

Product Overview

A semiconductor discharge tube is an overvoltage protection device fabricated based on the thyristor principle. It relies on the breakdown current of the PN junction to trigger device conduction for discharge, enabling the passage of substantial surge or pulse currents.

Product Features

- Bidirectional overvoltage circuit protection
- Strong surge resistance
- Rapid response with recovery capability
- Low leakage current and high reliability
- Low capacitance

Package



ELECTRICAL CHARACTERISTICS (T_A=25°C, continued)

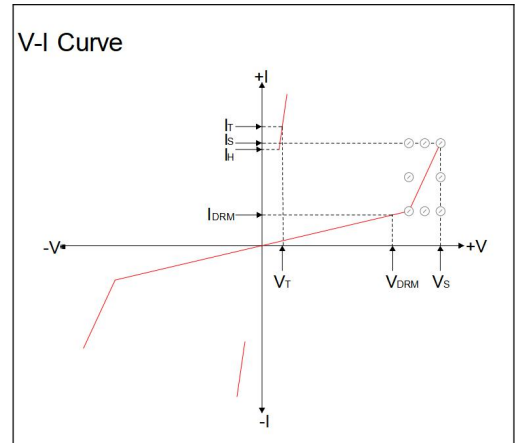
Part Number	IDRM@VDRM		VS①@IS		V _T @I _T		IH	C _O
	μA	V	V	mA	V	A	mA	pF
	max	min	max	max	max	max	min	max
DP0080TB	5	6	15	800	4	2.2	30	60
DP0300TB	5	25	40	800	4	2.2	30	60
DP0640TB	5	58	77	800	4	2.2	120	60
DP0720TB	5	65	87	800	4	2.2	120	60
DP0900TB	5	75	98	800	4	2.2	120	60
DP1100TB	5	90	130	800	4	2.2	120	60
DP1300TB	5	120	160	800	4	2.2	120	100
DP1500TB	5	140	180	800	4	2.2	120	100
DP1800TB	5	170	220	800	4	2.2	120	100
DP2300TB	5	190	260	800	4	2.2	120	60
DP2600TB	5	220	300	800	4	2.2	120	60
DP3100TB	5	275	350	800	4	2.2	120	60
DP3500TB	5	320	400	800	4	2.2	120	60
DP3800TB	5	340	450	800	4	2.2	120	60
DP4200TB	5	400	520	800	4	2.2	20	60

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

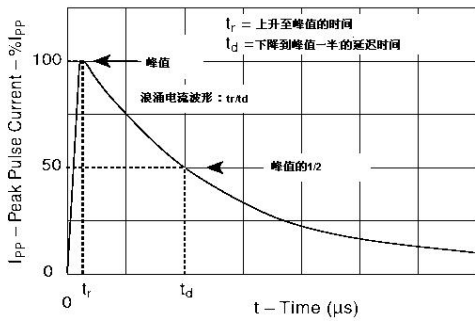
Parameter	Symbol	Value	Unit
T _J	Operating junction temperature range	-40~+150	°C
T _S	Storage temperature range	-65~+150	°C

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

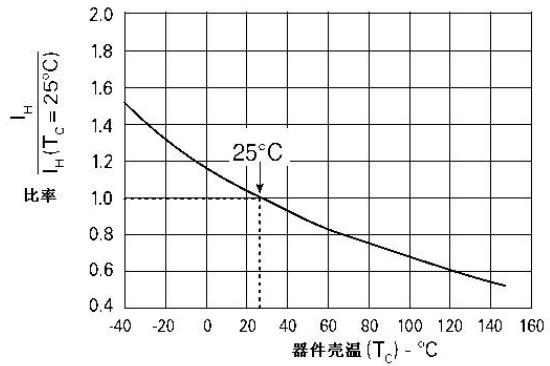
Symbol	Parameter
V_{DRM}	Peak off-state voltage
I_{DRM}	Off-state current
V_S	Switching voltage
I_S	Switching current
V_T	On-state voltage
I_F	On-state current
I_H	Holding current
C_o	Off-state capacitance



