

## TQEHL2X24V5 Series

High Power TVS Diode

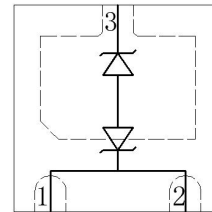
### ● Description

The TQEHL2X24V5 is a high power TVS, utilizing leading monolithic silicon technology to provide fast response time and low ESD clamping voltage, making this device an ideal solution for protecting voltage sensitive lines. The TQEHL2X24V5 Series complies with the IEC 610002 (ESD) standard with  $\pm 30\text{kV}$  air and  $\pm 30\text{kV}$  contact discharge. It is assembled into a 3pin DFN20203 package. The leads are finished with NiPdAu. Each device will protect one line. The combination of small size, and high surge capability makes them ideal for use in applications such as cellular phones, LCD displays, USB, and multimedia card interfaces.

### ● Feature

- 2000W, 5000W peak pulse power (TP = 8/20 $\mu\text{s}$ )
- DFN2020 Package
- Working voltage: 4.5V
- Low clamping voltage
- Low capacitance
- RoHS compliant transient protection for high speed data lines to IEC61000-4-2(ESD) $\pm 30\text{kV}$ (air), $\pm 30\text{kV}$ (contact)

### ● PIN configuration



DFN2020-3L

### ● Applications

- DVI & HDMI Port Protection
- Serial and Parallel Ports
- Projection TV
- Notebooks, Desktops, Server
- Solid-state Punch-Through TVS Process technology Portable instrumentation

### ● Mechanical data

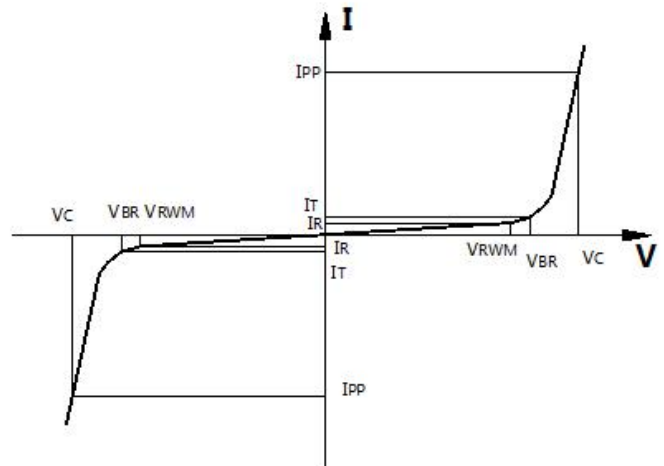
- Lead finish: 100% matte Sn(Tin)
- Mounting position: Any
- Power Supply Protection
- Industrial Application

## Ordering Information

Device	Package	Qty per Reel	Reel Size
TQEHL2X24V5	DFN2020-3L	3000	7 Inch

## ● Electronic Parameter

Symbol	Parameter
$V_{RWM}$	Peak Reverse Working Voltage
$I_R$	Reverse Leakage Current @ $V_{RWM}$
$V_{BR}$	Breakdown Voltage @ $I_T$
$I_T$	Test Current
$I_{PP}$	Maximum Reverse Peak Pulse Current
$V_C$	Clamping Voltage @ $I_{PP}$
$P_{PP}$	Peak Pulse Power
$C$	Junction Capacitance



## ● Absolute maximum rating @TA=25°C

Symbol	Parameter	Value	Units
$P_{PP}$	Peak Pulse Power (8/20 $\mu$ S)	2000, 5000W	W
$T_{STG}$	Storage Temperature	-55/+150	°C
$T_J$	Operating Temperature	-55/+150	°C

## ● Electrical Characteristics @TA=25°C

Device	Marking	$V_{RWM}$ (V)	$I_R@$ $V_{RWM}$ ( $\mu$ A)	$V_{BR@}$ 1mA (Volts)	$V_{Cl}$ @50A (V)	$I_{PP@8/20}$ $\mu$ s (Amps)	Capacitance @ $V_R=0V, 1MHz$ (pF)	$P_{Pk}$ (W)
				Min	Max	Typ		
TQEHL2124V5	4.5H	4.5	1	5	5	180	800	2000
TQEHL2224V5	4.5H	4.5	1	5	6	350	800	5000

