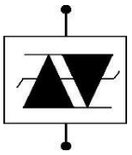
Product Overview

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



SOD-123FL

ELECTRICAL CHARACTERISTICS (T_A=25℃, continued)

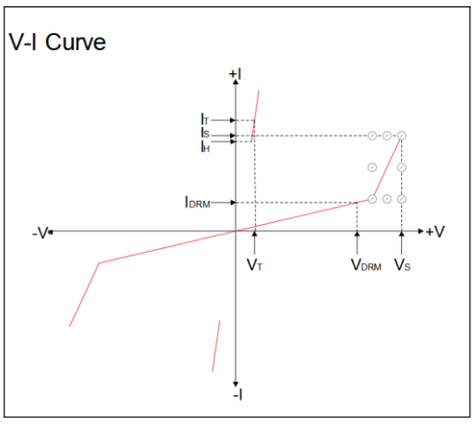
Part Number	IDRM@VDRM		VS①@IS		V_T@I_T		IH	C_O
	μA	V	V	mA	V	A	mA	pF
	max	min	max	max	max	max	min	max
DP0080FA	5	6	15	800	4	2.2	30	45
DP0300FA	5	25	40	800	4	2.2	30	45
DP0640FA	5	58	77	800	4	2.2	120	50
DP0720FA	5	65	87	800	4	2.2	120	50
DP0900FA	5	75	98	800	4	2.2	120	50
DP1100FA	5	90	130	800	4	2.2	120	50
DP1300FA	5	120	160	800	4	2.2	120	50
DP1500FA	5	140	180	800	4	2.2	120	50
DP1800FA	5	170	220	800	4	2.2	120	60
DP2300FA	5	190	260	800	4	2.2	120	60
DP2600FA	5	220	300	800	4	2.2	120	50
DP3100FA	5	275	350	800	4	2.2	120	40
DP3500FA	5	320	400	800	4	2.2	120	40
DP3800FA	5	340	450	800	4	2.2	120	40
DP4200FA	5	400	520	800	4	2.2	20	40

ABSOLUTE MAXIMUM RATINGS (T_A=25ºC, RH=45%-75%, unless otherwise noted)			
Symbol	Parameter	Value	Unit
T_J	Operating Junction Temperature	-40～+150	℃
T_S	Storage Temperature Range	-65～+150	℃

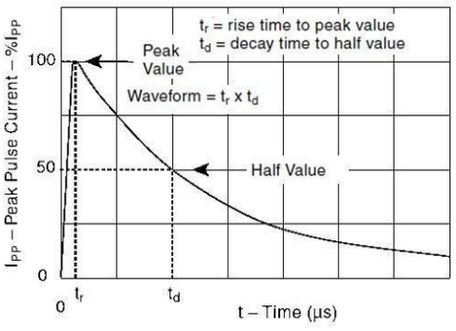
ELECTRICAL CHARACTERISTICS (T_A=25℃)

