

Features

- Low profile package.
- Low on-state voltage.
- Excellent capability of absorbing transient surge.
- Quick response to surge voltage (ns Level).
- Eliminates overvoltage caused by fast rising transients.
- IEC61000-4-2 (ESD) $\pm 30\text{kV}$ (air), $\pm 30\text{kV}$ (contact).
- Non-degenerative.

RoHS
Compliant



Applications

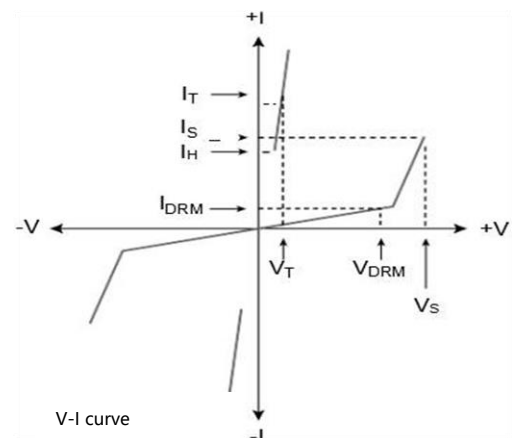
PXXXXSCLRP is a type of semiconductor component.

It is designed to protect baseband equipment such as phones, faxes, modems, line cards, CPE, DSL and intelligent Meter RS-485 from over voltage transients.

It is also widely used on surveillance CVBS port surge protection.

Electrical Characteristics

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_{T}	On-state current
I_{H}	Holding current
C_{O}	Off-state capacitance



Characteristics ($T_A=25^{\circ}\text{C}$, unless otherwise noted)

Part Number	Key Marking	$I_{\text{DRM}}@V_{\text{DRM}}$		$V_{\text{S}①}@I_{\text{S}}$		I_{H}	$V_{\text{T}}@I_{\text{T}}$		$\text{Co}②$
		μA	V	V	mA	mA	V	A	pF
		max		max	max		max	max	max
P0080SCLRP	P-8C	1	6	25	800	50 (Min)	4	2.2	60
P0300SCLRP	P03C	1	25	40	800	30 (Min)	4	2.2	80
P0640SCLRP	P06C	1	58	77	800	120 (Min)	4	2.2	80
P0720SCLRP	P07C	1	65	88	800	120 (Min)	4	2.2	75
P0900SCLRP	P09C	1	75	98	800	120 (Min)	4	2.2	70
P1100SCLRP	P11C	1	90	130	800	120 (Min)	4	2.2	70
P1300SCLRP	P13C	1	120	160	800	120 (Min)	4	2.2	60
P1500SCLRP	P15C	1	140	180	800	120 (Min)	4	2.2	55
P1800SCLRP	P18C	1	170	220	800	120 (Min)	4	2.2	50
P2300SCLRP	P23C	1	190	260	800	120 (Min)	4	2.2	50
P2600SCLRP	P26C	1	220	300	800	120 (Min)	4	2.2	45
P3100SCLRP	P31C	1	275	350	800	120 (Min)	4	2.2	45
P3500SCLRP	P35C	1	320	400	800	120 (Min)	4	2.2	45
P3800SCLRP	P38C	1	340	450	800	120 (Min)	4	2.2	45
P4200SCLRP	P42C	1	400	520	800	100(Max)	4	2.2	60
P4500SCLRP	P45C	1	440	580	800	100(Max)	4	2.2	60

① V_{S} is measured at 100kV/s

② Off-state capacitance is measured in $V_{\text{DC}}=2\text{V}$, $V_{\text{RMS}}=1\text{V}$, $f=1\text{MHz}$
Surge Ratings

Series	$I_{\text{PP}}(\text{A})\&V_{\text{PP}}(\text{V})$				di/dt
	2/10 μs	8/20 μs	10/700 μs	10/1000 μs	
	A	A	V	A	A/ μs max
	min	min	min	min	
C	500	400	6000	100	500

Absolute Maximum Ratings ($T_A=25^{\circ}\text{C}$, unless otherwise noted)

Parameter	Symbol	Value	Unit
Storage temperature range	T_{STG}	-60 to +150	$^{\circ}\text{C}$
Operating junction temperature range	T_{J}	-40 to +125	$^{\circ}\text{C}$

