

Features

- ◆ Bi-directional crowbar transient voltage protection
- ◆ High surge capability
- ◆ High off-state impedance
- ◆ Low leakage current
- ◆ Low on-state voltage
- ◆ Short-circuit failure mode


DO-214AA(SMB)

Main Application

DOWO's thyristor surge protector devices are designed to help protect sensitive telecommunication equipment from the hazards caused by lightning, power contact, and power induction. These devices enable equipment to comply with various regulatory requirements including GR 1089, ITU K.20, K.21 and K.45, IEC 60950, UL 60950, and TIA-968-A (formerly known as FCC Part 68).

Typical application including:

- Central office switching equipment. Analog and digital linecards (xDSL, T1/E1, ISDN,
- Customer Premises Equipment (CPE) such as phones, fax machines, modems, POS terminals, PBX systems and caller ID adjunct boxes.
- Primary protection modules including Main Distribution Frames (MDF), building entrance equipment and station protection modules.
- Access network equipment such as remote terminals, line repeaters, multiplexers, cross-connects, WAN equipment, Network Interface Devices (NID).
- Data lines and security systems.
- CATV line amplifiers and power inserters.
- Sprinkler systems.

Electrical Parameters (Tamb=25°C)

Part Number	V _{DRM}	I _{DRM}	V _{BO}	I _{BO}	V _T	I _T	C _o	I _H
	Min.	Max.	Max.	Max.	Max.	Max.	Typ.	Min.
	V	uA	V	mA	V	A	pF	mA
P0080SC	6	5	20	800	4	2.2	80	25
P0300SC	25	5	40	800	4	2.2	80	50
P0640SC	58	5	77	800	4	2.2	65	120
P0720SC	65	5	88	800	4	2.2	65	120
P0900SC	75	5	98	800	4	2.2	65	120
P1100SC	90	5	130	800	4	2.2	65	120

Part Number	V _{DRM}	I _{DRM}	V _{BO}	I _{BO}	V _T	I _T	C _o	I _H
	Min.	Max.	Max.	Max.	Max.	Max.	Max.	Min.
	V	uA	V	mA	V	A	pF	mA
P1300SC	120	5	160	800	4	2.2	65	120
P1500SC	140	5	180	800	4	2.2	65	120
P1800SC	170	5	220	800	4	2.2	60	120
P2000SC	180	5	220	800	4	2.2	60	120
P2300SC	190	5	260	800	4	2.2	60	120
P2600SC	220	5	300	800	4	2.2	55	120
P3100SC	275	5	350	800	4	2.2	50	120
P3500SC	320	5	400	800	4	2.2	50	120
P3800SC	360	5	460	800	4	2.2	50	120
P4200SC	400	5	540	800	4	2.2	45	120
P4800SC	440	5	600	800	4	2.2	40	50(Max.)
P8800SC	800	5	1100	800	4	2.2	35	50(Max.)

Electrical Characteristics

V_{DRM} Stand-off voltage, is measured at I_{DRM}

I_H Holding current.

V_{BO} Breakover voltage, is measured at 100V/μs. Off-state

I_{BO} Breakover current.

C_O Capacitance is measured in V_{DC}=2V@1MHz.

I_T ON-state current On-

I_{DRM} Leakage current, is measured at V_{DRM}.

V_T state voltage.

Part Numbering System

P XXX S C
 (A) (B) (C) (D)

(A) Semiconductor Surge Arrester.

(B) Series: 0060, 0300, 0640.....3500, 3800, 8800 etc.

(C) T: Package: DO-214AA(SMB)

(D) Rating Sure Voltage: C: ≧ 6KV(10/700μs)