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

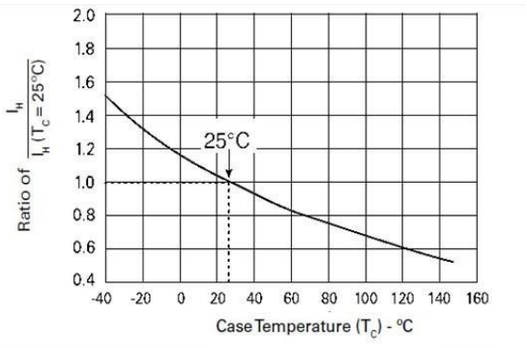
V-I Curve



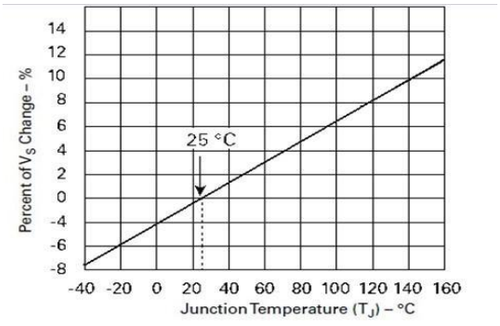
Tr x Td Pulse waveform



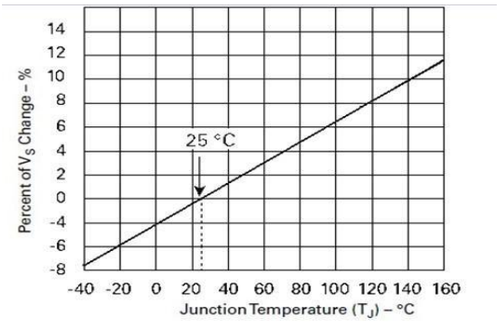
Normalized DC holding current vs. case temperature



Vs change vs. junction temperature



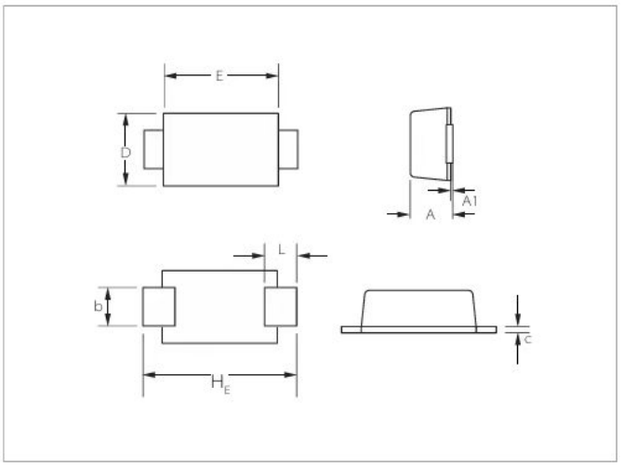
Co change vs. bias voltage （V_R=1V）



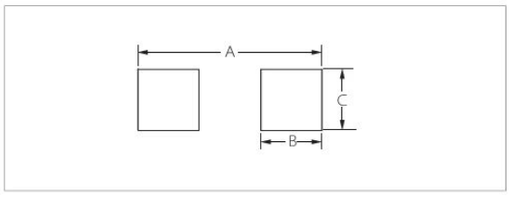
Surge rating

Series	V_{PP}(V) min
	10/700µs
A	2000

Package size



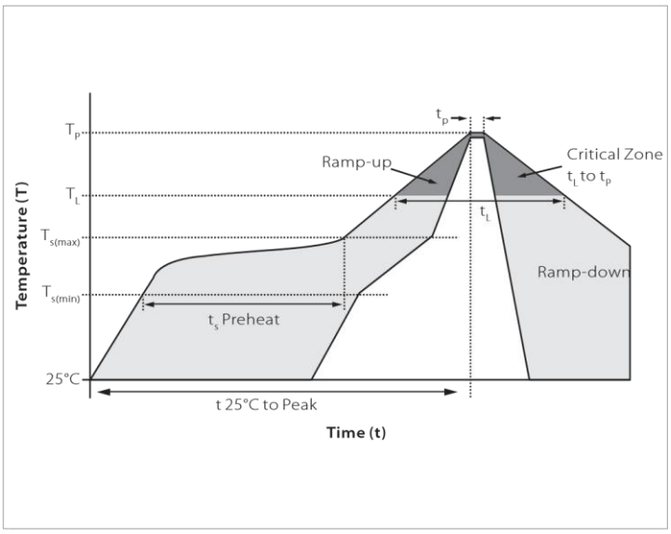
Ref.	Millimeters		Inc	hes
	Min.	Max.	Min.	Max.
A	0.95	1.45	0.037	0.057
A1	0	0.1	0	0.004
b	0.7	1.2	0.028	0.047
c	0.05	0.3	0.002	0.012
D	1.5	2	0.059	0.079
E	2.5	2.9	0.098	0.114
L	0.35	0.9	0.014	0.035
HE	3.4	3.9	0.134	0.154



