

Surface Mounted Over-voltage Protection Thyristor

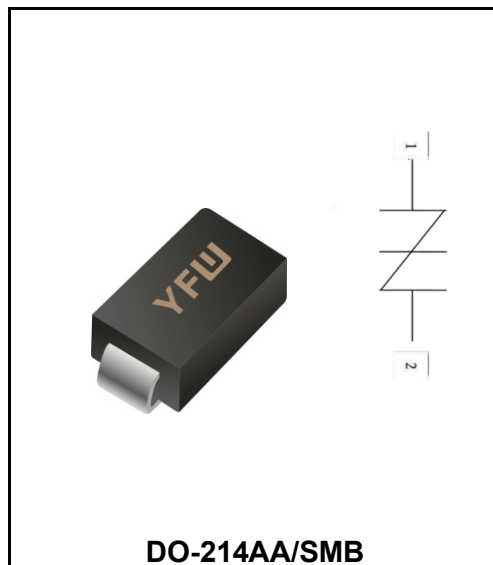
Reverse Voltage 6.0 ~ 500 V

FEATURES

- ◆ Low reverse leakage
- ◆ High reliability
- ◆ High temperature soldering guaranteed:
260°C/10seconds
- ◆ Lead and body according with RoHS standard
- ◆ Have low capacitance, making them ideal for
high-speed transmission equipment
- ◆ Will not fatigue
- ◆ Are non-degenerative
- ◆ Eliminate voltage overshoot caused by
fast-rising transients
- ◆ Cannot be damaged by voltage

MECHANICAL DATA

- ◆ Case:SMB
- ◆ Epoxy: UL 94V-0 rate flame retardant
- ◆ Lead: Pure tin plated, lead free
- ◆ Green compound



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 V_{DRM}
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
V_{PP}	Peak Pulse Voltage – maximum rated peak impulse voltage
I_{PP}	Peak Pulse Current – maximum rated peak impulse current

Electrical Characteristics

Part Number	Marking	V _{DRM} (V)	V _S (V)	V _T (V)	I _{DRM} (μA)	I _S (mA)	I _T (A)	I _H (mA)	C _O MAX (pF)	V _{PP} 10/700μs (V)	I _{PP} 10/700μs (A)
P0060SA	P006A	6.0	25	4.0	5.0	800	2.2	50	50	3000	75
P0080SA	P008A	6.0	25	4.0	5.0	800	2.2	50	50	3000	75
P0220SA	P022A	15	32	4.0	5.0	800	2.2	50	50	3000	75
P0300SA	P030A	25	40	4.0	5.0	800	2.2	50	70	3000	75
P0640SA	P064A	58	77	4.0	5.0	800	2.2	150	50	3000	75
P0720SA	P072A	65	88	4.0	5.0	800	2.2	150	50	3000	75
P0900SA	P090A	75	98	4.0	5.0	800	2.2	150	45	3000	75
P1100SA	P110A	90	130	4.0	5.0	800	2.2	150	45	3000	75
P1300SA	P130A	120	160	4.0	5.0	800	2.2	150	45	3000	75
P1500SA	P150A	140	180	4.0	5.0	800	2.2	150	40	3000	75
P1800SA	P180A	170	220	4.0	5.0	800	2.2	150	40	3000	75
P2300SA	P230A	190	260	4.0	5.0	800	2.2	150	35	3000	75
P2600SA	P260A	220	300	4.0	5.0	800	2.2	150	35	3000	75
P3100SA	P310A	275	350	4.0	5.0	800	2.2	150	30	3000	75
P3500SA	P350A	320	400	4.0	5.0	800	2.2	150	30	3000	75
P4000SA	P400A	360	460	4.0	5.0	800	2.2	150	30	3000	75
P4200SA	P420A	390	500	4.0	5.0	800	2.2	150	30	3000	75
P4500SA	P450A	420	540	4.0	5.0	800	2.2	150	30	3000	75
P5000SA	P500A	500	600	4.0	5.0	800	2.2	150	30	3000	75

Note:

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

Thermal Considerations

Package	Symbol	Parameter	Value	Unit
DO-214AA SMB	T _J	Operating Junction Temperature	-40 to +150	°C
	T _{STG}	Storage Temperature Range	-40 to +150	°C
	R _{θJA}	Junction to Ambient on printed circuit	105	°C/W

