Features

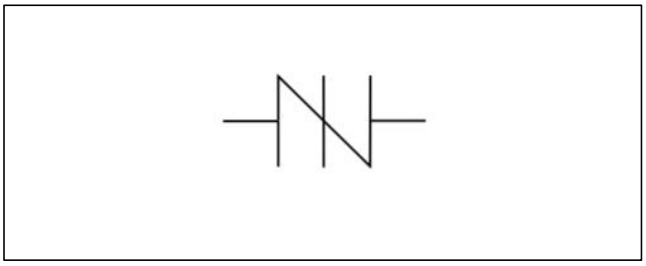
RoHS Compliant

- No degrade after multiple surge events.
- Low over shoot voltage
- Fail short if surge rating over specification
- Plastic package is flammability rated V-0 per UL-94
- IEC61000-4-2 +/-30kV both contact and air
- IEC61000-4-4 50A(5/50nS)
- AEC-Q101 qualified

Applications

SMC TSS is designed to protect 3kA 8/20uS surge current for those application which exposed in high voltage transient environmental. Such as RS-485, Automotive On Board Charger AC power line.

Function Diagram



Characteristics (T =25°C unless otherwise noted)

Part Number	Marking	V_{DRM}@5uA (Volts) Min	VS @100V/uS (Volts) Max	IH (mA) Min	IS (mA) Max	IT (A) Max	VT @ IT=2.2A	Capacitance (pF) 1MHz, 2V bias Min	Max
SC0080S3NLRP	SC-8N	6	25	50	800	2.2	4	80	150
SC3500S3NLRP	SC35N	320	400	50	800	2.2	4	150	400
SC3800S3NLRP	SC38N	350	430	50	800	2.2	4	150	400

Surge Ratings

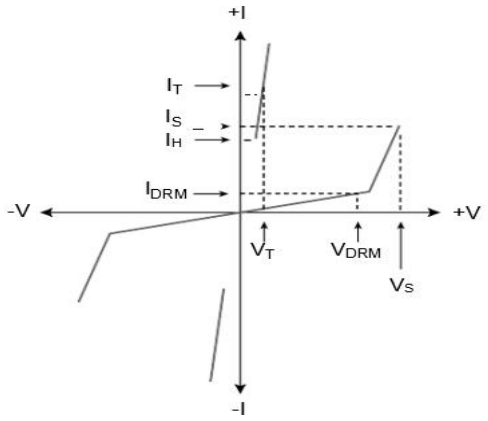
Series	I_{PP} 8/20 [1] 1.2/50 [2] A min	I_{TSM} 50/60 Hz A min	di/dt Amps/µs max
N	3000	250	420

Notes:

1 Current waveform in µs

2 Voltage waveform in µs

I-V Curve Characteristics



V_{DRM} Stand-off Voltage -- Maximum voltage that can be applied to the TSS without operation

V_S Switch on Voltage -- Maximum voltage that trigger the TSS to on state

V_T Turn on Voltage -- Voltage drop after TSS is triggered on

I_{DRM} Reverse Leakage Current -- Current measured at V_{DRM}

I_S Switch on Current -- Maximum current that trigger the TSS to on state

Ratings and Characteristic Curves (T =25°C unless otherwise noted)