Electrical Characteristics Curves

Figure1 V-I Characteristics

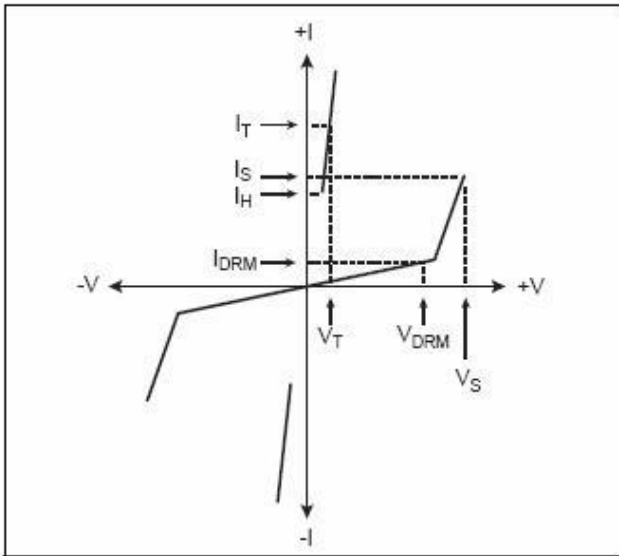


Figure2 $t_r \times t_d$ Pulse Wave-form

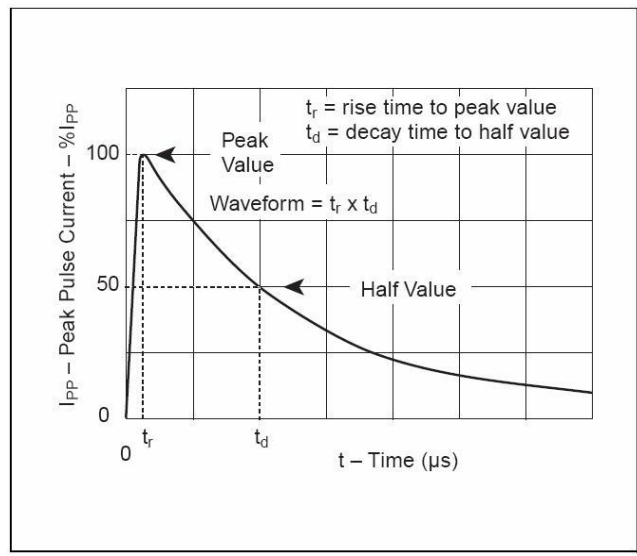


Figure 3 Normalized V_S Change versus Junction Temperature

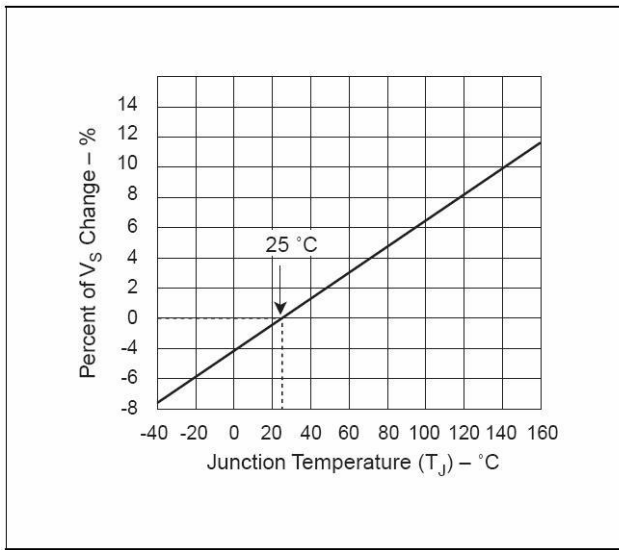
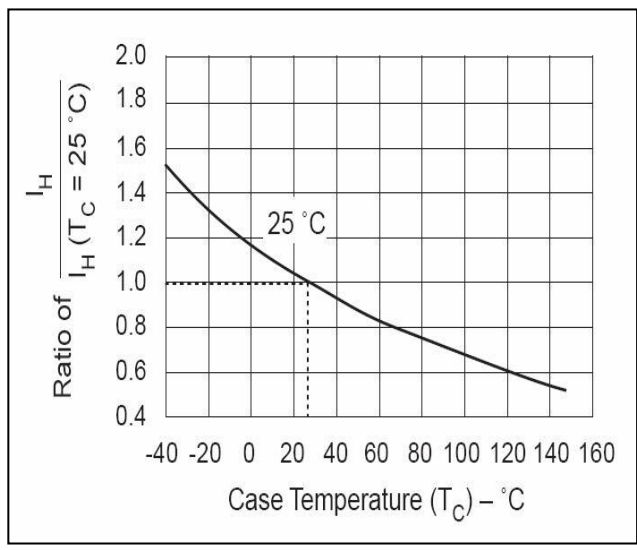