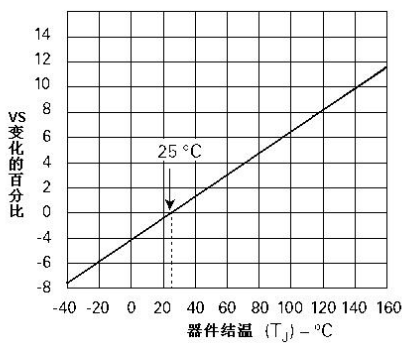
Tr x Td Pulse waveform



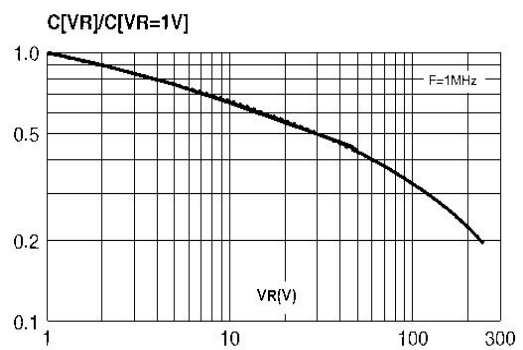
Normalized DC holding current vs. case temperature



Vs change vs. junction temperature



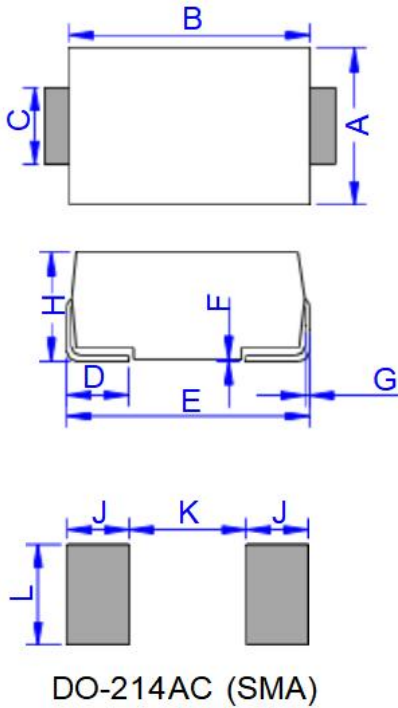
Co change vs. bias voltage ($V^R=1V$)



Surge rating

Series	$I_{PP}(A)$ min		
	8/20 μ s	10/360 μ s	10/1000 μ s
B	250	100	80

Package size

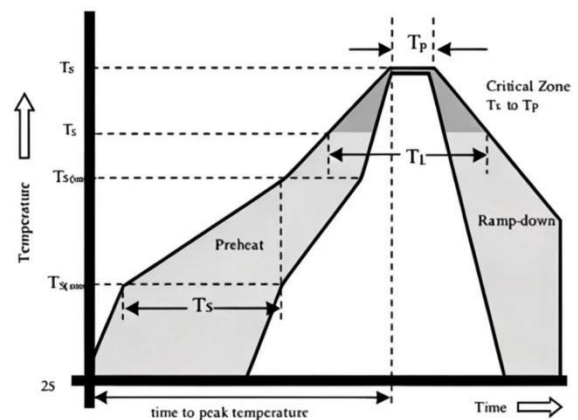


Ref.	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	2.60	3.00	0.102	0.118
B	4.15	4.65	0.163	0.183
C	1.25	1.65	0.049	0.065
D	0.95	1.52	0.037	0.060
E	4.90	5.30	0.193	0.209
F	0.051	0.203	0.002	0.008
G	0.15	0.31	0.006	0.012
H	2.00	2.44	0.079	0.096
J	2.00		0.079	
K		2.30		0.091
L	1.80		0.071	