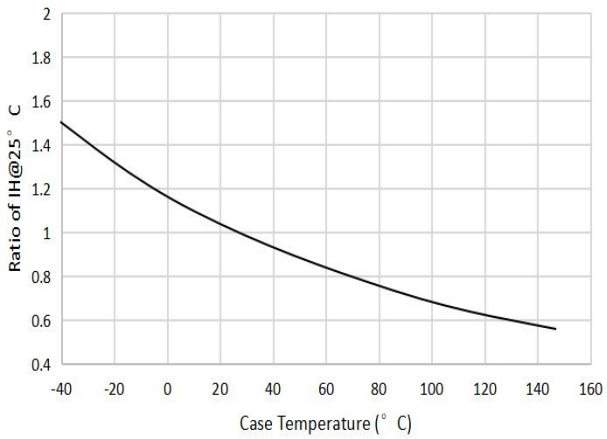


Figure 1. DC holding current Vs. Case temperature

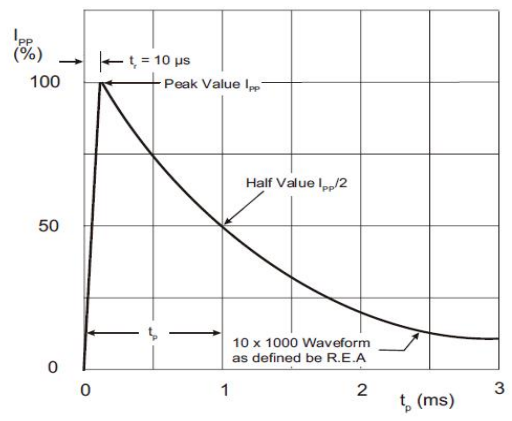


Figure2. Pulse waveform

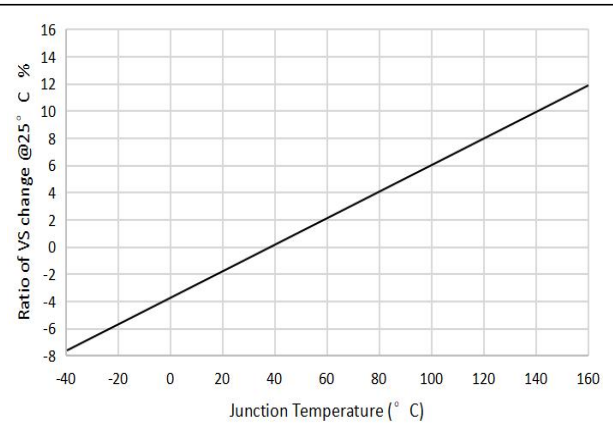
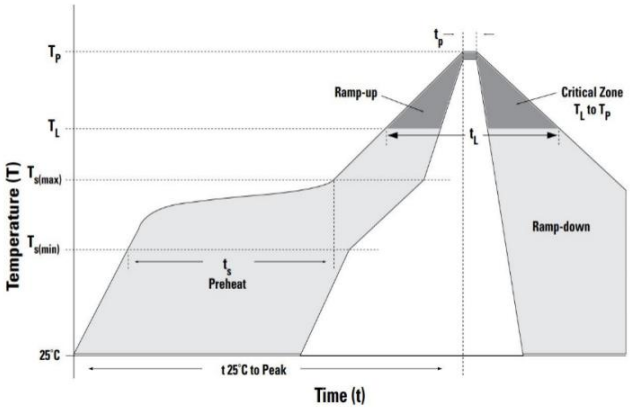


