Thyristor Surge Suppressor
Surface Mount - 100A - STPCxxx

Description

STPCxxx Series SMB thyristor surge suppressors protect telecommunications equipment such as modems, line cards, fax machines, and other CPE.
The Series are used to enable equipment to meet various regulatory requirements including GR 1089, ITU K.20, K.21 and K.45, IEC 60950, UL 60950, and TIA-968 (formerly known as FCC Part 68).

SMB (DO-214AA)

Features

- Silicon technology
- Cannot be damaged by voltage
- Low capacitance
- Eliminate voltage overshoot
- Epoxy resin package
- Will not fatigue
- Complies with following standards:
  - GR1089
  - ITU K.20, K.21 and K.45
  - IEC 60950
  - UL 60950
  - TIA-968
- RoHS Compliant

Mechanical Characteristics

- Package: SMB (3.67×5.4×2.3mm)
- Lead Finish: Matte Tin
- Case Material: “Green” Molding Compound.
- UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020

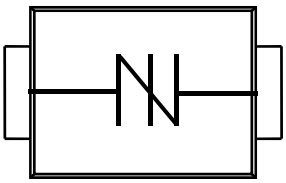
Applications

- COMMERCIAL SYSTEMS
- INDUSTRIAL & INSTRUMENTATION
- COMMUNICATIONS

Marking Information

SxxC = Type Code
YYWW = Date Code

Pin Configuration



Summary of Packing Options

Package	Packing Description	Packing Quantity	Industry Standard
SMB	Tape/Reel,13" reel	3000	EIA-481-1
	Tape/Reel,7" reel	500	EIA-481-1

Absolute Maximum Ratings

Parameter	Symbol	Value	Units	Remarks
Peak Pulse Voltage	V_{PP}	6000	V	10/700us
Peak Pulse Current	I_{PP}	100	A	10/1000us
Peak Pulse Current	I_{PK}	400	A	8/20us
Peak One-cycle Surge Current	I_{TSM}	30	A	60Hz
Rate of Rise of Current	di/dt	500	A/us	
Typical Thermal Resistance Junction to Lead	$R_{\theta JL}$	0	℃/W	
Typical Thermal Resistance Junction to Ambient	$R_{\theta JA}$	0	℃/W	
Operating Temperature Range	T_J	0	℃	
Storage Temperature Range	T_{STG}	0	℃	

Electrical Characteristics (T_A=25°C unless otherwise noted)

Part Number	Marking	I_H mA MIN	V_S V 100KV/S MAX	I_{S_MAX} mA	V_T V @ I_T MAX	I_T A	I_D uA @ V_D MAX	V_D V	C_O pF 1MHz,2V_{DC} TYP
STPC6	S6C	40	25	500	4	1	5	6	105
STPC15	S15C	40	30	500	4	1	5	15	105
STPC25	S25C	40	40	500	4	1	5	25	100
STPC58	S58C	120	77	800	4	1	5	58	95
STPC62	S62C	120	85	800	4	1	5	62	95
STPC68	S68C	120	93	800	4	1	5	68	95
STPC100	S100C	120	133	800	4	1	5	100	90
STPC120	S120C	120	160	800	4	1	5	120	90
STPC130	S130C	120	173	800	4	1	5	130	85
STPC180	S180C	120	220	800	4	1	5	180	80
STPC200	S200C	120	240	800	4	1	5	200	80
STPC220	S220C	120	293	800	4	1	5	220	75
STPC240	S240C	120	320	800	4	1	5	240	70
STPC270	S270C	120	360	800	4	1	5	270	65
STPC320	S320C	120	400	800	4	1	5	320	60
STPC400	S400C	120	530	800	4	1	5	400	45

Rating And Characteristic Curves (T_A=25°C unless otherwise noted)

