

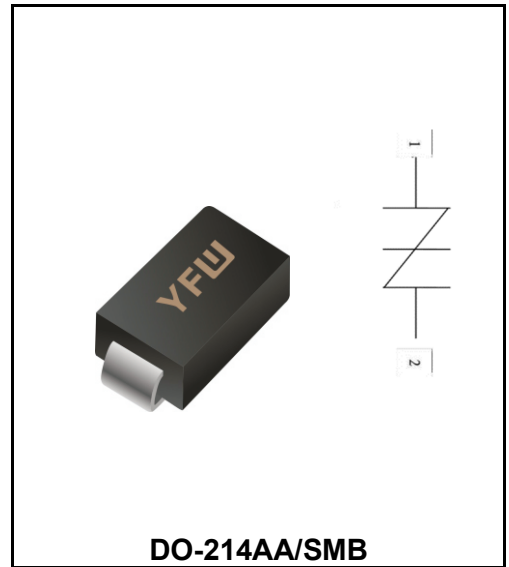
**Thyristors Surge Protection Device**

**Features**

- ◆ For surface mounted applications to optimize board space
- ◆ Low profile package
- ◆ Bidirectional crowbar protection
- ◆ Low leakage current :  $I = 5\mu A$  max
- ◆ Low on-state voltage
- ◆ Solid-state silicon technology

**Application**

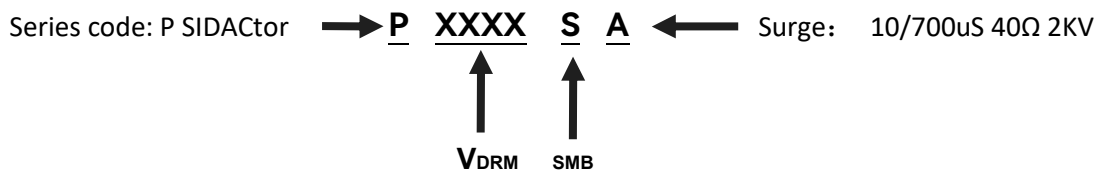
- ◆ TIA-968-A/B
- ◆ ITU K.20/21 Enhanced Level\*
- ◆ ITU K.20/21 Basic Level\*
- ◆ GR 1089 Inter-building\*
- ◆ GR 1089 Intra-building
- ◆ IEC 61000-4-5 2nd edition
- ◆ YD/T 1082 YD/T 993 YD/T 950



**Absolute Maximum Ratings (TA=25°C, RH=45%-75%, unless otherwise noted)**

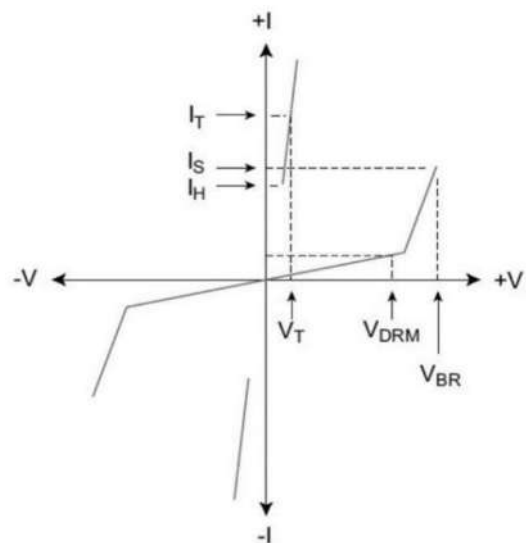
Parameter	Symbol	Value	Unit
Storage temperature range	Tstg	-60 to +150	°C
Operating junction temperature range	Tj	-40 to +150	°C

**Part Number Code**



**Electrical Parameters & V-I Curve**

Symbol	Parameter
V <sub>DRM</sub>	Peak off-state voltage
I <sub>DRM</sub>	Off-state current
V <sub>S</sub>	Switching voltage
I <sub>S</sub>	Switching current
V <sub>T</sub>	On-state voltage
I <sub>T</sub>	On-state current
I <sub>H</sub>	Holding current
C <sub>O</sub>	Off-state capacitance



Electrical Characteristics (TA=25°C)

