

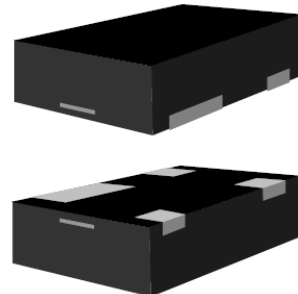


500 W, Non-Magnetic Low Capacitance Unidirectional TVS

**HALOGEN
FREE**

DESCRIPTION

This Transient Voltage Suppressor (TVS) is assembled in a non-magnetic QFN-143 package with a leadframe 100% free of iron. It has the same pinout and footprint as the SOT-143 package and is aimed at applications in MRI machines and other magnetic environments where the use of ferrous metals is not acceptable. The configuration gives protection to 1 unidirectional data or interface line. It is designed for use in applications where low capacitance protection is required at the board level from voltage transients caused by electrostatic discharge (ESD) as defined in IEC 61000-4-2, electrical fast transients (EFT) per IEC 61000-4-4 and the secondary effects of lightning. These TVS arrays have a peak power rating of 500 watts for an 8/20 μ s pulse (figure 1). With a capacitance of only 3 pF, this part can provide protection to very fast data lines including USB at 900 Mbits/sec.



QFN-143


Important: For the latest information, visit our website <http://www.microsemi.com>.

FEATURES

- Protects 1 unidirectional line
- Surge protection per IEC 61000-4-2 and IEC 61000-4-4
- Ultra low capacitance
- Low profile surface mount package
- RoHS compliant versions are available

Also available:

**Bidirectional
(QFN-143)**

 [USBQNM50403Ce3 –
USBQNM50424Ce3](#)

APPLICATIONS / BENEFITS

- EIA RS485 data rates: 5 Mbps
- 10 Base-T Ethernet
- USB data rate 900 Mbps
- Non-magnetic for MRI applications

MAXIMUM RATINGS @ 25 °C unless otherwise noted

Parameters/Test Conditions	Symbol	Value	Unit
Storage Temperature	T _{STG}	-55 to +150	°C
Junction Temperature	T _J	-55 to +125	°C
Peak Pulse Power Dissipation with a 10/1000 μ s waveform (with a duty factor of 0.01%)	P _{PP}	500	W
Solder Temperature @ 10 s		260	°C