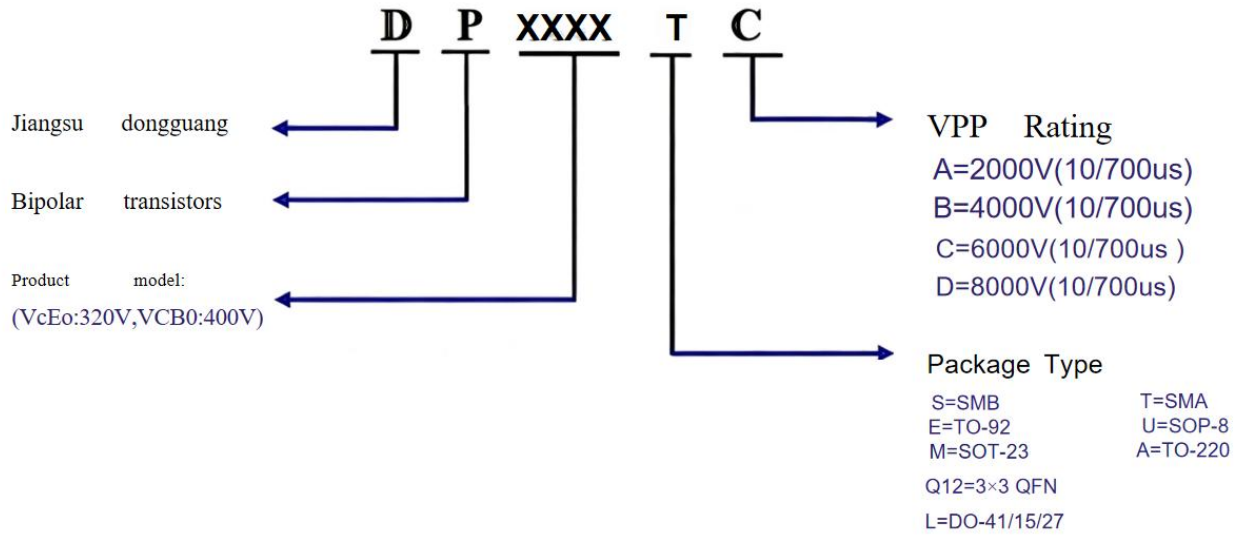
Welding parameters

Reflow Profile

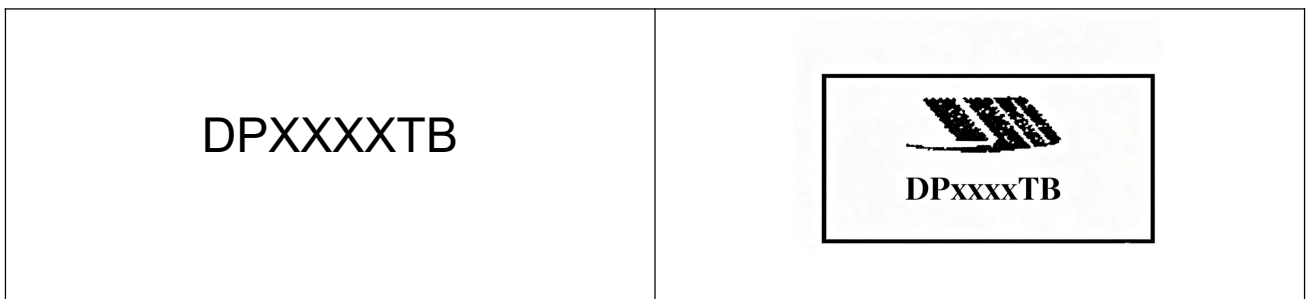
Reflow Condition		Pb-Free Assembly
Pre Heat	Temperature Min.	+150°C
	Temperature Max.	+200°C
	Time(Min to Max)	60 – 180 seconds
Average ramp up rate (Liquidus Temp (T _L) to peak)		3°C/second max
T _S (nus) to T _L - Ramp-up Rate		3°C/second max
Reflow	- Temperature (T _L) (Liquidus)	217°C
	- Time (T _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
PxxxxTA	DO-214AC(SMA)	5000PCS	13"

Note

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