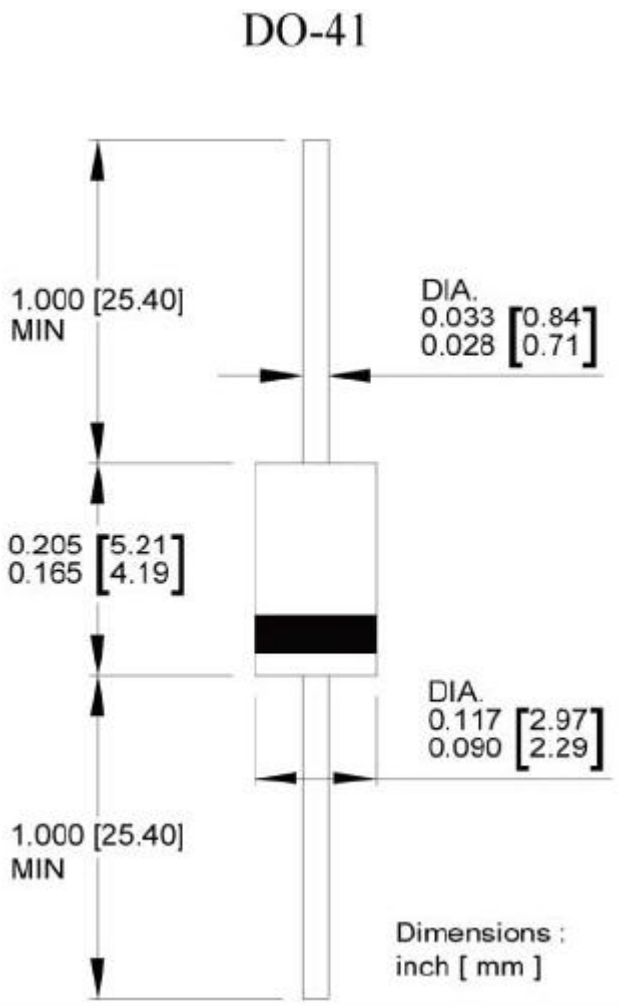
# P4KE Transient Voltage Suppressor Diode Series

## General Information

The P4KE series is designed to protect voltage sensitive components from high voltage, high energy transients. They have excellent clamping capability, high surge capability, low zener impedance and fast response time. The P4KE series is supplied in YINT Semiconductor's exclusive, cost-effective, highly reliable and is ideally suited for use in communication systems, automotive, numerical controls , process controls, medical equipment, business machines, power supplies and many other industrial/consumer Applications.

Bipolar




## Features

- Glass passivated chip
- 400W peak pluse power capability with a 10/1000 μ s waveform,rapetitive rate(duty cycle):0.01%
- Low leakage
- Uni and Bidirectional unit
- Excellent clamping capability
- Very fast response time
- RoHS compliant

## Mechanical Data

- Case:Molded plastic
- Epoxy:UL 94V-0 rate flame retardant
- Lead: Solderable Per MIL-STD-202,method 208 guranteed
- Polarity:Color band denotes cathode end except

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

| Parameter | Symbol | Value | Unit |
|---|---|---|---|
| Peak pulse power dissipation with a 10/1000 μs waveform | $P_{PK}$ | 400 | Watts |
| Peak pulse current with a 10/1000 μs waveform | $I_{FSM}$ | See next table | Amps |
| Power dissipation on infinite heat sink at $T_L$= 75 °C | $P_D$ | 1 | Watts |
| Peak forward surge current 8.3 ms single half sine-wave | $I_{FSM}$ | 40 | Amps |
| Instantaneous forward voltage at 100 A for Unidirectional only | $V_F$ | 3.5/5.0 | V |
| Operating junction and storage temperature range | $T_J$ ,$T_{STG}$ | -55 to +150 | °C |

Notes :

(1) Non-repetitive current pulse, per fig.5 and derated above $T_A$ = 25 °C per fig. 2

(2) Measured 8.3 ms single half sine-wave or equivalent square wave, duty cycle = 4 pulses per minute maximum

(3) $V_F$<3.5V for devices of $V_{BR}$< 200V and $V_F$ < 5.0V for devices of $V_{BR}$> 201V.

