Features

- 400 watts Peak Pulse Power (10/1000 μs)
- Response Time is Typically < 1 ns
- Excellent Clamping Capability

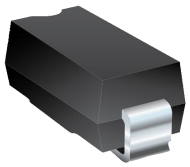
Applications

- Power lines
- Automotive and Telecommunication
- Computers &Consumer Electronics
- Industrial Electronics

VP4SMA14CA ---- SURFACE MOUNT TVS Diodes

General Information

VIC offers Transient Voltage Suppressor Diodes for surge and ESD protection applications, in compact chip package DO-214AC (SMA) size format. The Transient Voltage Suppressor series offers a choice of Working Peak Reverse Voltage from 5 V up to 495 V and BreakdownVoltage up to 550 V.
Typical fast response times are less than 1.0 picoseconds for unidirectional devices and less than 5.0 picoseconds for bidirectional devices from 0 V to Minimum Breakdown Voltage.



Absolute Maximum Ratings

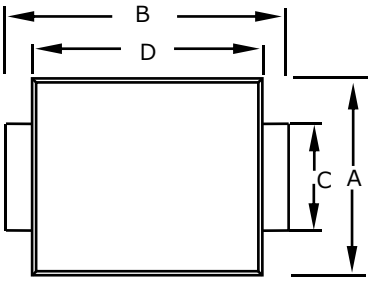
Parameter	Symbol	Value	Unit
Peak pulse power dissipation at 10/1000μs waveform	P_{PK}	400	W
Peak Forward Surge Current 8.3ms single half sine-wave super	I_{FSM}	80	A
Maximum Operating temperature	T_{OPER}	-55 to +155	℃
Maximum Storage temperature	T_{STG}	-55 to +175	℃
Maximum lead temperature for soldering during 10s	T_L	260	℃

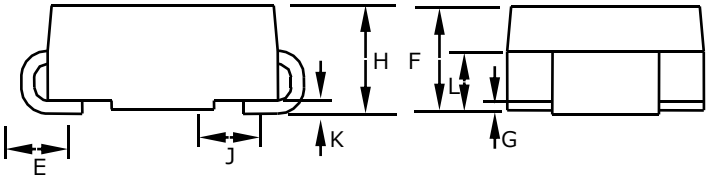
Electrical Characteristics (@ T_A = 25 °C Unless Otherwise Noted)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Units
Reverse Working Voltage	V_{RWM}	Any I/O pin to GND	---	---	14.0	V
Reverse Breakdown Voltage	V_{BR}	Any I/O pin to GND It=1mA	15.60	---	17.20	V
Positive Clamping Voltage	V_C	Surge waveform: 10/1000μs	---	---	23.2	V
Reverse Leakage Current	I_L	V_{RWM}=26V ; T=25°C	---	---	1.00	uA
Peak pulse Current	I_{pp}	Surge waveform: 10/1000μs	---	---	17.3	A

VP4SMA14CA ---- SURFACE MOUNT TVS Diodes

Product Dimensions

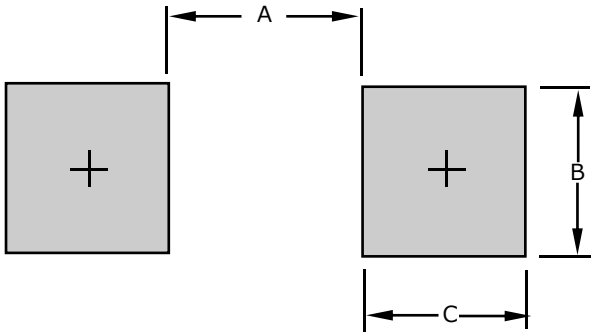




Dimension	SMA （DO-214AC）
A	2.10-2.70 (0.08-0.11)
B	4.70-5.30 (0.180-0.200)
C	1.20-1.70 (0.05-0.06)
D	4.22-4.70 (0.166-0.185)
E	0.91-1.42 (0.036-0.056)
F	1.85-2.10 (0.073-0.087)
G	0.05-0.20 (0.002-0.008)
H	1.95-2.40 (0.077-0.094)
J	0.80-1.35 (0.030-0.053)
K	0.20-0.35 (0.008-0.014)
L	0.99-1.24 (0.039-0.049)

DIMENSIONS: MM / (INCHES)

Recommended PCB Footprint



Dimension	SMA （DO-214AC）
A	2.70 (0.106)
B	2.10 (0.083)
C	1.27 (0.050)

DIMENSIONS: MM / (INCHES)