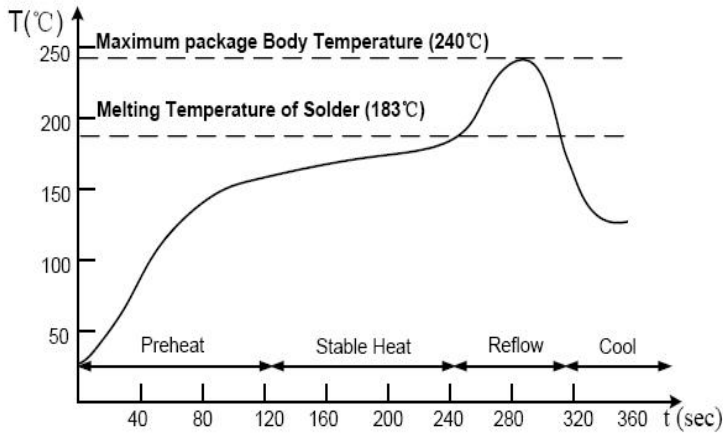
Figure 4 Normalized DC Holding Current



Thermal Considerations

Package	DO-214AA/SMB	Symbol	Parameter	Value	Unit
	T_J	Operating Junction Temperature	-40 to +150	°C	
	T_S	Storage Temperature Range	-40 to +150	°C	
	$R_{\theta JA}$	Junction to Ambient on printed circuit	90	°C/W	

Solder Reflow Recommendations

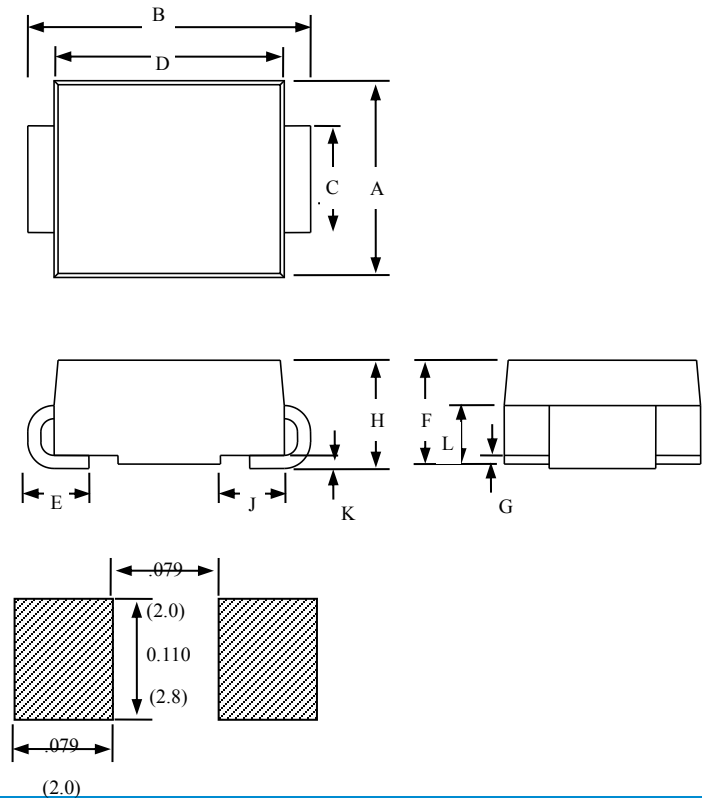


- Recommended reflow methods: IR, vapor phase oven, hot air oven, wave solder.
- The device can be exposed to a maximum temperature of 265°C for 10 seconds.
- Devices can be cleaned using standard industry methods and solvents.


Notes: If reflow temperatures exceed the recommended profile, devices may not meet the performance requirements.

Product Dimensions

Dimension	Inches		Millimeters	
	MIN	MAX	MIN	MAX
A	0.134	0.155	3.40	3.94
B	0.205	0.22	5.21	5.59
C	0.075	0.083	1.90	2.11
D	0.166	0.185	4.22	4.70
E	0.036	0.056	0.91	1.42
F	0.073	0.087	1.85	2.2
G	0.002	0.008	0.05	0.20
H	0.077	0.094	1.95	2.40
J	0.043	0.053	1.09	1.35
K	0.008	0.014	0.20	0.35
L	0.039	0.049	0.99	1.24



Summary of Packing Options

Package Type	Description	Packing Quantity	Industry Standard
DO-214AA(SMB) 	Embossed Carrier Reel Pack	3000PCS	EIA-481-D