# PXXXLAL Series TSS

## Description

PXXXLAL series thyristors are a type of semiconductor component. They are designed in applications, such as modems, telephones, line cards, answering machines, FAX machines, SLICs, T1/E1, xDSL, PBXs and more.

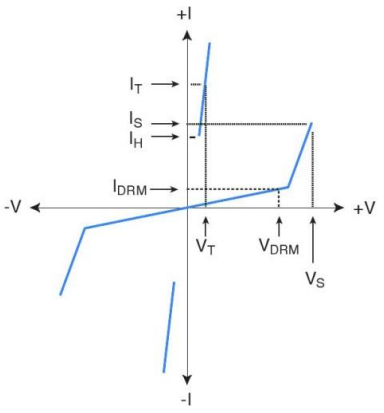
## Features

- Case: DO-15
- Excellent capability of absorbing transient surge
- Quick response to surge voltage (ns Level)
- Eliminates overvoltage caused by fast rising transients
- Moisture sensitivity level: Level 1
- Fails short circuit when surged in excess of ratings
- Non degenerative
- IEC61000-4-2 (ESD) ±30kV (air), ±30kV (contact).

## Functional Diagram

## Electrical Parameters

| Parameter | Definition |
|---|---|
| $V_{DRM}$ | Peak Off-state Voltage – maximum voltage that can be applied while maintaining off state |
| $V_S$ | Switching Voltage – maximum voltage prior to switching to on state |
| $V_T$ | On-state Voltage – maximum voltage measured at rated on-state current |
| $I_{DRM}$ | Leakage Current – maximum peak off-state current measured at VDRM |
| $I_S$ | Switching Current – maximum current required to switch to on state |
| $I_T$ | On-state Current – maximum rated continuous on-state current |
| $I_H$ | Holding Current – minimum current required to maintain on state |
| $C_O$ | Off-state Capacitance – typical capacitance measured in off state |
| $I_{PP}$ | Peak Pulse Current – maximum rated peak impulse current |




## Thermal Considerations

| Parameter | Symbol | Value | Unit |
|---|---|---|---|
| Operating Temperature | $T_J$ | -40 to +125 | °C |
| Storage Temperature | $T_{STG}$ | -60 to +150 | °C |
| Junction to free air thermal resistance | $R_{\Theta JA}$ | 120 | °C/ W |

## Characteristics (T =25°C unless otherwise noted)

| Part Number | $I_{DRM}$@$V_{DRM}$ | | $V_S$①@$I_S$ | | $V_T$@$I_T$ | | $I_H$ | $C_O$② |
|---|---|---|---|---|---|---|---|---|
| | μ A | V | V | mA | V | A | mA | pF |
| | MAX. | | MAX. | MAX. | MAX. | MAX. | MIN. | MAX. |
| P0080LAL | 1 | 6 | 15 | 800 | 4 | 2.2 | 30 | 35 |
| P0220LAL | 1 | 18 | 30 | 800 | 4 | 2.2 | 25 | 80 |
| P0300LAL | 1 | 25 | 40 | 800 | 4 | 2.2 | 25 | 80 |
| P0640LAL | 1 | 58 | 77 | 800 | 4 | 2.2 | 120 | 40 |
| P0720LAL | 1 | 65 | 87 | 800 | 4 | 2.2 | 120 | 40 |
| P0900LAL | 1 | 75 | 98 | 800 | 4 | 2.2 | 120 | 40 |
| P1100LAL | 1 | 90 | 130 | 800 | 4 | 2.2 | 120 | 40 |
| P1300LAL | 1 | 120 | 160 | 800 | 4 | 2.2 | 120 | 40 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| P1500LAL | 1 | 140 | 180 | 800 | 4 | 2.2 | 120 | 35 |
| P1800LAL | 1 | 170 | 220 | 800 | 4 | 2.2 | 120 | 35 |
| P2300LAL | 1 | 190 | 260 | 800 | 4 | 2.2 | 120 | 35 |
| P2600LAL | 1 | 220 | 300 | 800 | 4 | 2.2 | 120 | 30 |
| P3100LAL | 1 | 275 | 350 | 800 | 4 | 2.2 | 120 | 30 |
| P3500LAL | 1 | 320 | 400 | 800 | 4 | 2.2 | 120 | 25 |
| P3800LAL | 1 | 340 | 450 | 800 | 4 | 2.2 | 120 | 25 |