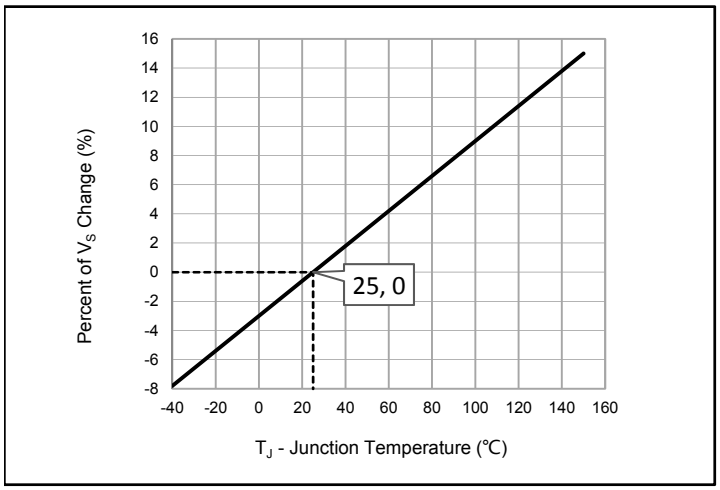


Fig.1 - Peak Pulse Current Rating

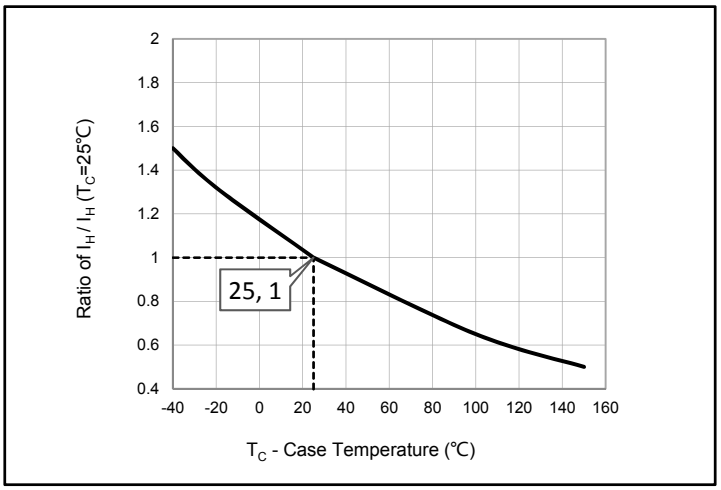


Fig.2 - Normalized DC Holding Current vs. Case Temperature

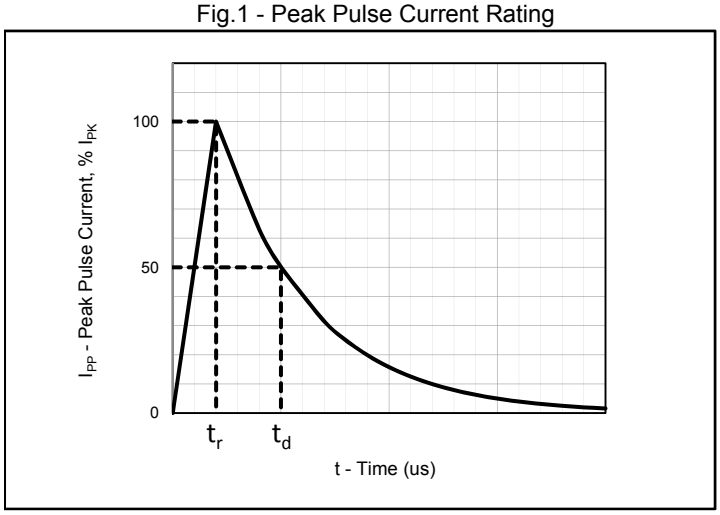


