

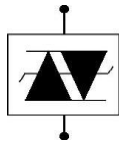
Product Overview

A Semiconductor discharge tube is an overvoltage protection device, which is made using the thyristor principle, relying on the breakdown current of the PN junction to trigger the device to conduct discharge, which can flow through a large inrush current or pulse current

Product Features

- Low voltage and overshoot
- Low on-state voltage
- Does not degrade with use
- Fails short circuit when surged in excess of ratings
- Low capacitance

Package



ELECTRICAL CHARACTERISTICS (T_A=25°C, continued)

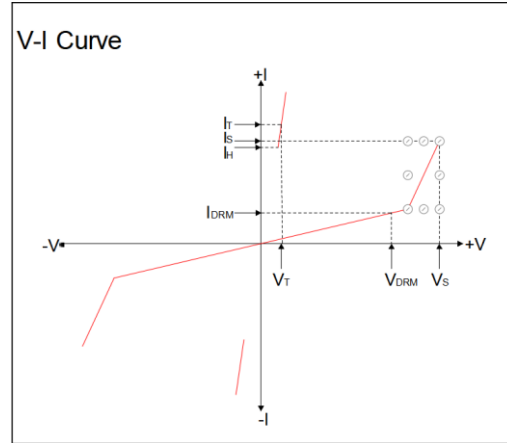
Part Number	IDRM@VDRM		VS①@IS		V _T @I _T		IH	Co
	μA	V	V	mA	V	A	mA	pF
	max	min	max	max	max	max	min	max
DP0080SB	5	6	15	800	4	2.2	30	60
DP0300SB	5	25	40	800	4	2.2	30	60
DP0640SB	5	58	77	800	4	2.2	120	60
DP0720SB	5	65	87	800	4	2.2	120	60
DP0900SB	5	75	98	800	4	2.2	120	60
DP1100SB	5	90	130	800	4	2.2	120	60
DP1300SB	5	120	160	800	4	2.2	120	100
DP1500SB	5	140	180	800	4	2.2	120	100
DP1800SB	5	170	220	800	4	2.2	120	100
DP2300SB	5	190	260	800	4	2.2	120	60
DP2600SB	5	220	300	800	4	2.2	120	60
DP3100SB	5	275	350	800	4	2.2	120	60
DP3500SB	5	320	400	800	4	2.2	120	60
DP3800SB	5	340	450	800	4	2.2	120	60
DP4200SB	5	400	520	800	4	2.2	20	60

ABSOLUTE MAXIMUM RATINGS (T_A=25°C, RH=45%-75%, unless otherwise noted)

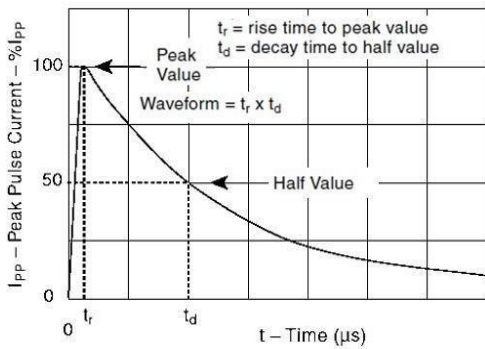
Symbol	Parameter	Value	Unit
T _J	Operating Junction Temperature	-40~+150	°C
T _S	Storage Temperature Range	-65~+150	°C

ELECTRICAL CHARACTERISTICS ($T_A=25^\circ\text{C}$)

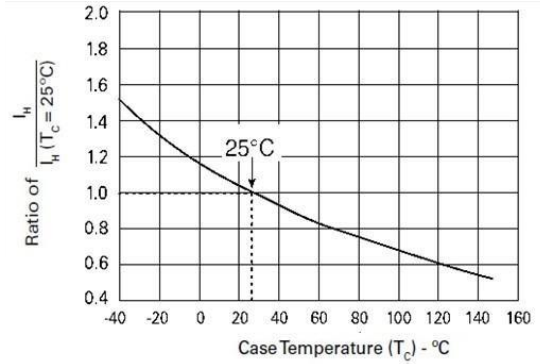
Symbol	Parameter
V_{DRM}	Peak off-state voltage
I_{DRM}	Off-state current
V_s	Switching voltage
I_s	Switching current
V_{r}	On-state voltage
I_{r}	On-state current
I_{h}	Holding current
C_o	Off-state capacitance