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GRAPHS

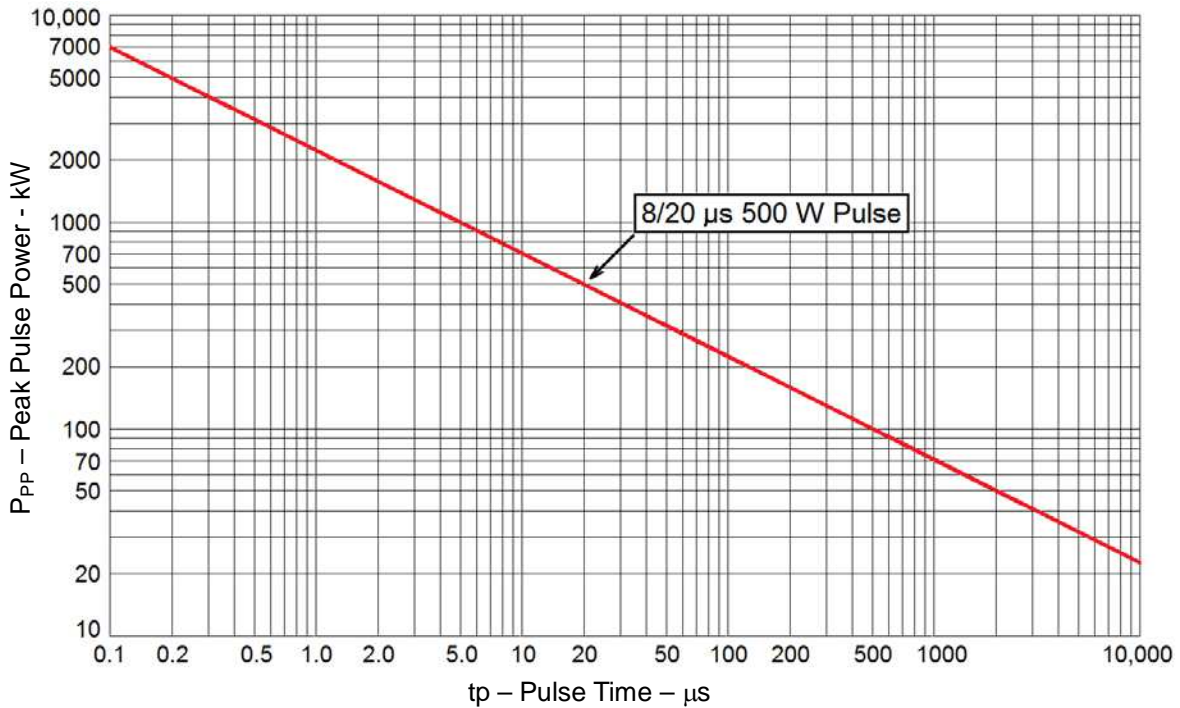


FIGURE 1
Peak Pulse Power vs. Pulse Time

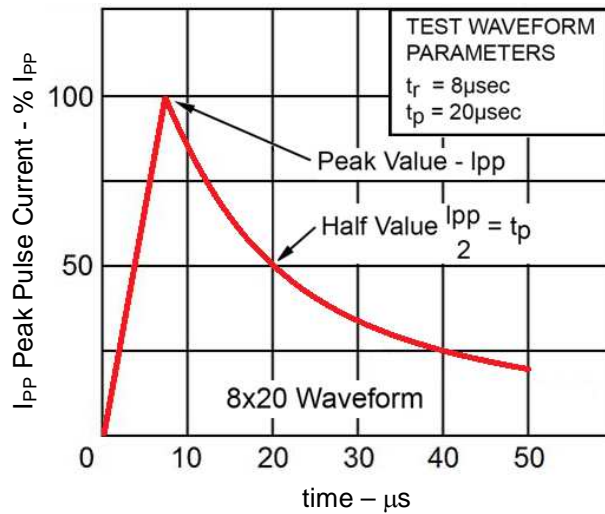
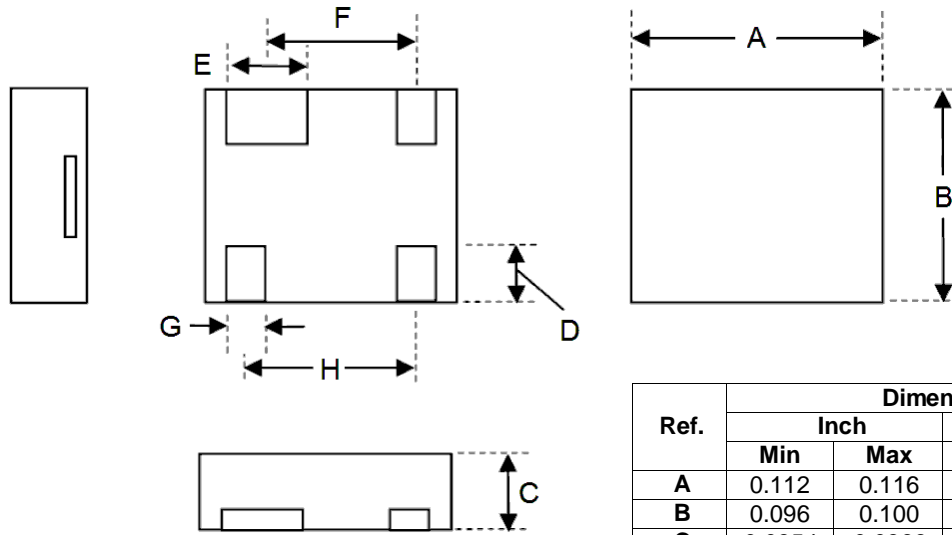
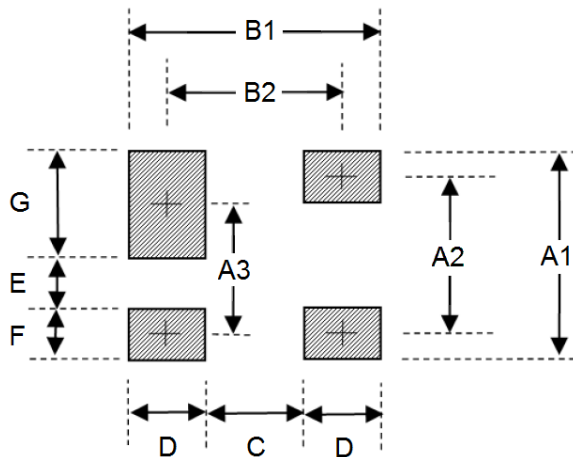


FIGURE 2
Pulse Waveform

PACKAGE DIMENSIONS


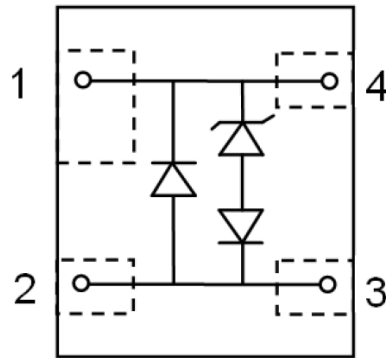
Ref.	Dimensions			
	Inch		Millimeters	
	Min	Max	Min	Max
A	0.112	0.116	2.85	2.95
B	0.096	0.100	2.45	2.55
C	0.0354	0.0366	0.900	0.930
D	0.020	0.024	0.50	0.60
E	0.031 NOM		0.80 NOM	
F	0.069 NOM		1.75 NOM	
G	0.018 NOM		0.45 NOM	
H	0.076 NOM		1.92 NOM	

PAD LAYOUT


Ref.	Dimensions	
	Inch	Millimeters
	Nominal	Nominal
A1	0.112	2.85
A2	0.079	2.00
A3	0.071	1.80
B1	0.108	2.75
B2	0.075	1.90
C	0.041	1.05
D	0.033	0.85
E	0.032	0.80
F	0.033	0.85
G	0.047	1.20

See schematic on next page

SCHEMATIC



Seen from above