Fig.3 - tr/td us Pulse Waveform

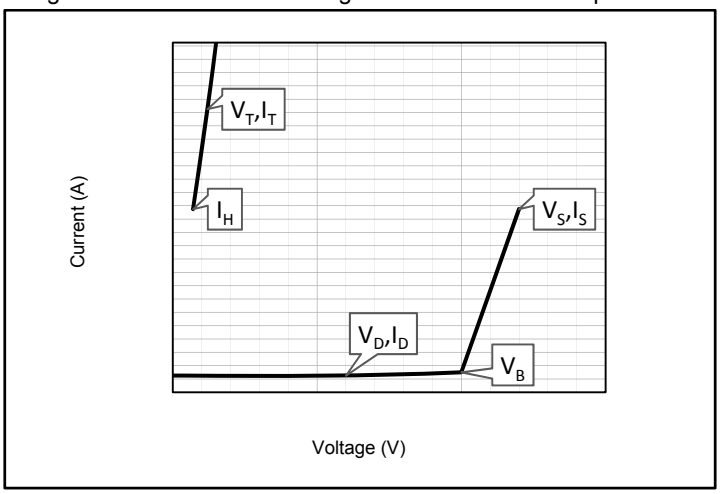


Fig.4 - VI Curve

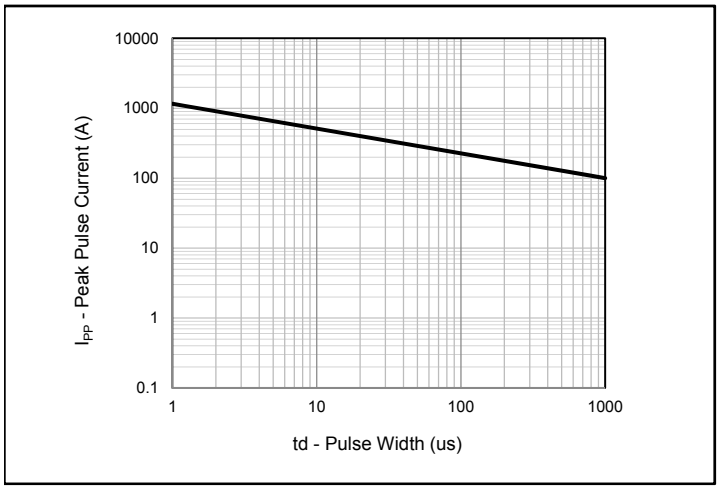


Fig.5 - Peak Pulse Current Rating

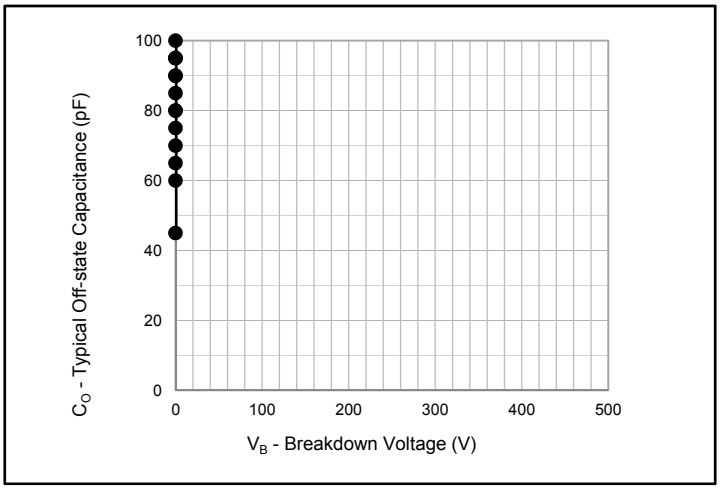
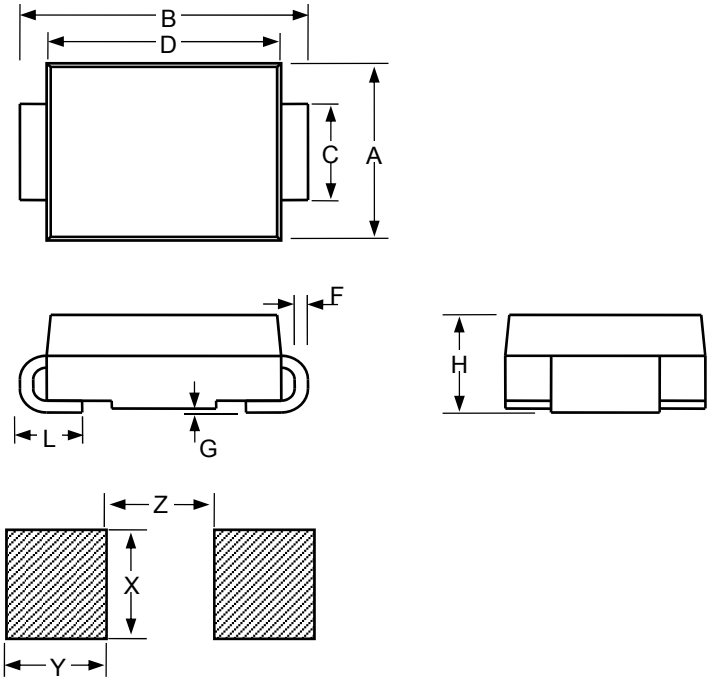


