

TQEMN11224V

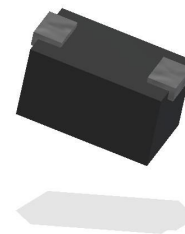
Low-Capacitance Bidirectional Micro Packaged TVS Diodes for ESD Protection

The TQEMN11224V is 24V bi-direction TVS technology to protect voltage sensitive components from ESD. Excellent clamping capability, low leakage, and fast response time provide best in class protection on designs that are exposed to ESD. Because of its small size, it is suited for use in cellular phones, MP3 players, digital cameras and many other portable applications where board space comes at a premium.

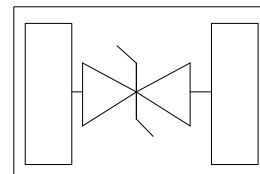
The TQEMN11224V has been specifically designed to protect sensitive components which are connected to data and transmission lines from overvoltage caused by ESD(electrostatic discharge), and EFT (electrical fast transients).

Features

- Peak Power Dissipation –50 W (8 x 20 us Waveform)
- Stand-off Voltage: 24 V
- Low capacitance (<18.0pF) for high-speed interfaces
- Replacement for MLV (0402)
- Protects I/O Port
- Low Clamping Voltage
- Low Leakage
- Low Capacitance
- Response Time is < 1 ns
- Meets MSL 1 Requirements
- ROHS compliant
- Solid-state Punch-Through TVS Process technology
- PAN JING technology



DFN1006



Main applications

- Serial and Parallel Ports
- Notebooks, Desktops, Servers
- Projection TV
- Cellular handsets and accessories
- Portable instrumentation
- Peripherals
- MP3 Players

Protection solution to meet

- IEC61000-4-2 (ESD) ±30kV (air), ±30kV (contact)
- IEC61000-4-5 (Lightning) 6A (8/20µs)

Ordering Information

Device	Package	Marking	Qty per Reel	Reel Size
BVSEMN11224V	DFN1006-2L	T7	10000	7 Inch

Maximum ratings (Tamb=25°C Unless Otherwise Specified)

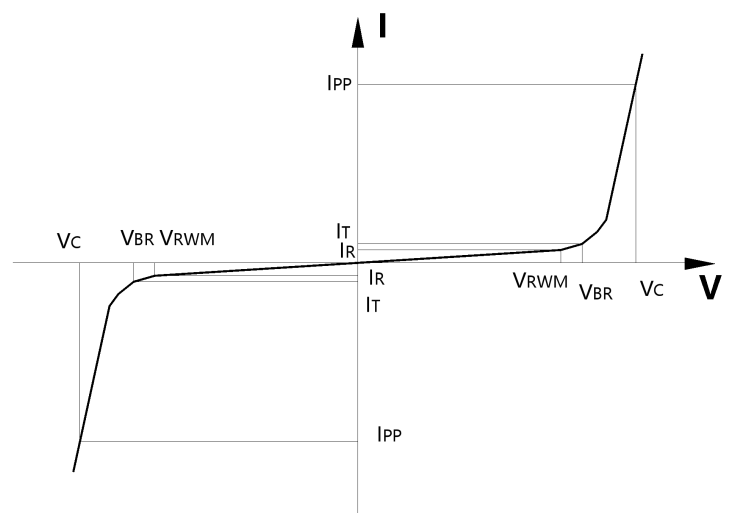
Parameter	Symbol	Value	Unit
Peak Pulse Power (tp=8/20μs waveform)	P _{PPP}	50	Watts
ESD Rating per IEC61000-4-2:	Contact	30	KV
	Air	30	
Lead Soldering Temperature	T _L	260 (10 sec.)	°C
Operating Temperature Range	T _J	-55 ~ 150	°C
Storage Temperature Range	T _{STG}	-55 ~ 150	°C
Lead Solder Temperature – Maximum (10 Second Duration)	T _L	260	°C

Junction capacitance is measured in VR=0V, F=1MHz

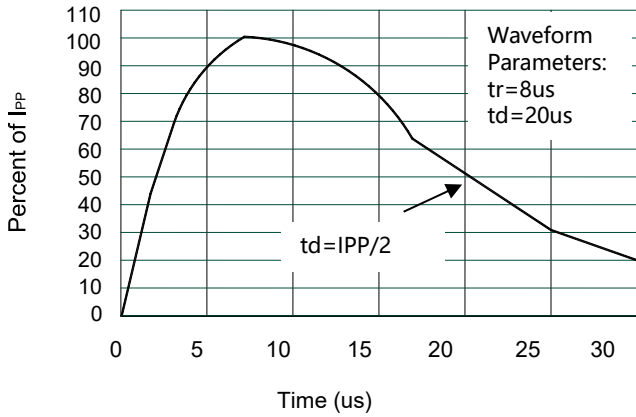
Electrical characteristics (Tamb=25°C Unless Otherwise Specified)

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Units
V _{RWM}	Reverse Working Voltage				24	V
V _{BR}	Reverse Breakdown Voltage	I _T = 1mA,	26.7			V
I _R	Reverse Leakage Current	V _{RWM} = 24V,		0.1		μA
V _C	Clamping Voltage	I _{PP} = 6A, tp =8/20μs,			57	V
C _J	Junction Capacitance	V _R = 0V, f = 1MHz,		18		pF