- **Typical Performance Characteristics**

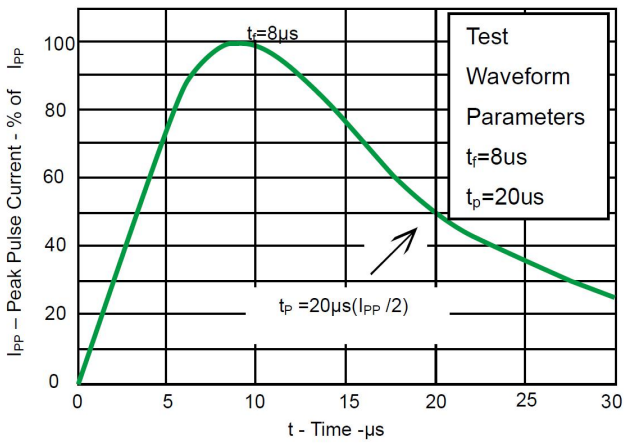


Fig 1. Pulse Waveform

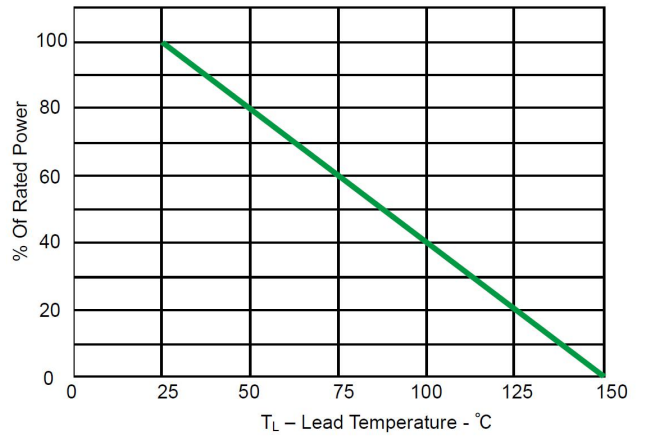
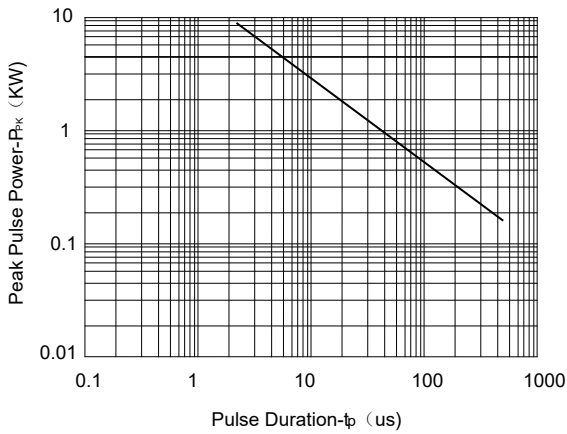


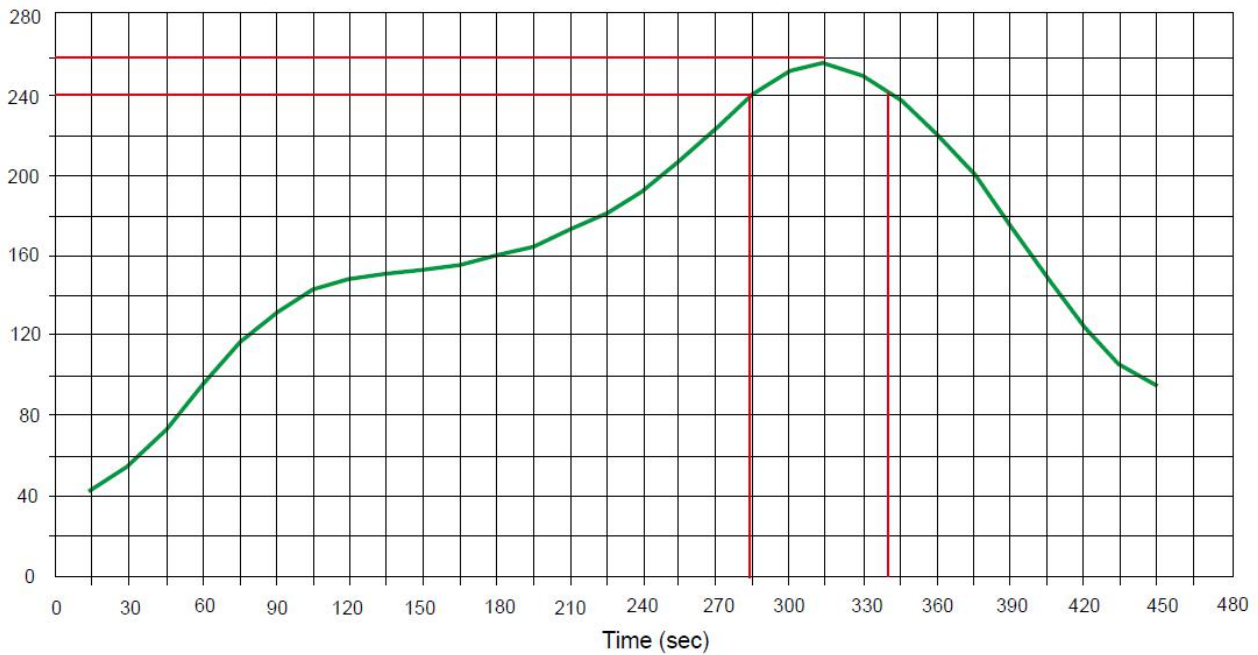
Fig 2. Power Derating Curve



Non-Repetitive Peak Pulse Power vs. Pulse Time

## ● Solder Reflow Recommendation

Peak Temp=257°C, Ramp Rate=0.802deg. °C/sec

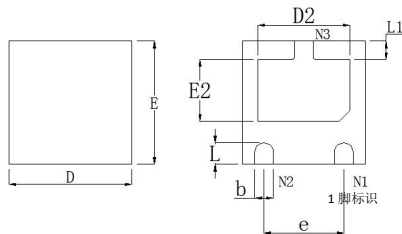


## ● Package Information

### Mechanical Data

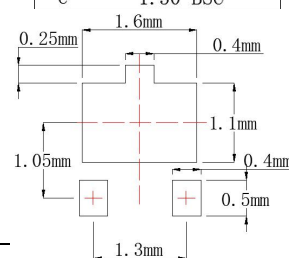
Case: DFN2020

Case Material: Molded Plastic. UL Flammability



DIM	Millimeters		
	Min	Nom	Max
A	0.50	0.55	0.60
A1	0.00	-	0.05
A3	0.15 REF.		
D	1.95	2.00	2.05
E	1.95	2.00	2.05
b	0.25	0.30	0.35
L	0.30	0.35	0.40
L1	0.25	0.30	0.35
D2	1.35	1.50	1.60
E2	0.85	1.00	1.10
e	1.30 BSC		

### Recommended Pad outline



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