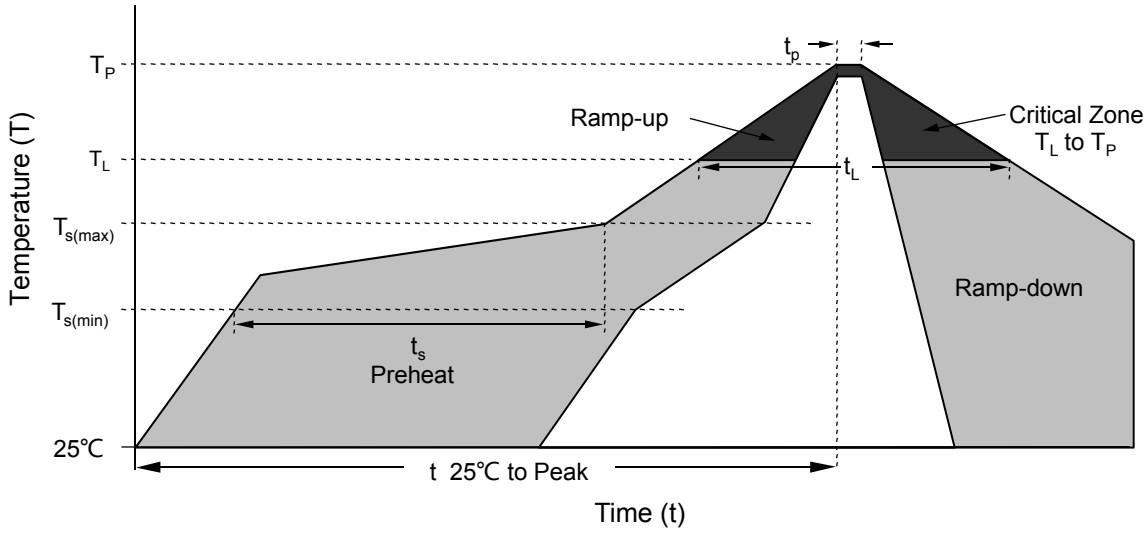
Fig.6 - Typical Off-state Capacitance

Package Dimensions



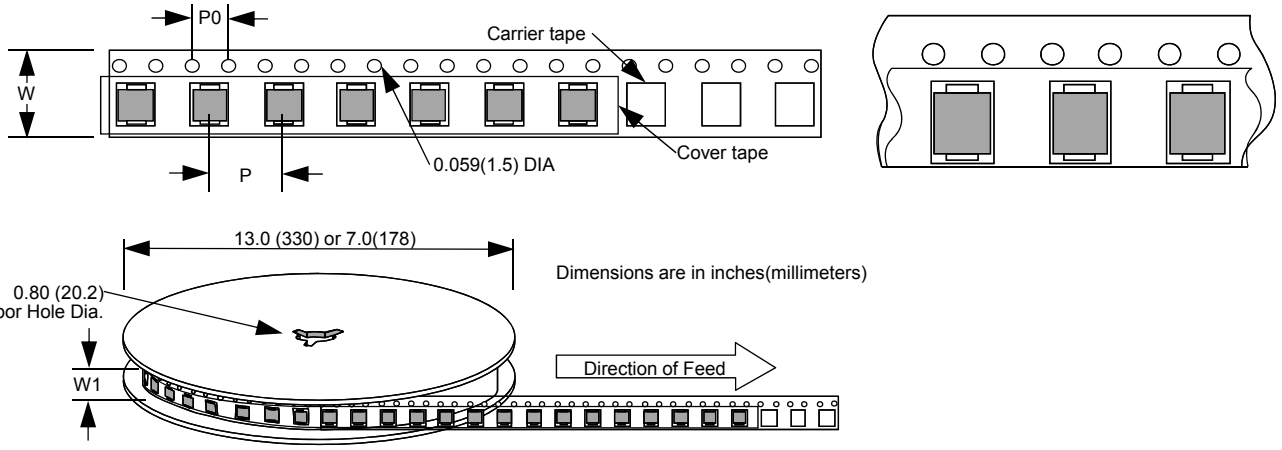
SMB						
Dimension	Inches			Millimeters		
	MIN	NOM	MAX	MIN	NOM	MAX
A	0.134	0.144	0.155	3.4	3.67	3.94
B	0.205	0.213	0.22	5.21	5.4	5.59
C	0.075	0.079	0.083	1.9	2	2.1
D	0.169		0.185	4.3		4.7
L	0.03		0.06	0.76		1.52
F	0.006		0.012	0.152		0.305
G	-		0.008	-		0.203
H	0.085	0.091	0.096	2.15	2.3	2.45
X		0.11			2.8	
Y		0.079			2	
Z		0.079			2	

Soldering Parameters



Reflow Condition		Lead-free assembly
Pre Heat	- Temperature Min ($T_{s(min)}$)	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 TL - Ramp-up Rate		3°C/second max
Reflow	- Temperature (T_L) (Liquidus)	217°C
	- Time (t_L)	60 – 150 secs
Peak Temperature (T_P)		$260^{+0/-5\ °C}$
Time within 5°C of actual peak Temperature (t_p)		20 – 40 secs
Ramp-down Rate		6°C/second max
Time 25°C to peak Temperature (t)		8 minutes Max.
Do not exceed		260°C

Tape and Reel Specification



Dimension	Inches			Millimeters		
	MIN	NOM	MAX	MIN	NOM	MAX
P		0.315			8	
P0		0.157			4	
W		0.472			12	
W1		0.492			12.5	

Disclaimer

Disclaimer

This document is for reference only, data sheet specifications and its information contained are intended to provide a product description only. Weichao Brand. reserves the right to make changes without notice for the specification of the products displayed herein to improve reliability, function or design or otherwise.

The product listed herein is designed to be used with ordinary electronic equipment or devices, and not designed to be used with equipment or devices which require high level of reliability and the malfunction of with would directly endanger human life (such as medical instruments, transportation equipment, aerospace machinery, nuclear-reactor controllers, fuel controllers and other safety devices). Customers using or selling weichaosemi components for use in such applications do so at their own risk and shall agree to fully indemnify weichaosemi and its subsidiaries harmless against all claims, damages and expenditures.

For additional information, please visit our website http://www.weichaosemi.com