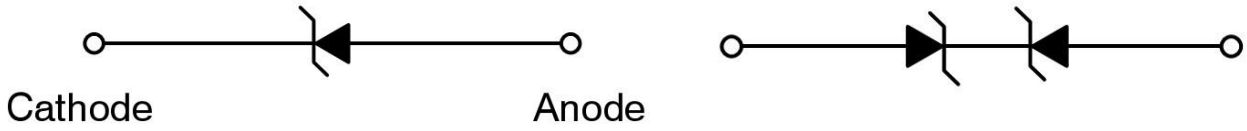


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## Electrical Characteristics

| Part Number (Bi) | Part Number (Uni) | Reverse Stand off Voltage $V_R$ (Volts) | Breakdown Voltage $V_{BR}$ (Volts)@$I_T$ | | Test Current $I_T$(mA) | Maximum Reverse Leakage $I_R$ @ $V_R$(μA) | Maximum Peak Pulse Current I pp (A) | Maximum Clamping Voltage $V_C$ @ $I_{pp}$(V) |
|---|---|---|---|---|---|---|---|---|
| | | | Min .V | Max .V | | | | |
| P4KE33CA | P4KE33A | 28.2 | 31.35 | 34.65 | 1 | 5 | 8.75 | 45.7 |

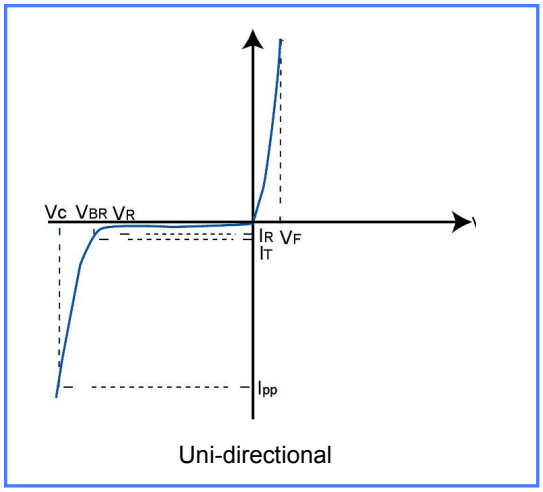
## Functional Diagram



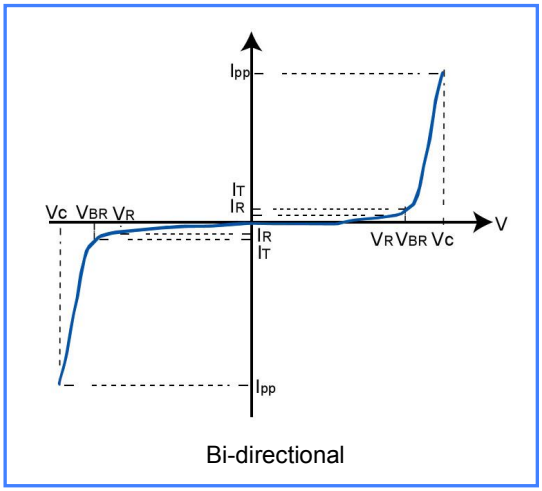

Uni-directional

Bi-directional

## I-V Curve Characteristics




Uni-directional




Bi-directional

| Symbol | Parameter |
|---|---|
| $I_{PP}$ | Maximum Reverse Peak Pulse Current |
| $V_C$ | Clamping Voltage @ $I_{PP}$ |
| $V_{RWM}$ | Working Peak Reverse Voltage |
| $I_R$ | Maximum Reverse Leakage Current @$V_{RWM}$ |
| $V_{BR}$ | Breakdown Voltage @ $I_T$ |
| $I_T$ | Test Current |