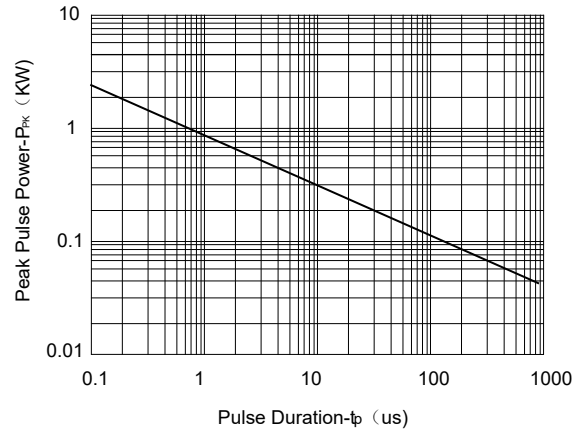
Symbol	Parameter
V _{RWM}	Working Peak Reverse Voltage
V _{BR}	Breakdown Voltage @ I _T
V _C	Clamping Voltage @ I _{PP}
I _T	Test Current
I _{RM}	Leakage current at V _{RWM}
I _{PP}	Peak pulse current
C _O	Off-state Capacitance
C _J	Junction Capacitance



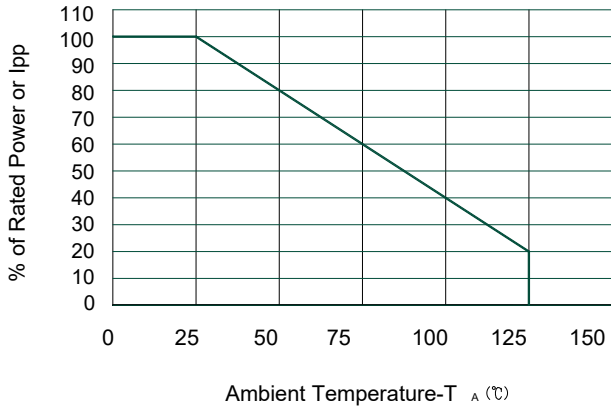
Typical electrical characterist applications



Pulse Waveform



Non-Repetitive Peak Pulse Power vs. Pulse Time



Power Derating Curve

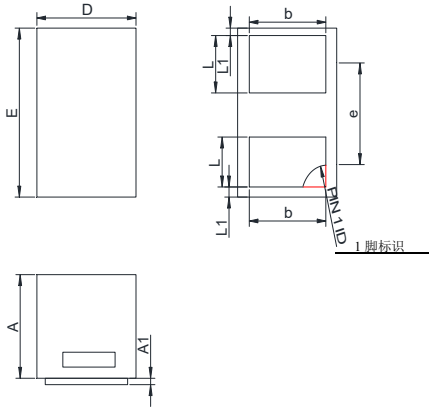
Package Information

DFN-1006

Mechanical Data

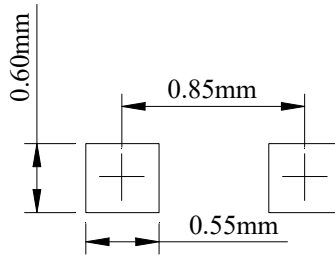
Case:DFN1006

Case Material: Molded Plastic. UL Flammability

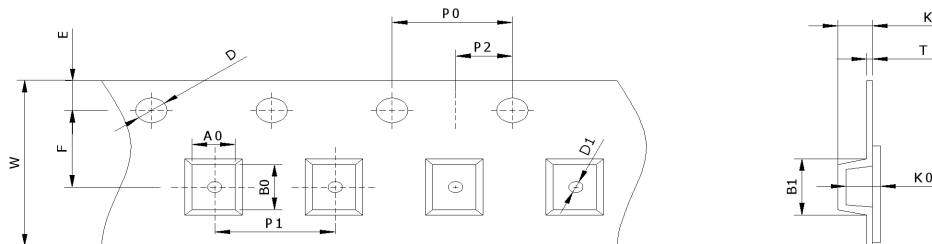


DIM	Millimeters		Inches	
	Min	Max	Min	Max
A	0.30	0.50	0.012	0.020
A1	0.00	0.05	0.000	0.002
D	0.55	0.65	0.022	0.026
E	0.95	1.05	0.037	0.041
b	0.25	0.60	0.010	0.024
e	0.65TYP		0.026TYP	
L	0.15	0.35	0.006	0.014
L1	0.05REF		0.002REF	

Recommended Pad outline



DFN1006 Reel Dim



Package	Chip Size (mm)	Pocket Size B0×A0×K0(mm)	Tape Width	Reel Diameter	Quantity Per Reel	P0	P1
DFN1006	1.0×0.6×0.50	1.10×0.70×0.60	8mm	178mm(7")	5000/10000	4mm	4/2mm
D0	D1	E	F	K	T	W	
1.5mm	0.5mm	1.75mm	3.5mm	0.55mm	0.2mm	8mm	



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