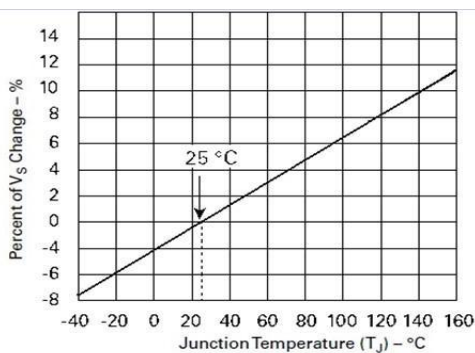
Tr x Td Pulse waveform



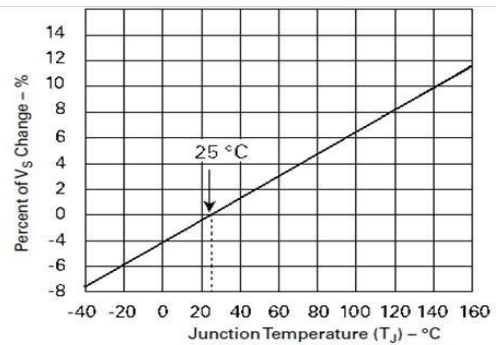
Normalized DC holding current vs. case temperature



Vs change vs. junction temperature



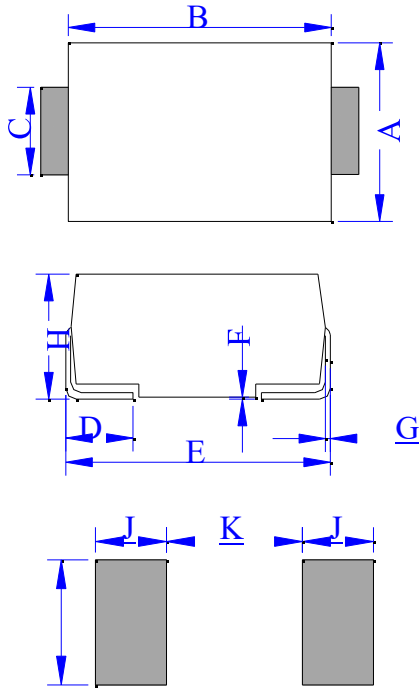
Co change vs. bias voltage ($V_R=1V$)



Surge rating

Series	$I_{\text{pp}}(\text{A})$ min		
	8/20 μs	10/360 μs	10/1000 μs
B	250	100	80

Package size



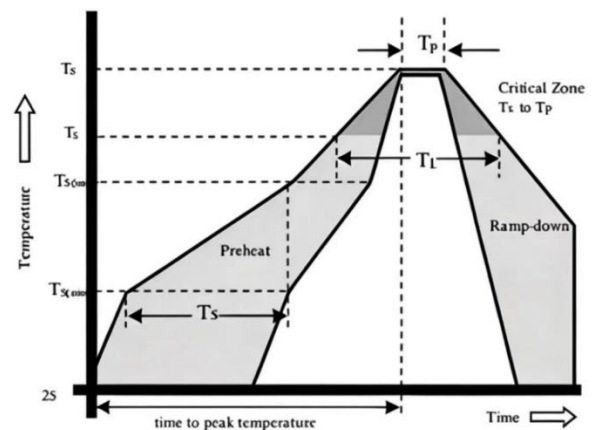
DO-214AA (SMB)