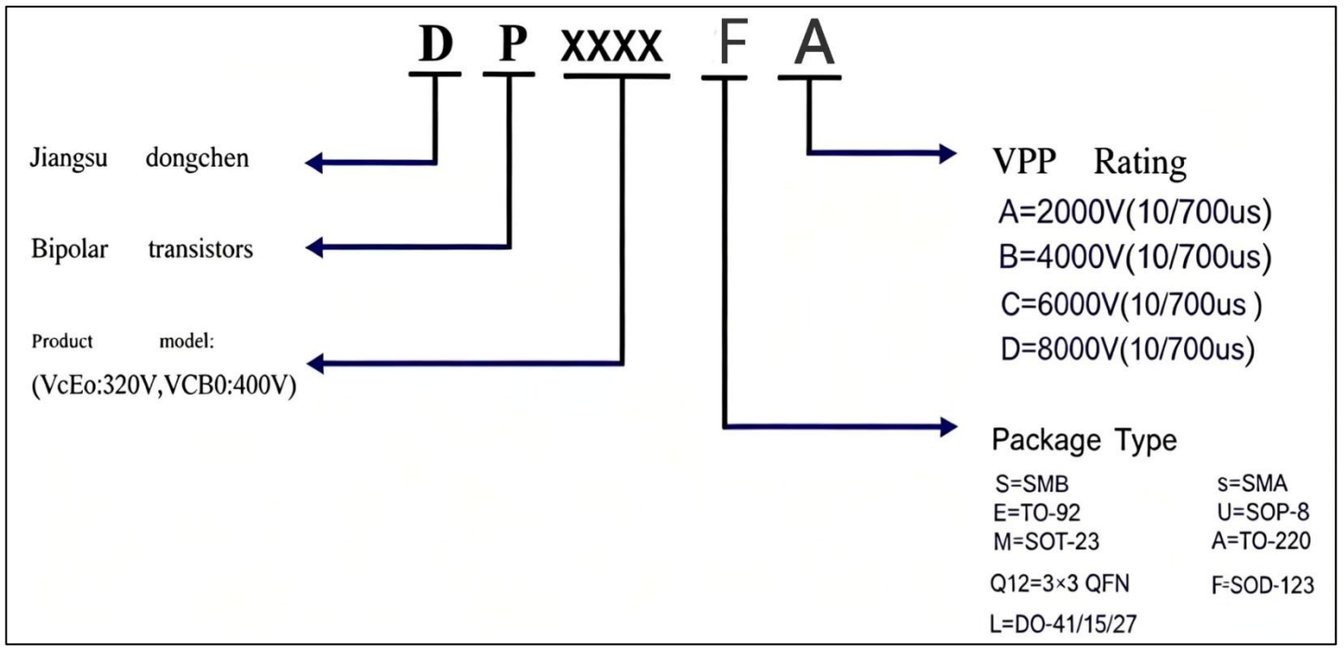
Ref.	Millimeters	Inches
A	4.2	0.165
B	1.5	0.059
C	1.2	0.047

Welding parameters

Reflow Condition	Lead–free assembly
Temperature Max ($T_{s(min)}$)	150°C
Temperature Max ($T_{s(max)}$)	200°C
Time (min to max) (t_s)	60 – 180 secs
Average ramp up rate (Liquidus Temp (T_L) to peak	3°C/second max
$T_{s(max)}$to T_L - Ramp-up Rate	3°C/second max
Temperature (T_L) (Liquidus)	217°C
Time (min to max) (t_L)	60 – 150 seconds
Peak Temperature (T_P)	260°C
Time within 5°C of actual peak Temperature (t_p)	20 – 40 seconds
Ramp-down Rate	6°C/second max
Time 25°C to peak Temperature (T_P)	8 minutes max.
Do not exceed	260°C



Naming conventions



Marking

DPXXXXFA	DPxxxxFA

Order instructions: Ordering method

Part Number	Component Package	QTY/Reel	Reel Size
DPxxxxFA	SOD-123FL	3000PCS	7”

Note

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