Type	V <sub>DRM</sub>	I <sub>DRM</sub>	V <sub>s</sub>	I <sub>s</sub>	V <sub>T</sub>	I <sub>T</sub>	C <sub>o</sub>	I <sub>H</sub>
	Min.	Max.	Max.	Max.	Max.		Typ.	Min.
	V	uA	V	mA	V	A	pF	mA
P0080SA	6	5	25	800	4	2.2	50	20
P0220SA	15	5	32	800	4	2.2	50	50
P0300SA	25	5	40	800	4	2.2	70	50
P0640SA	58	5	77	800	4	2.2	50	100
P0720SA	65	5	88	800	4	2.2	50	100
P0900SA	75	5	98	800	4	2.2	45	100
P1100SA	90	5	130	800	4	2.2	45	100
P1300SA	120	5	160	800	4	2.2	45	100
P1500SA	140	5	180	800	4	2.2	40	100
P1800SA	170	5	220	800	4	2.2	40	100
P2000SA	180	5	220	800	4	2.2	40	100
P2300SA	190	5	260	800	4	2.2	35	100
P2600SA	220	5	300	800	4	2.2	35	100
P3100SA	275	5	350	800	4	2.2	30	100
P3500SA	320	5	400	800	4	2.2	30	100
P4000SA	360	5	460	800	4	2.2	30	100
P4500SA	420	5	540	800	4	2.2	30	100
P5000SA	500	5	600	800	4	2.2	30	100

Notes:

- All measurements are made at an ambient temperature of 25°C. IPP applies to -40°C through +85°C temperature range.
- Off-state capacitance (CO) is measured at 1 MHz with a 2 V bias and is typical value.

Ratings And V-I Characteristics Curves (TA=25°C, unless otherwise noted)

FIG.1: tr × td pulse waveform

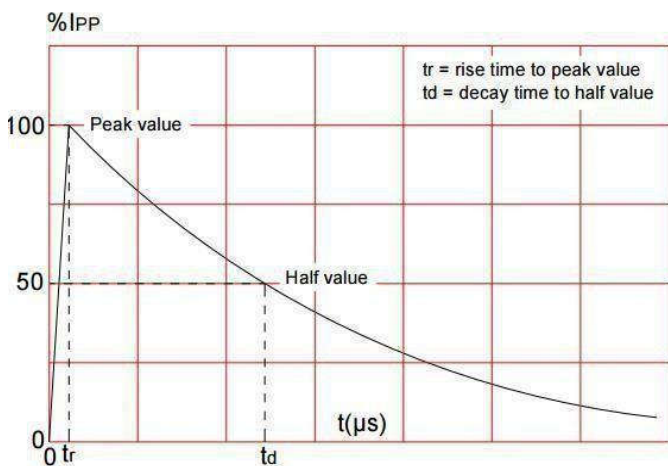
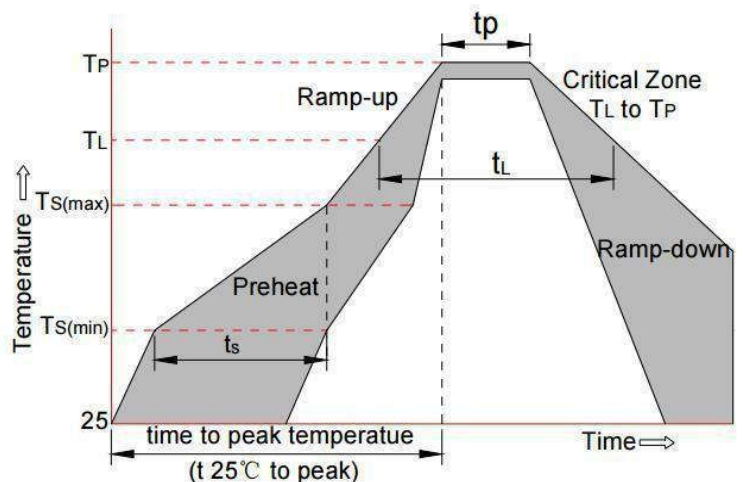
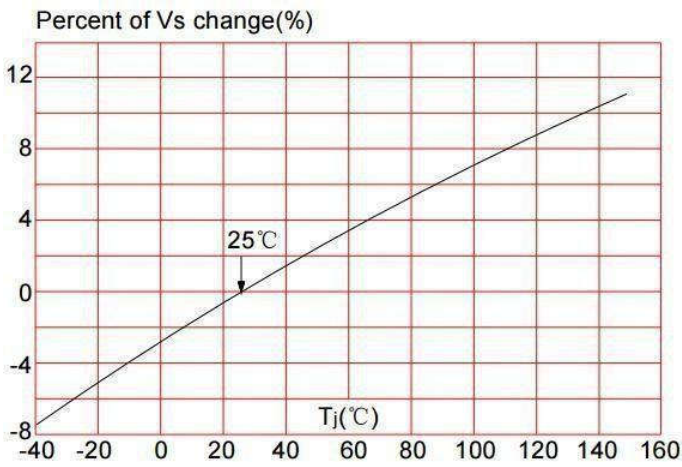