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## Rating & Characteristic Curves

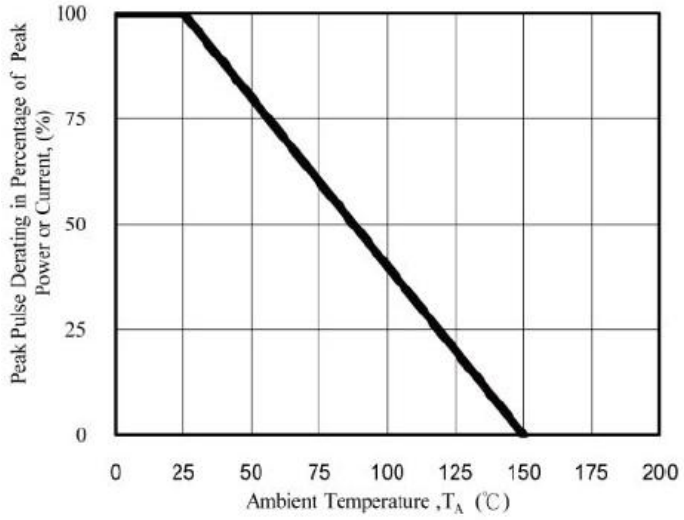



Fig. 1 - Pulse Derating Curve

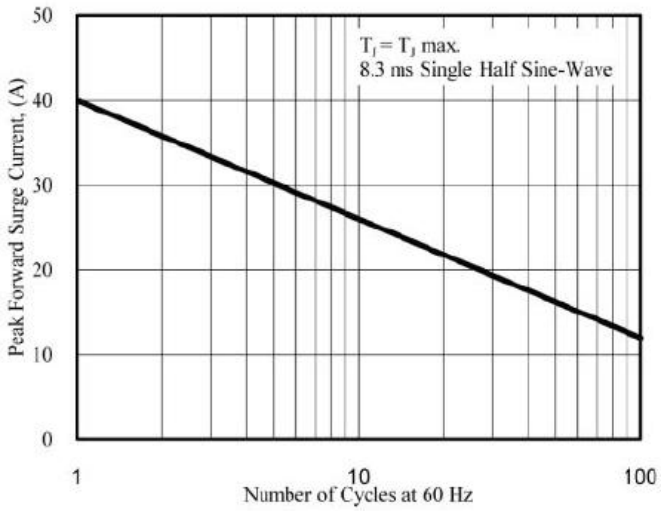



Fig. 2 - Maximum Non-Repetitive Surge Current

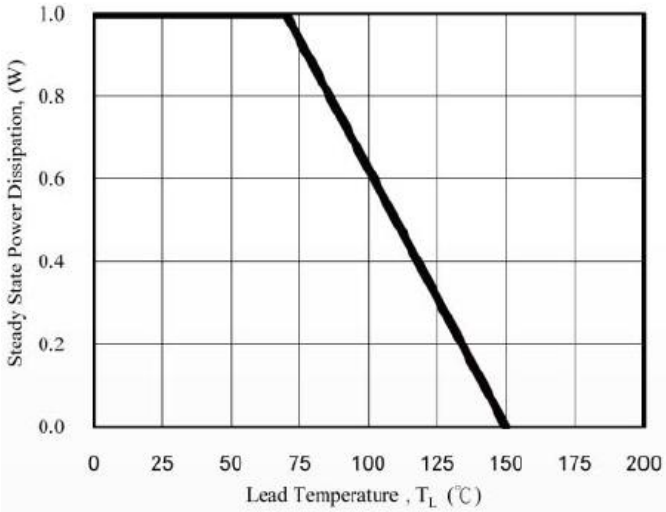



Fig. 3 - Steady State Power Derating Curve

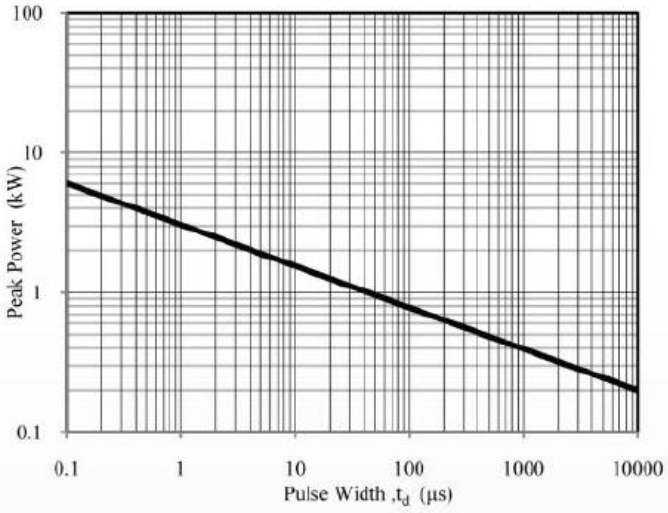



Fig. 4 - Peak Pulse Power Rating Curve



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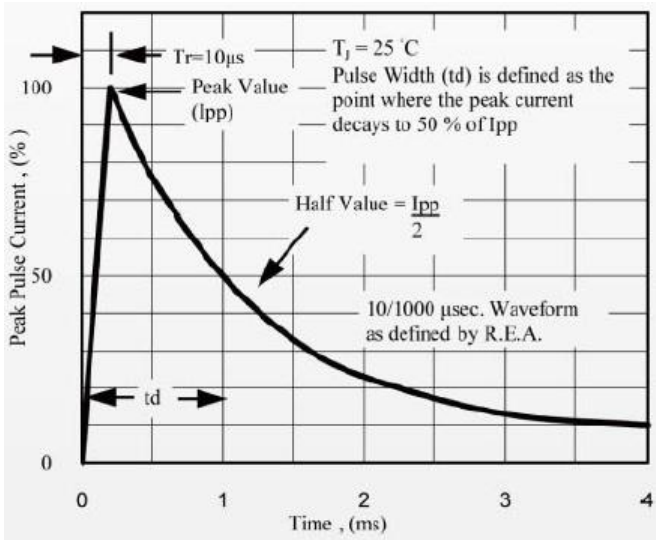



