

Thyristors Surge Protection Device

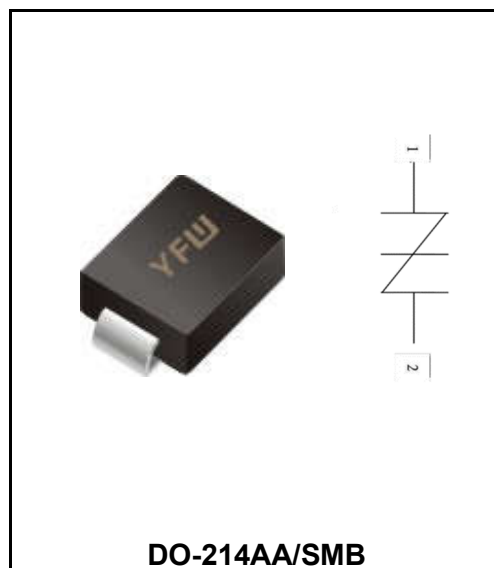
Features

- ♦ 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

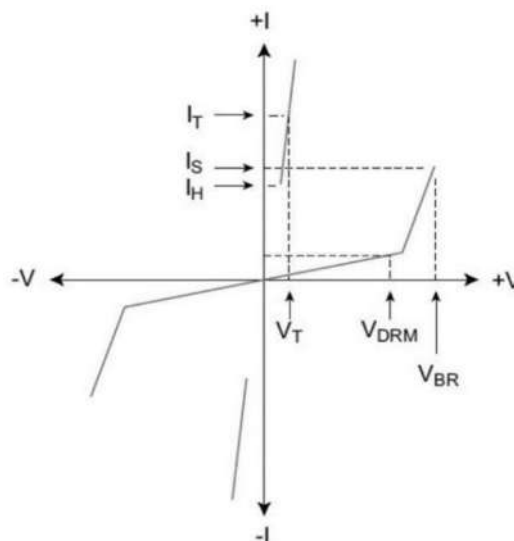
Part Number Code

Series code: P SIDACTor → **P** **XXXX** **S** **B** ← Surge: 10/700uS 40Ω 4KV

↑ ↑
V_{DRM} **SMB**

Electrical Parameters & V-I Curve

Symbol	Parameter
V_{DRM}	Peak off-state voltage
I_{DRM}	Off-state current
V_S	Switching voltage
I_S	Switching current
V_T	On-state voltage
I_T	On-state current
I_H	Holding current
C_O	Off-state capacitance



Electrical Characteristics (TA=25°C)

Type	V _{DRM}	I _{DRM}	V _S	I _S	V _T	I _T	C _o	I _H
	Min.	Max.	Max.	Max.	Max.		Typ.	Min.
	V	uA	V	mA	V	A	pF	mA
P0080SB	6	5	25	800	4	2.2	80	20
P0300SB	25	5	40	800	4	2.2	100	50
P0640SB	58	5	77	800	4	2.2	80	100
P0720SB	65	5	88	800	4	2.2	80	100
P0900SB	75	5	98	800	4	2.2	75	100
P1100SB	90	5	130	800	4	2.2	75	100
P1300SB	120	5	160	800	4	2.2	75	100
P1500SB	140	5	180	800	4	2.2	70	100
P1800SB	170	5	220	800	4	2.2	70	100
P2000SB	180	5	220	800	4	2.2	70	100
P2300SB	190	5	260	800	4	2.2	65	100
P2600SB	220	5	300	800	4	2.2	65	100
P3100SB	275	5	350	800	4	2.2	60	100
P3500SB	320	5	400	800	4	2.2	60	100
P4000SB	360	5	460	800	4	2.2	60	100
P4500SB	420	5	540	800	4	2.2	60	100
P5000SB	500	5	600	800	4	2.2	60	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

