

**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
- ◆ Ultra Low Capacitance (Typ:55.0pF)



DO-214AA(SMB)

**Main Application**

JKSEMI'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.21and 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.

**Electrcal Parameters (Tamb=25°C)**

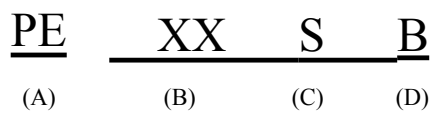
Part Number	VDRM	IDRM	VBO	IBO	VT	IT	Co	IH
	Min.	Max.	Max.	Max.	Max.	Max.	Typ.	Min.
	V	uA	V	mA	V	A	pF	mA
PE06SB	6	2	15	800	3	2.2	55	30

Part Number	V <sub>DRM</sub>	I <sub>DRM</sub>	V <sub>BO</sub>	I <sub>BO</sub>	V <sub>T</sub>	I <sub>T</sub>	C <sub>O</sub>	I <sub>H</sub>
	Min.	Max.	Max.	Max.	Max.	Max.	Max.	Min.
	V	uA	V	mA	V	A	pF	mA

**Electrical Characteristics**

- V<sub>DRM</sub> Stand-off voltage, is measured at I<sub>DRM</sub>
- V<sub>BO</sub> Breakover voltage, is measured at 100V/μs.
- C<sub>O</sub> Off-state capacitance is measured in V<sub>DC</sub>=2V@1MHz.
- I<sub>DRM</sub> Leakage current, is measured at V<sub>DRM</sub>.
- I<sub>H</sub> Holding current.
- I<sub>BO</sub> Breakover current.
- I<sub>T</sub> ON-state current
- V<sub>T</sub> On-state voltage.

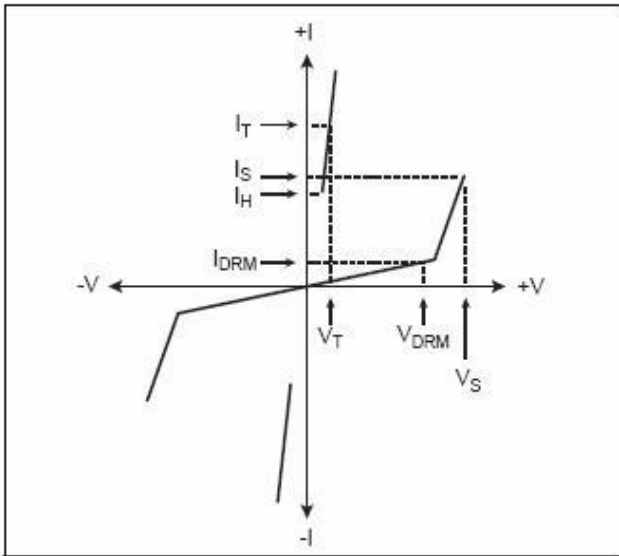
**Part Numbering System**



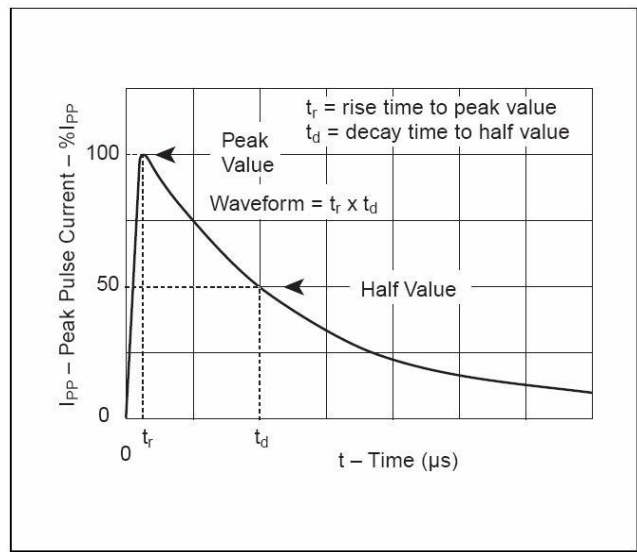
- (A) Jksemi's Semiconductor Surge Arrester;
- (B) Series:0060etc.
- (C) Package:DO-214AA(SMB)
- (D) Rating Sure Voltage:B:4KV(10/700μs )