Ref.	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	3.30	3.94	0.130	0.155
B	4.30	4.80	0.169	0.189
C	1.90	2.20	0.075	0.087
D	0.95	1.52	0.037	0.060
E	5.20	5.60	0.205	0.220
F	0.051	0.203	0.002	0.008
G	0.15	0.31	0.006	0.012
H	2.10	2.40	0.083	0.094
J	2.20		0.087	
K		2.60		0.102
L	2.30		0.091	

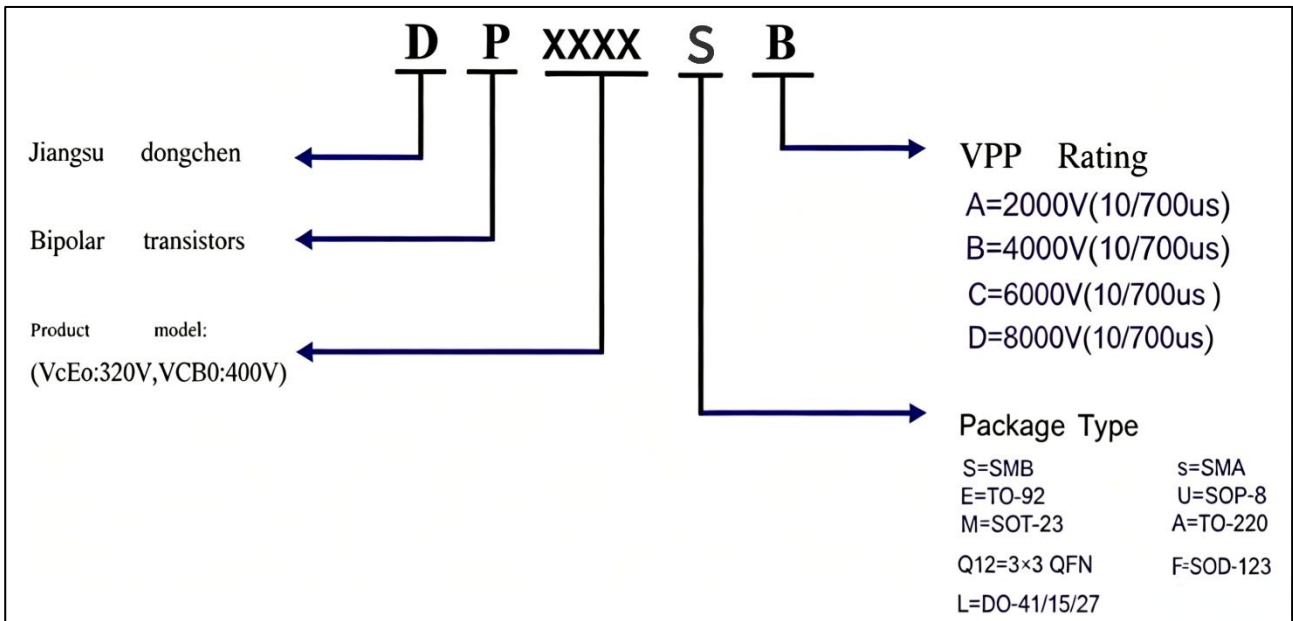
Welding parameters

Reflow Profile

Reflow Condition		Pb-Free Assembly
Pre Heat	Temperature Min.	+150°C
	Temperature Max.	+200°C
	Time(Min to Max)	60 – 180 seconds
Average ramp up rate (Liquidus Temp (T _L) to peak)		3°C/second max
T _s (nus) to T _L - Ramp-up Rate		3°C/second max
Reflow	- Temperature (T _L) (Liquidus)	217°C
	- Temperature (T _L)	60 – 150 seconds
Peak Temp (T _F)		260±0/-5 °C
Time within 5°C of actual Peak Temp (T _F)		8-15 seconds
Ramp-down Rate		6°C/s max
Time 25°C to peak Temp (T _F)		8 min max.
Do not exceed		260°C



Naming conventions



Marking



Order instructions: Ordering method

Part Number	Component Package	QTY/Reel	Reel Size
DPxxxxSB	DO-214AA(SMB)	3000PCS	13"

Note

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