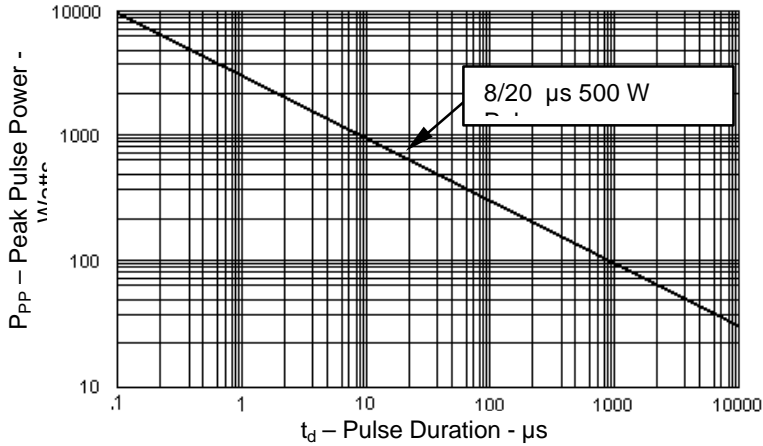
### ELECTRICAL CHARACTERISTICS @ 25°C Unless otherwise specified

PART NUMBER	DEVICE MARKING	STAND OFF VOLTAGE	BREAKDOWN VOLTAGE	CLAMPING VOLTAGE	CLAMPING VOLTAGE	STAND OFF CURRENT	CAPACITANCE (f=1 MHz)	TEMPERATURE COEFFICIENT OF V <sub>BR</sub>
		V <sub>WM</sub>	V <sub>BR</sub>	V <sub>C</sub>	V <sub>C</sub>			
		VOLTS	VOLTS	VOLTS	VOLTS			
		MAX	MIN	MAX	MAX	MAX	MAX	MAX
USB50403C	53	3.3	4	8	11	200	3	-5
USB50405C	55	5.0	6.0	10.8	13	40	3	1
USB50412C	512	12.0	13.3	19	26	1	3	18
USB50415C	515	15.0	16.7	25	32	1	3	11
USB50424C	524	24.0	26.7	44	57	1	3	28

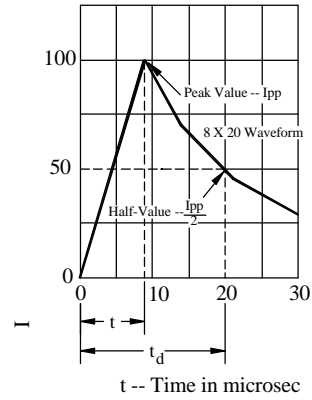
**NOTE:** Transient Voltage Suppression (TVS) product is normally selected based on its stand off Voltage V<sub>WM</sub>. Product selected voltage should be equal to or greater than the continuous peak operating voltage of the circuit to be protected.



### WAVE FORMS



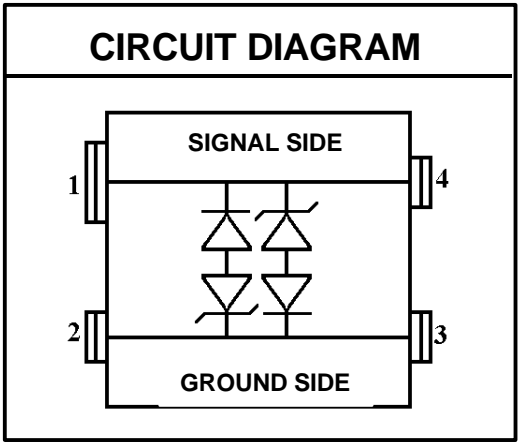
**FIGURE 1**  
Peak Pulse Power Vs Pulse Time



**FIGURE 2**  
Pulse Wave Form

### MOUNTING PAD SOT 143

	DIMENSIONS			
	INCHES		MM	
	MIN	MAX	MIN	MAX
A	.032	.040	0.80	1.00
A1	.040	.048	1.00	1.20
B	--	.057	--	1.44
C	--	.087	--	2.20
D	.075 BSC		1.90 BSC	
E	.067 BSC		1.70 BSC	
G	.032	.040	0.80	1.00
H	.134	.140	3.40	3.60



DIMENSION	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.070	0.080	1.78	2.03
B	0.047	0.055	1.20	1.40
C	0.030	0.037	0.77	0.94
C1	0.015	0.020	0.37	0.50
D	0.110	0.119	2.80	3.04
E	0.035	0.044	0.89	1.17
F	0.071	0.079	1.80	2.00
G	0.0006	0.006	0.013	0.05
H	0.003	0.007	0.085	0.17
I	0.018	0.023	0.45	0.60
J	0.083	0.093	2.10	2.50