**Electrical Characteristics Curves**

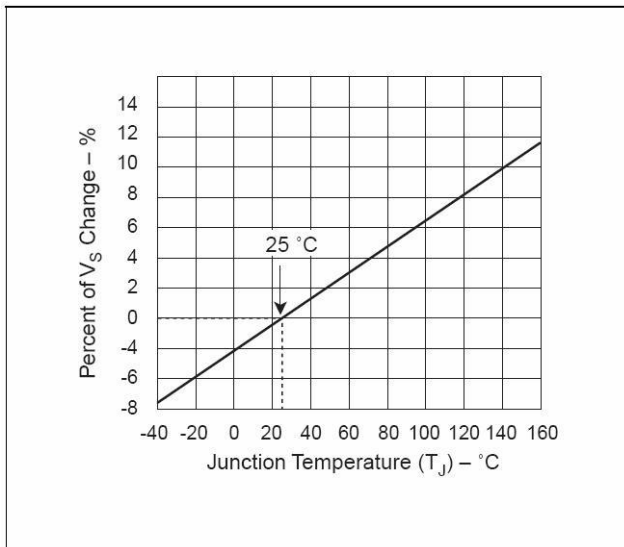
**Figure1 V-I Characteristics**



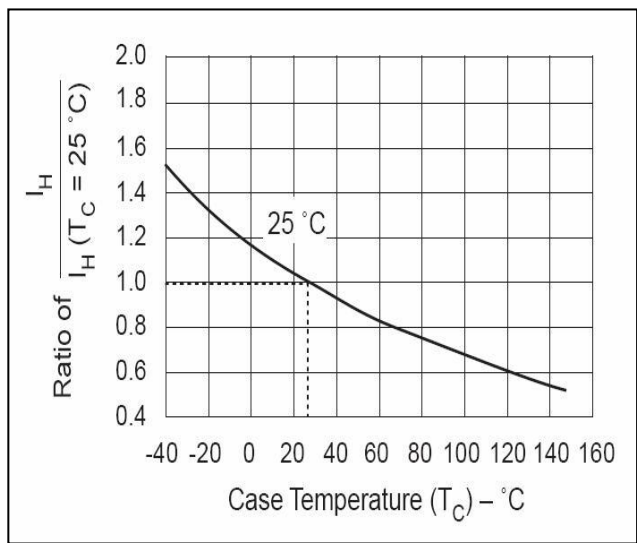
**Figure2  $t_r \times t_d$  Pulse Wave-form**




**Figure 3 Normalized  $V_S$  Change versus Junction Temperature**



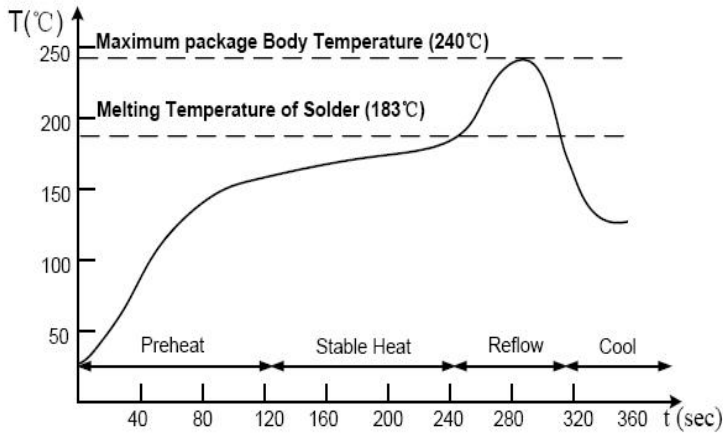
**Figure 4 Normalized DC Holding Current**



**Thermal Considerations**

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

**Solder Reflow Recommendations**

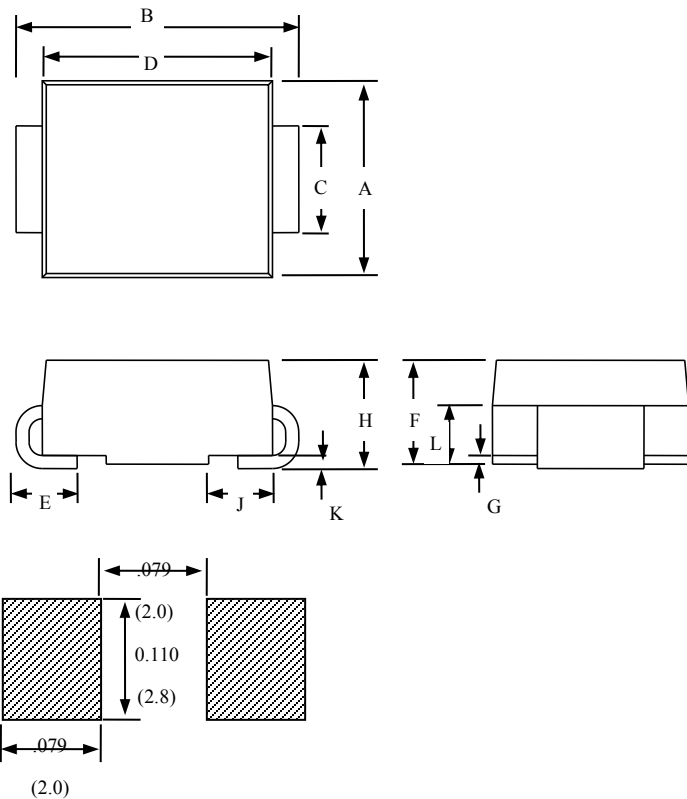


- Recommended reflow methods: IR, vapor phase oven, hot air oven, wave solder.
- The device can be exposed to a maximum temperature of 265°C for 10 seconds.
- Devices can be cleaned using standard industry methods and solvents.


**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 	Embossed Carrier Reel Pack	3000PCS	EIA-481-D

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