Characteristics Curves

Characteristics Curves

Figure 1. V-I Characteristics

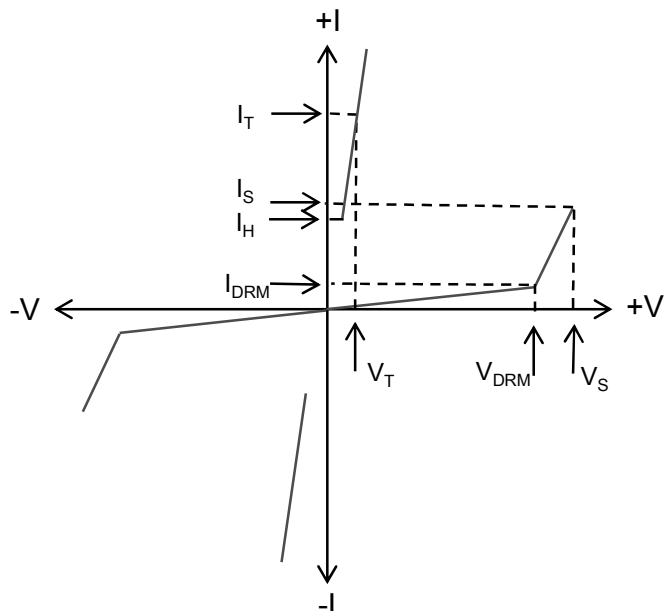


Figure 2. $t_r \times t_d$ Pulse Wave-form

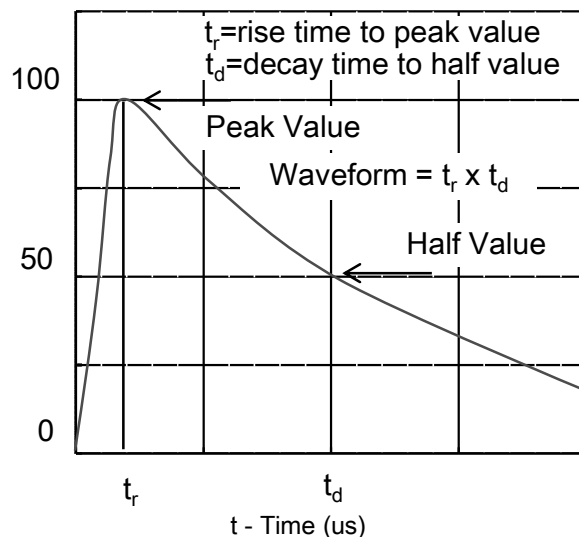


Figure 3. Normalized V_S Change versus Junction Temperature

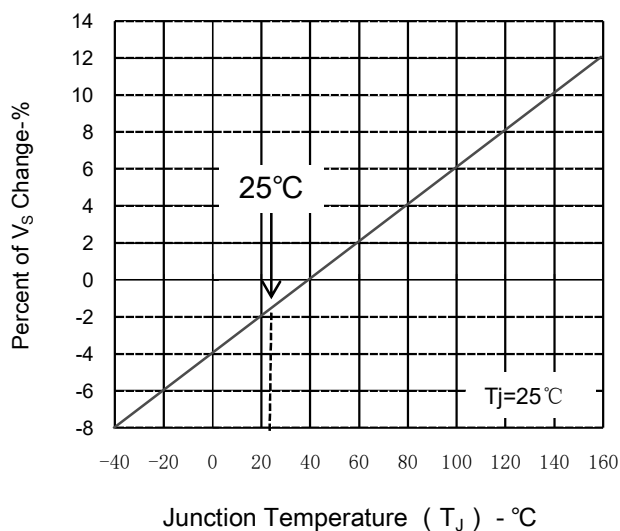
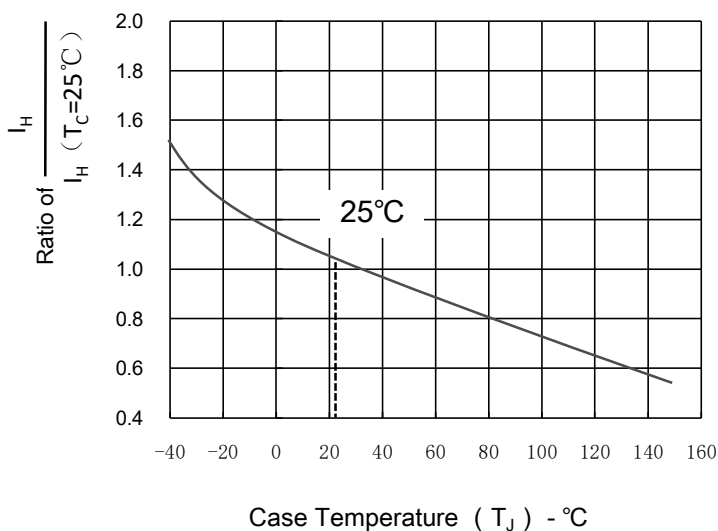
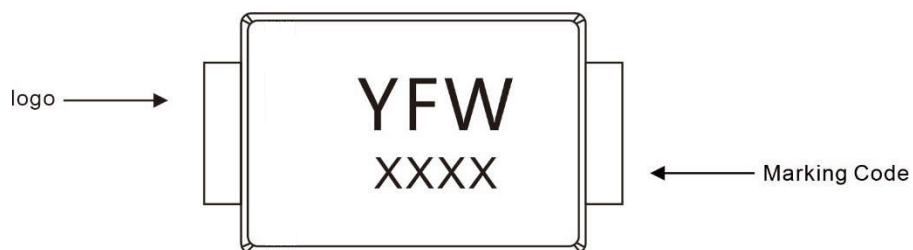


Figure 4. Normalized DC Holding Current versus Case Temperature



Marking Diagram



Ordering information

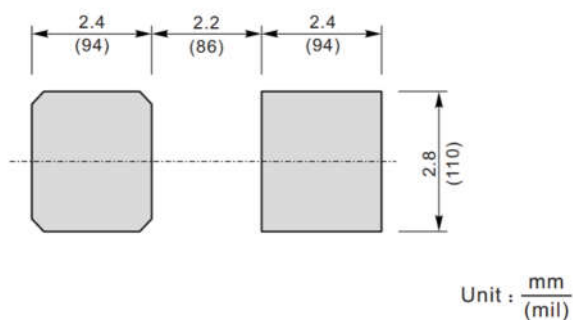
Package	Packing Description	Packing Quantity
DO-214AA SMB	Tape/Reel, 13" reel	3000PCS/Reel 30000PCS/Carton

Package Dimensions

DO-214AA SMB

Dim.	Millimeter(mm)		mil	
	Min.	Max.	Min.	Max.
A	2.13	2.44	84	96
E	4.06	4.70	160	185
D	3.3	3.94	130	155
E ₁	5.08	5.59	200	220
A ₁	0.05	0.20	2.0	7.9
L	0.8	1.5	32	59
C	0.152	0.305	6	12
b	1.9	2.2	75	87

The recommended mounting pad size



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