Fig. 5 - Pulse Waveform

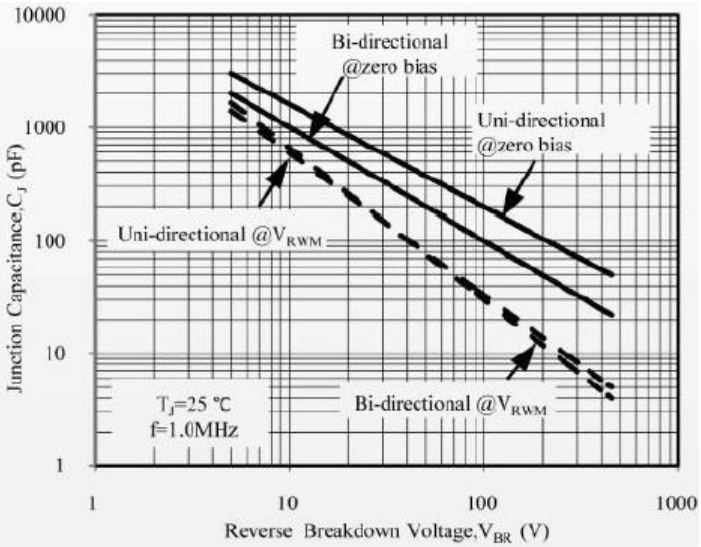



Fig. 6 - Typical Junction Capacitance

## Disclaimer

Specifications are subject to change without notice.

The device characteristics and parameters in this data sheet can and do vary in different applications and actual device performance may vary over time.

Users should verify actual device performance in their specific applications.



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