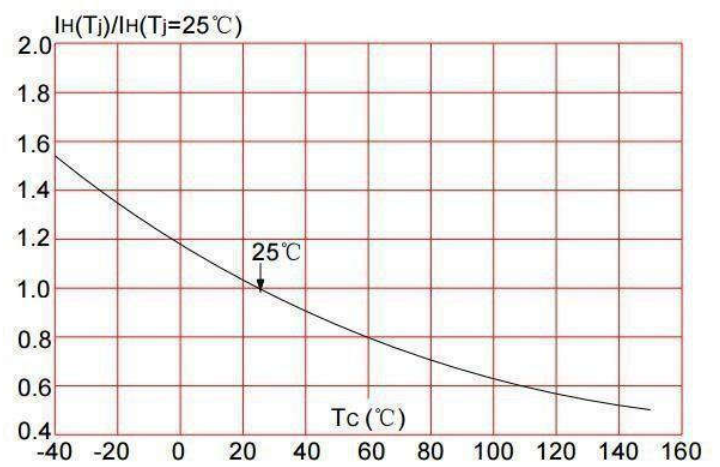
FIG.2: Reflow condition



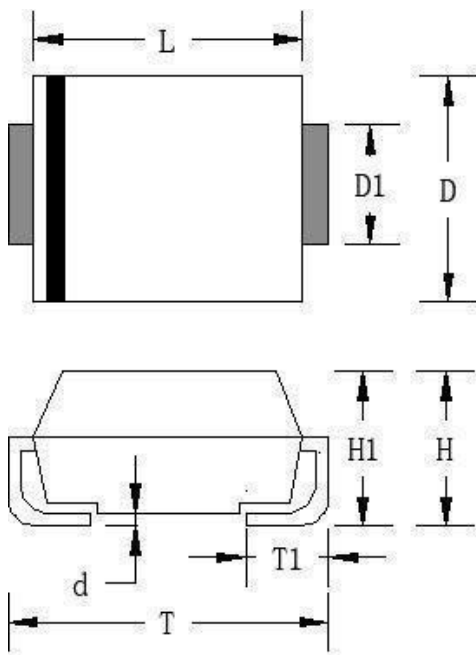
**FIG.3:** Normalized  $V_s$  change vs. junction temperature



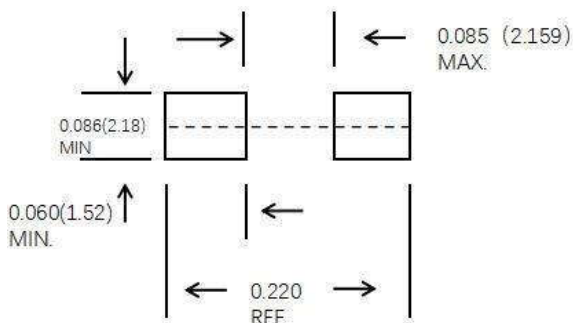
**FIG.4:** Normalized DC holding current vs. case temperature



**Package Dimension**



Ref. ( mm)	Millimeters		Inches.	
	Min.	Max.	Min.	Max.
D	3.4	3.94	1.33	1.55
D1	1.9	2.1	0.074	0.083
L	4.22	4.7	0.166	0.185
T	5.21	5.59	0.205	0.22
T1	0.9	1.42	0.035	0.056
d	0	0.23	0	0.009
H	1.95	2.6	0.076	0.102
H1	2	2.34	0.078	0.092



**Ordering Information**

Out line	Reel (pcs)	Per carton (pcs)	Reel diameters (mm)
Taping	3K	48K	330