Soldering Parameters

Reflow Condition		Lead-free assembly (see Fig.2)
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/sec. max
$T_{s(max)}$ to T_L - Ramp-up Rate		3°C/sec. max
Reflow	- Temperature (T_L) (Liquidus)	+217°C
	- Time (min to max) (t_s)	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/sec. max
Time 25°C to Peak Temperature (T_p)		8 min. Max.
Do not exceed		+260°C

Ratings and Characteristic Curves ($T = 25^{\circ}\text{C}$ unless otherwise noted)

Fig.1: $t_r \times t_d$ pulse waveform

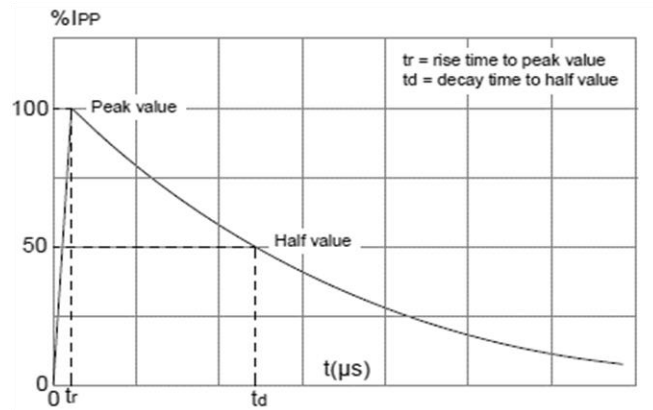


Fig.3: Normalized V_s change vs. junction temperature

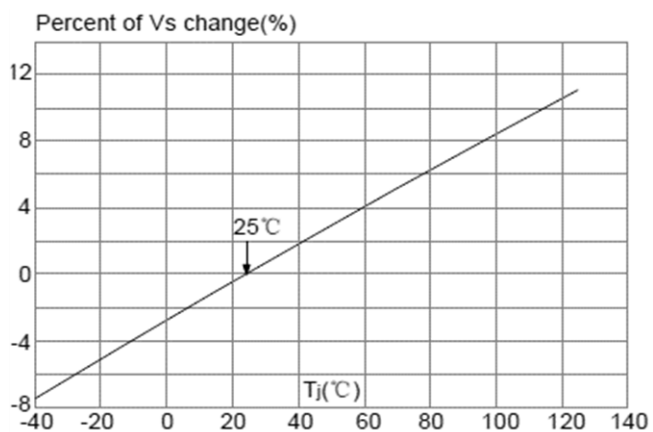


Fig.2: Reflow condition

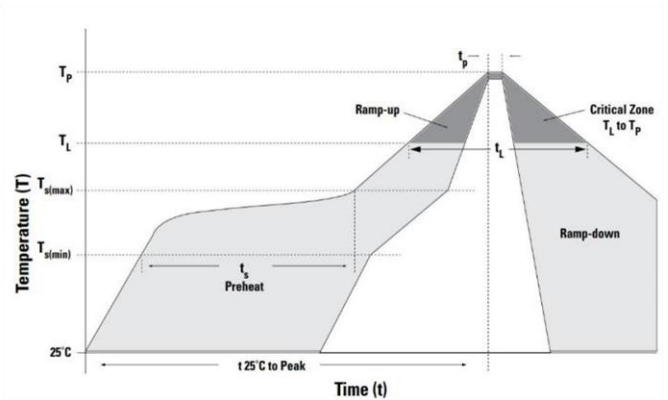
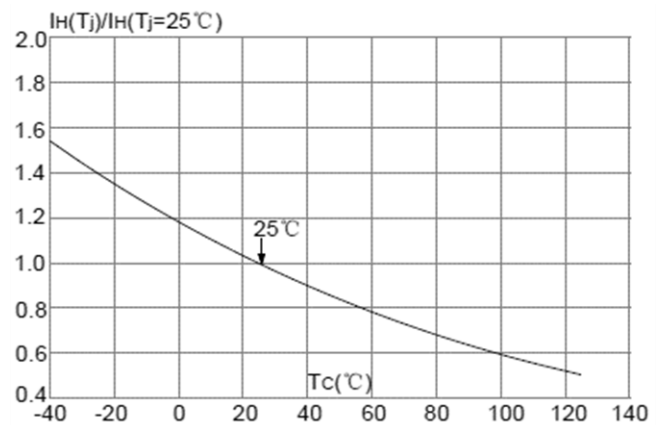
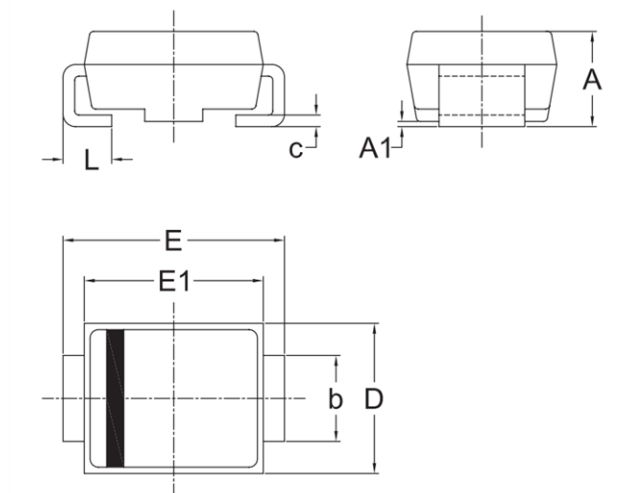


