

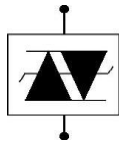
Product Overview

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)

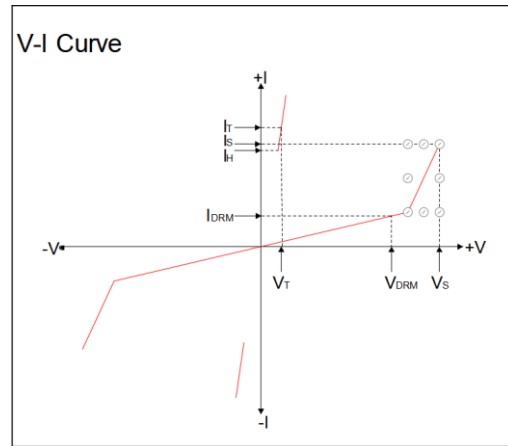
Part Number	IDRM@VDRM		VS①@IS		V _T @I _T		IH	C _o
	μA	V	V	mA	V	A	mA	pF
	max	min	max	max	max	max	min	max
DP0080SD	5	6	15	800	4	2.2	30	100
DP0300SD	5	25	40	800	4	2.2	30	100
DP0640SD	5	58	77	800	4	2.2	120	100
DP0720SD	5	65	87	800	4	2.2	120	100
DP0900SD	5	75	98	800	4	2.2	120	100
DP1100SD	5	90	130	800	4	2.2	120	100
DP1300SD	5	120	160	800	4	2.2	120	100
DP1500SD	5	140	180	800	4	2.2	120	200
DP1800SD	5	170	220	800	4	2.2	120	200
DP2300SD	5	190	260	800	4	2.2	120	200
DP2600SD	5	220	300	800	4	2.2	120	80
DP3100SD	5	275	350	800	4	2.2	120	80
DP3500SD	5	320	400	800	4	2.2	120	80
DP3800SD	5	340	450	800	4	2.2	120	80
DP4200SD	5	400	520	800	4	2.2	20	80

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

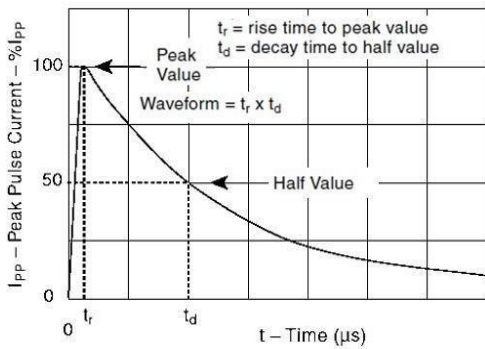
Symbol	Parameter	Value	Unit
T _J	Operating Junction Temperature	-40~+150	°C
T _S	Storage Temperature Range	-65~+150	°C

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

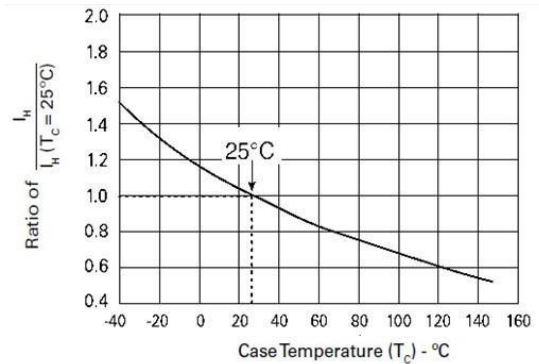
Symbol	Parameter
V_{DRM}	Peak off-state voltage
I_{DRM}	Off-state current
V_s	Switching voltage
I_s	Switching current
V_{r}	On-state voltage
I_{r}	On-state current
I_{h}	Holding current
C_o	Off-state capacitance



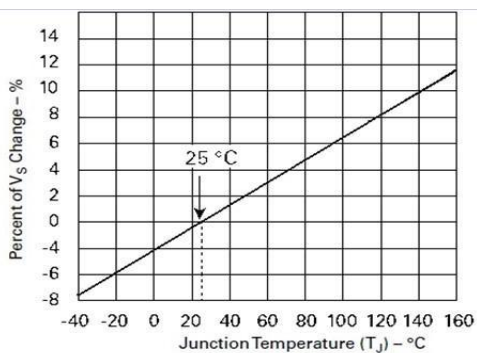
Tr x Td Pulse waveform



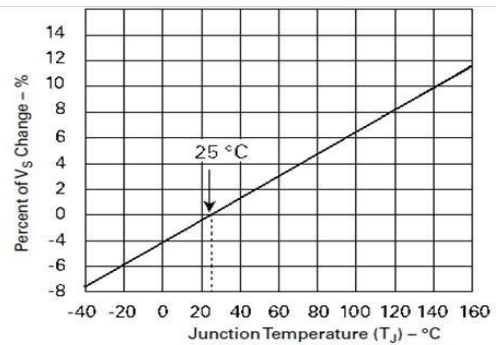
Normalized DC holding current vs. case temperature