Figure 3. Peak pulse power rating curve

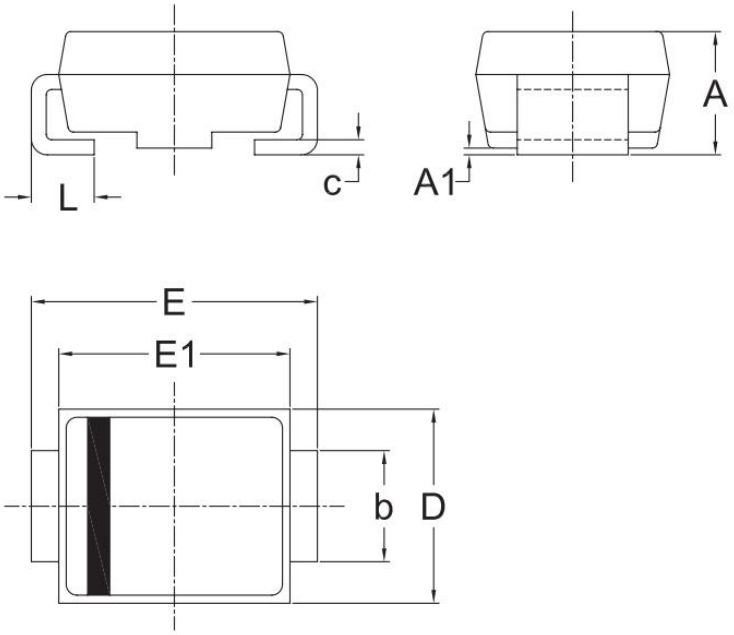
Soldering Parameters

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_A) to peak		3°C/second max
$T_{S(max)}$ to T_A - Ramp-up Rate		3°C/second max
Reflow	- Temperature (T_A) (Liquidus)	217°C
	- Time (min to max) (t_s)	60 – 150 seconds
Peak Temperature (T_P)		$260^{+0/-5}$ °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

Soldering profile



Dimensions



UNIT		A	A1	b	c	D	E	E1	L
mm	Max	2.83	0.30	3.10	0.25	6.15	8.15	7.05	1.60
	Min	2.33	0.00	2.80	0.15	5.85	7.65	6.75	0.90

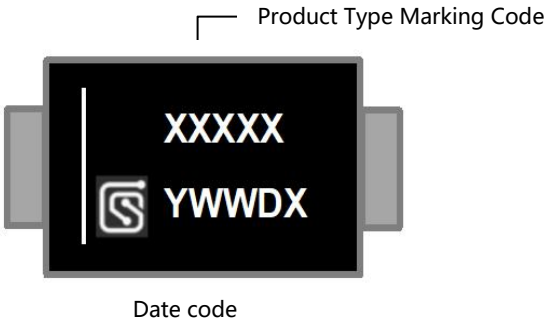
Remark: Dimensions D and E1 do not include mold flash & gate remain.

Part Numbering

SC XXXX S3 N L RP

- RP: Tape&Reel pack
- L: RoHS compliant
- N: Surge rating
- S3: DO-214AB
- XXXX: Reverse Standard off Voltage
- SC: Product series

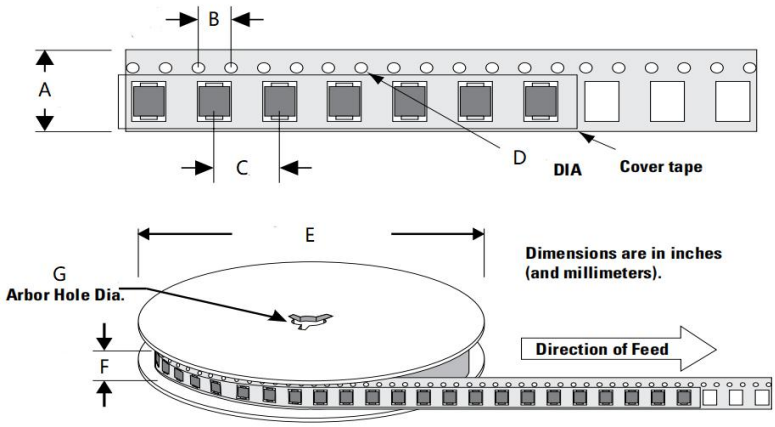
Part Marking

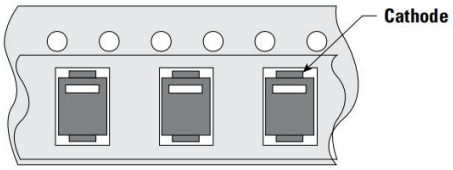


Packing

Part number	Package name	Small packing quantity	Packing method
SCXXXXS3NLRP	DO-214AB	3000	Tape & Reel

Tape and Reel Specification





Symbol	Millimeter
A	16.00±0.10
B	4.00±0.10
C	8.00±0.10
D	1.55±0.05
E	330.20±2.00
F	19.70±2.00
G	13.30±0.30

Revision history of Specification

Version	Change Items	Effective Date
1.0	Initial Release	13-Oct-2022