Fig.4: Normalized DC holding current vs. case temperature

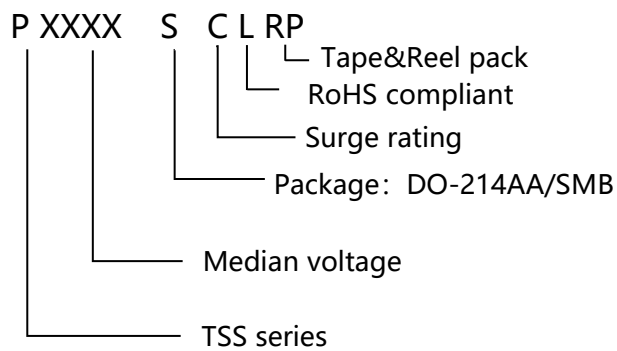


Package Mechanical Data

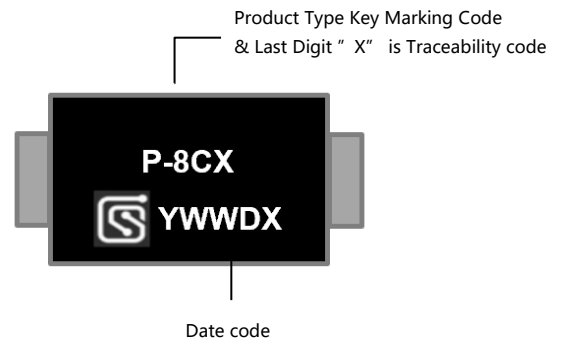


unit		A	A1	b	c	D	E	E1	L
max	mm	2.61	0.30	2.30	0.31	3.94	5.70	4.70	1.52
min		1.99	0	1.70	0.15	3.30	5.05	4.06	0.76

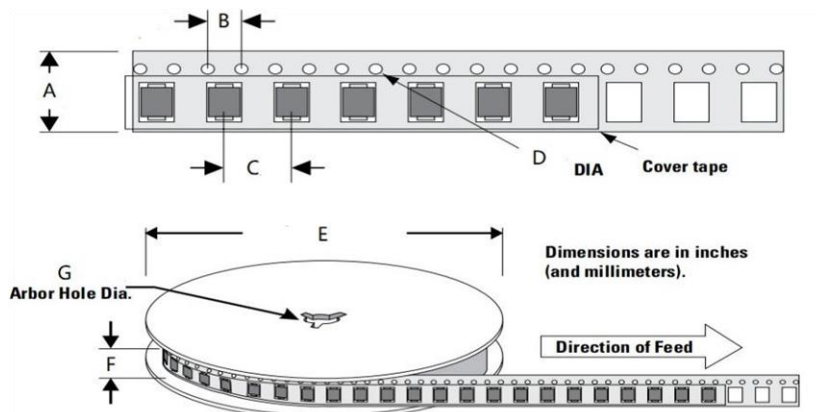
Part Numbering



Part Marking



Tape and Reel Specification



Ref.	Dimensions
	Millimeters
A	12.00±0.20
B	4.00±0.20
C	8.00±0.20
D	1.55±0.10
E	330.20±2.00
F	15.70±2.00
G	13.30±0.30

Part number	Package	REEL(PCS)	Description
PXXXXSCLRP	DO-214AA/SMB	3000	Tape & Reel

Revision history of Specification

Version	Change Items	Effective Date
1.0	Initial Release	1-July-2023
1.1	Update Marking	12-Apr-2024
1.2	Update P4200SCLRP& P4500SCLRP	18-Nov-2024