How to Order

VP4 SMA 14 CA

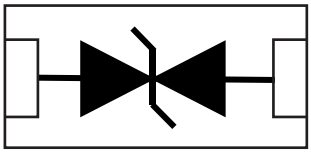
VIC TVS Series
4=400w

Package
SMA

Working Peak Reverse Voltage
14=14 V_{BWM} (Volts)

Suffix
CA= Bidirectional Device

Block Diagram



Bi-directional

Performance Graphs

Figure 1: Peak Pulse Power Rating Curve

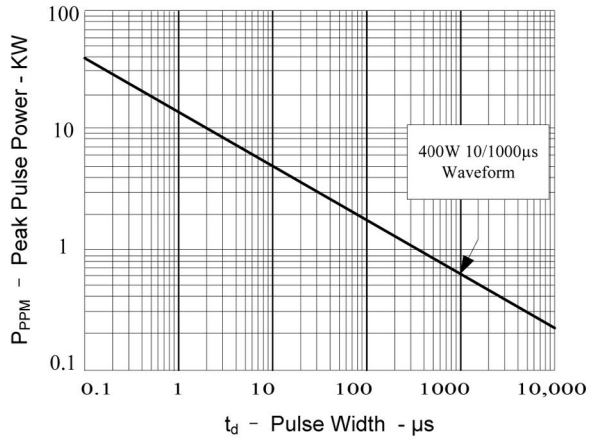


Figure 2: Pulse Derating Curve

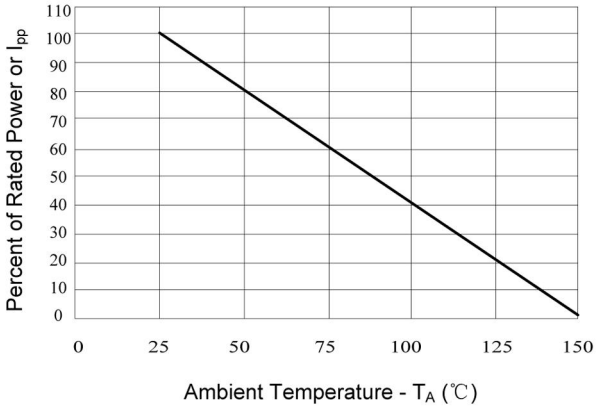


Figure 3: Pulse Waveform

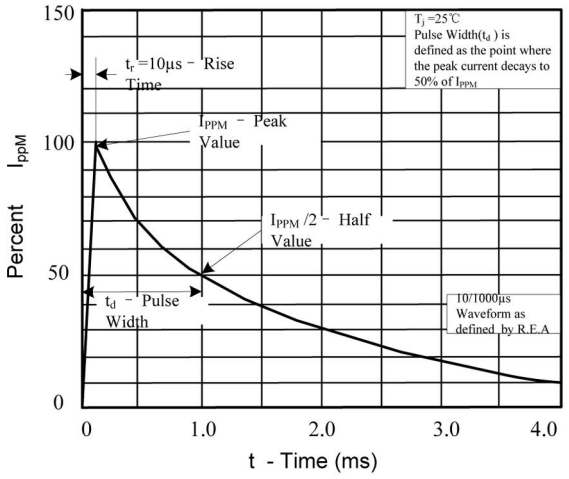


Figure 4: Typical Junction Capacitance

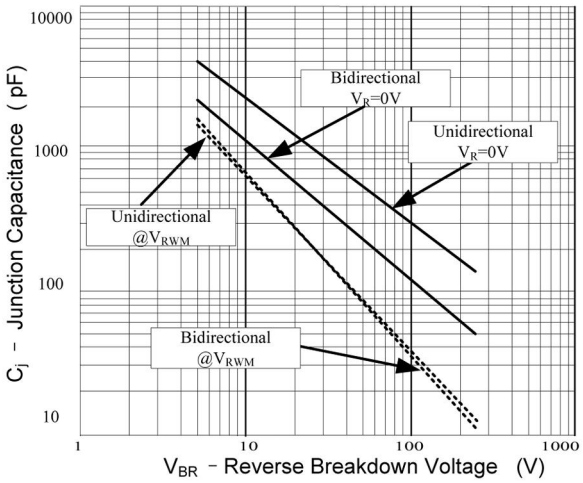


Figure 5: Steady State Power Dissipation Derating Curve

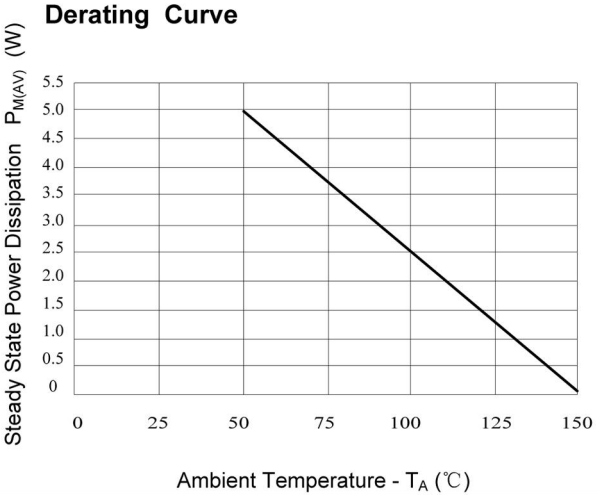
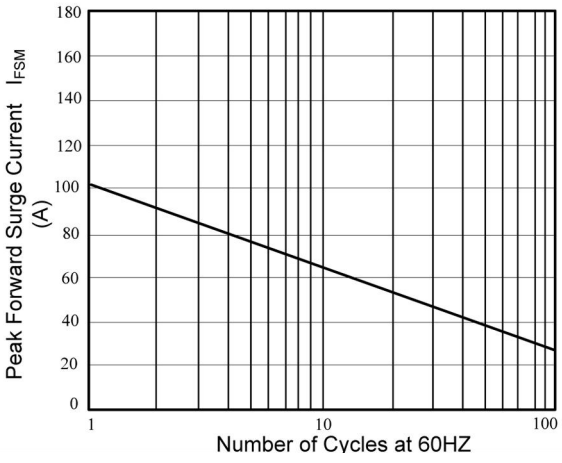
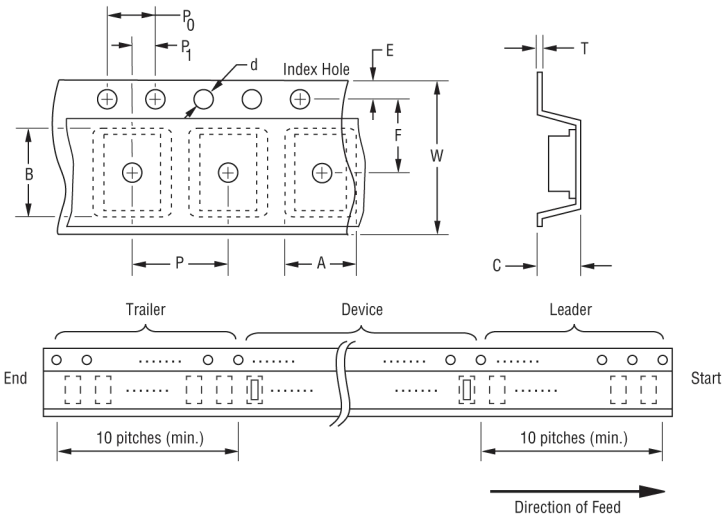


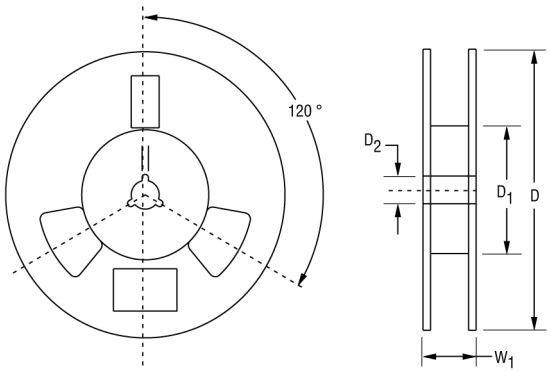