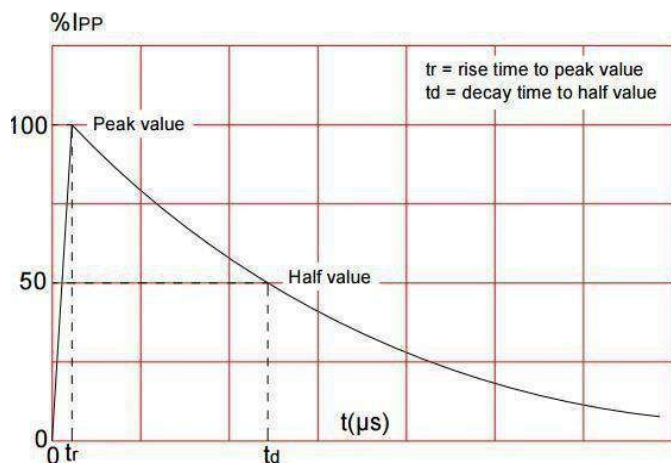


FIG.2: Reflow condition

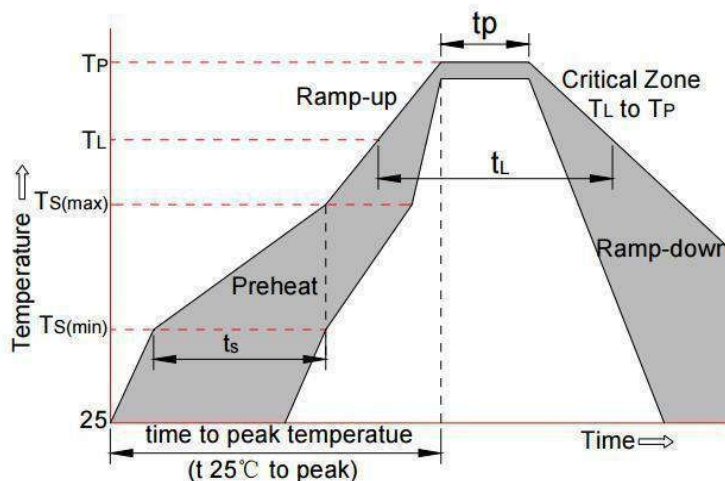


FIG.3: Normalized V_s change vs. junction temperature

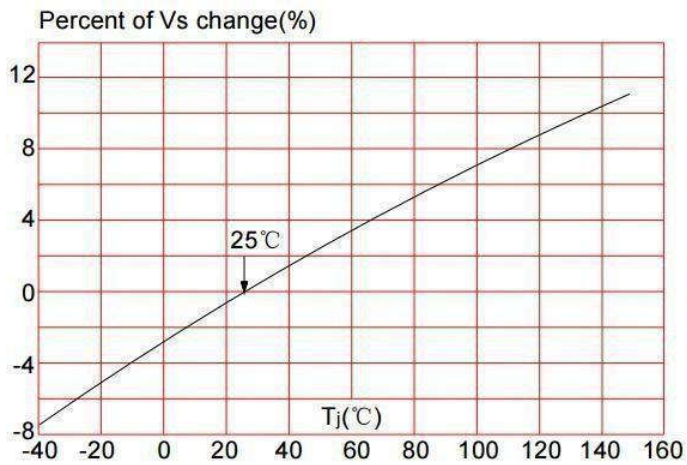
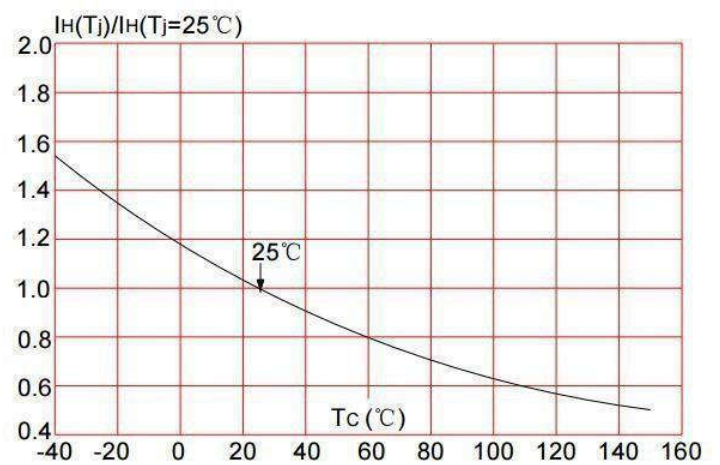
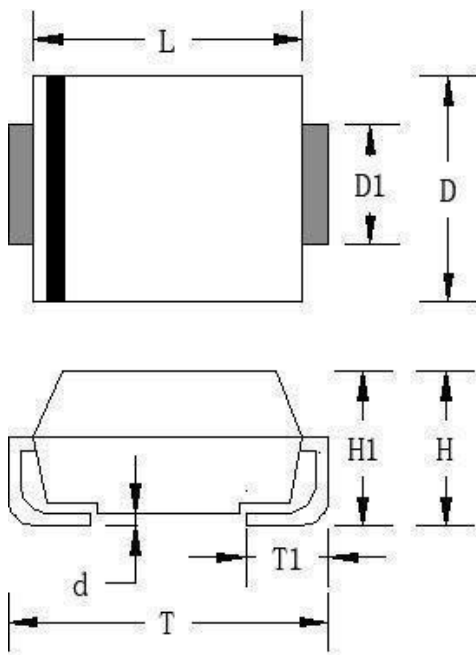


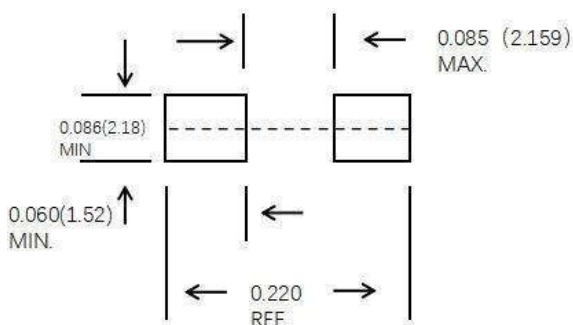
FIG.4: Normalized DC holding current vs. case temperature



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	2.5K	40K	330