Vs change vs. junction temperature



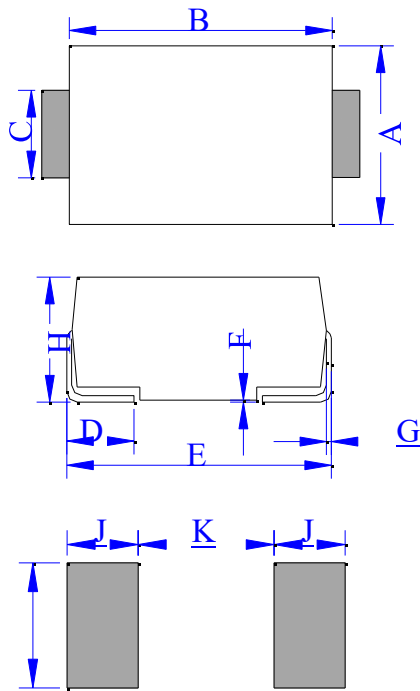
Co change vs. bias voltage ($V_R=1\text{V}$)



Surge rating

Series	$I_{\text{pp}}(\text{A})$ min		
	8/20 μs	10/360 μs	10/1000 μs
D	600	200	150

Package size



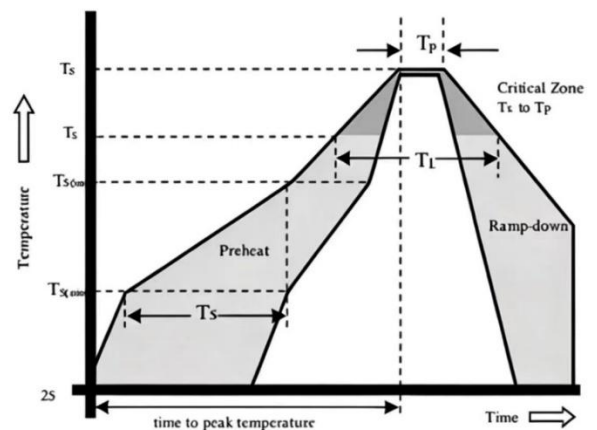
DO-214AA (SMB)

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	2.60	0.083	0.094
J	2.20		0.087	
K		2.60		0.102
L	2.30		0.091	

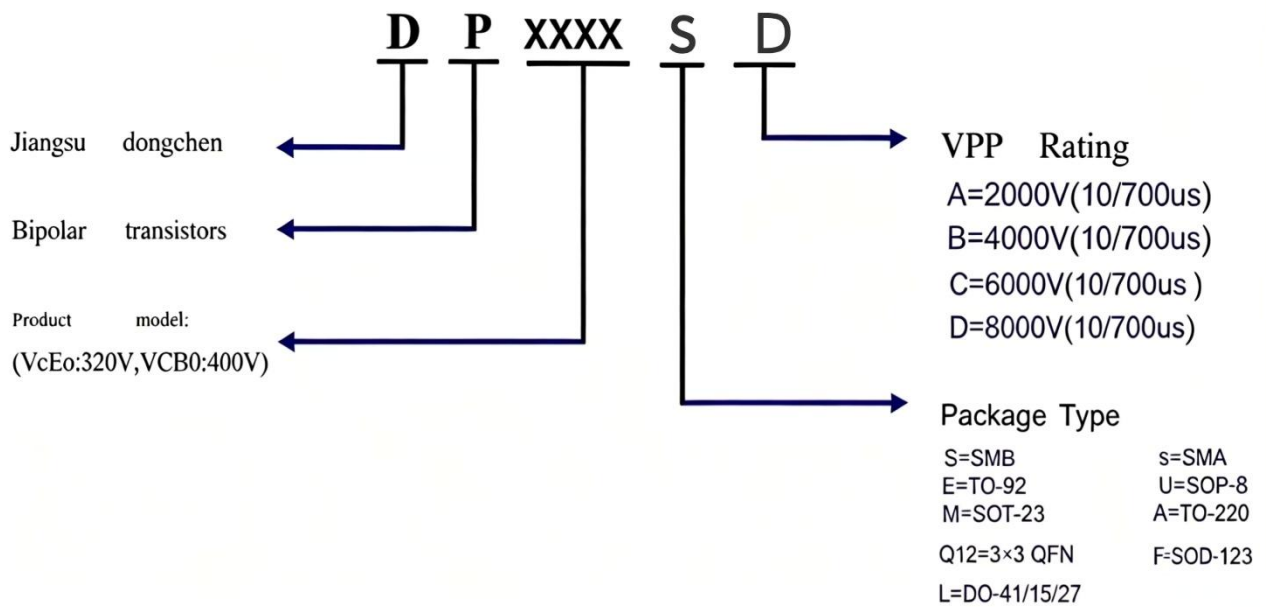
Welding parameters

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
Ts(95%) 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 _P)		260±0/5 °C
Time within 5°C of actual Peak Temp (T _P)		8-15 seconds
Ramp-down Rate		6°C/s max
Time 25°C to peak Temp (T _P)		8 min max.
Do not exceed		260°C



Naming conventions



Marking



Order instructions: Ordering method

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

Note

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