Figure 6: Maximum Non-Repetitive Forward Surge Current Only Unidirectional



Packaging Information

Item	Symbol	SMA（DO-214AC）
Carrier Width	A	2.90±0.05 (0.114±0.002)
Carrier Length	B	5.50±0.10 (0.217±0.004)
Carrier Depth	C	2.26±0.20 (0.089±0.008)
Sprocket Hole	d	1.50±0.10 (0.061±0.004)
Reel Outside Diameter	D	330 (12.992)
Reel Inner Diameter	D1	50.0 (1.969)
Feed Hole Diameter	D2	13.0±0.20 (0.512±0.008)
Sprocket Hole Position	E	1.75±0.10 (0.069±0.004)
Punch Hole Position	F	5.50±0.05 (0.217±0.002)
Punch Hole Pitch	P	4.00±0.10 (0.157±0.004)
Sprocket Hole Pitch	P0	4.00±0.10 (0.157±0.004)
Embossment Center	P1	2.00±0.05 (0.079±0.002)
Overall Tape Thickness	T	0.30±0.10 (0.012±0.004)
TapeWidth	W	12.00±0.30 (0.472±0.012)
ReelWidth	W1	18.4 (0.724)
Quantity per Reel	--	5,000





DIMENSIONS: MM / (INCHES)