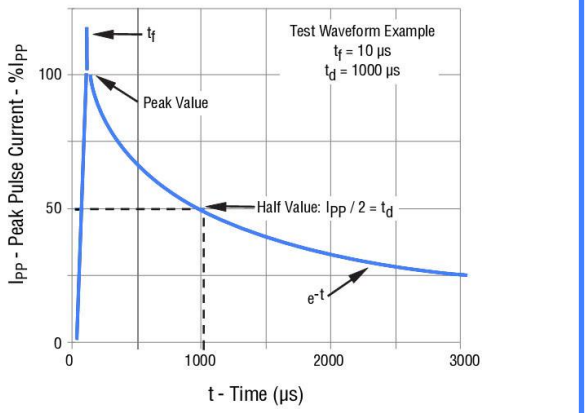
①Vs is measured at 100KV/s

②Off-state capacitance is measured in VDC=2V, VRMS=1V, f=1MHz

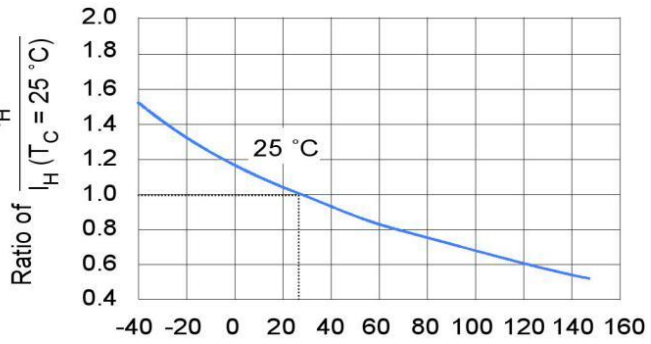
## Surge Ratings

| Ipp<br>2/10μS<br>Amps | Ipp<br>8/20μS<br>Amps | Ipp<br>10/160μS<br>Amps | Ipp<br>10/560μS<br>Amps | Ipp<br>10/1000μS<br>Amps | ITSM<br>60HZ<br>Amps | Di/Dt<br>Amps /μS |
|---|---|---|---|---|---|---|
| 150 | 150 | 90 | 50 | 45 | 20 | 500 |

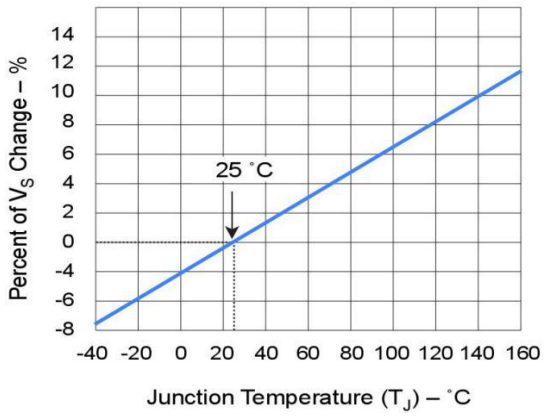
## Rating & Characteristic Curves




1. PEAK PULSE CURVE

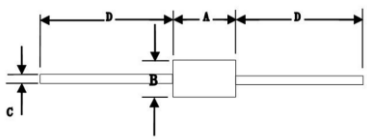



2. Normalized DC Holding Current versus Case Temperature




3. Normalized vs chang versus Junction Temp

## Package outline dimensions in millimeters




DO-15

| DIM | Millimeters | |
|---|---|---|
| | Min. | Max. |
| A | 5.80 | 7.62 |
| B | 2.60 | 3.60 |
| C | 0.70 | 0.90 |
| D | 25.40 | - |

## 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.