

## Description

Fast Delivery Time

Pxxx0EA,PXXX0EB,PXXX0EC Series SIDACtor Protection Thyristor protect telecommunications equipment such as ADSL Modems,Router, , Telephone, CCTV Camera,Digital Video Record,Video Capture Card,Twisted-pair video transmitter,CATV Splitter.....Etc.

Pxxx0EA,PXXX0EB,PXXX0EC Series SIDACtor Protection Thyristor are used to enable equipment to meet various regulatory requirements including GR 1089, ITU K.20/21,IEC 61000-4-5, YD/T 1082,YD/T 993,YD/T 950,TIA-968-A ,TIA-968-B



## Features

Compared to surge suppression using other technologies, Pxxx0EA,PXXX0EB,PXXX0EC Series devices offer absolute surge protection regardless of the surge current available and the rate of applied voltage (dv/dt). Pxxx0EA,PXXX0EB,PXXX0EC Series devices:

- 100% Lead-Free(RoHs Compliant )
- Cannot be damaged by voltage
- Eliminate hysteresis and heat dissipation typically found with clamping devices
- Eliminate voltage overshoot caused by fast-rising transients
- Are non-degenerative
- Have low capacitance, making them ideal for high-speed transmission equipment

## Electrical Characteristics

Parameter	Definition
$V_{DRM}$	<b>Peak Off-state Voltage</b> — maximum voltage that can be applied while maintaining off state
$V_S$	<b>Switching Voltage</b> — maximum voltage prior to switching to on state
$I_H$	<b>Holding Current</b> — minimum current required to maintain on state
$I_S$	<b>Switching Current</b> — maximum current required to switch to on state
$I_T$	<b>On-state Current</b> — maximum rated continuous on-state current
$V_T$	<b>On-state Voltage</b> — maximum voltage measured at rated on-state current
Capacitance	<b>Off-state Capacitance</b> — typical capacitance measured in off state
$I_{DRM}$	<b>Leakage Current</b> — maximum peak off-state current measured at $V_{DRM}$
$I_{PP}$	<b>Peak Pulse Current</b> — maximum rated peak impulse current
$I_{TSM}$	<b>Peak One-cycle Surge Current</b> — maximum rated one-cycle AC current
di/dt	<b>Rate of Rise of Current</b> — maximum rated value of the acceptable rate of rise in current over time

## Electrical Characteristics



Part Number	Marking	$V_{DRM}$	$V_s$	$I_H$	$I_s$	$I_T$	$V_T$	Capacitance
		@ $I_{DRM}=5\ \mu A$	@ $100V/\mu s$	$mA_{min}$	$mA_{max}$	$A_{max}$	@ $I_T=2.2Amps$	@ $1MHz, 2V$ bias
		$V_{min}$	$V_{max}$	$mA_{min}$	$mA_{max}$	$A_{max}$	$V_{max}$	pF
P0080EA	P0080EA	6	25	50	800	2.2	4	45
P0300EA	P0300EA	25	40	50	800	2.2	4	45
P0640EA	P0640EA	58	77	150	800	2.2	4	35
P0720EA	P0720EA	65	88	150	800	2.2	4	50
P0900EA	P0900EA	75	98	150	800	2.2	4	40
P1100EA	P1100EA	90	130	150	800	2.2	4	35
P1300EA	P1300EA	120	160	150	800	2.2	4	35
P1500EA	P1500EA	140	180	150	800	2.2	4	40
P1800EA	P1800EA	170	220	150	800	2.2	4	40
P2100EA	P2100EA	180	240	150	800	2.2	4	40
P2300EA	P2300EA	190	260	150	800	2.2	4	45
P2600EA	P2600EA	220	300	150	800	2.2	4	35
P3100EA	P3100EA	275	350	150	800	2.2	4	35
P3500EA	P3500EA	320	400	150	800	2.2	4	30
P0080EB	P0080EB	6	25	50	800	2.2	4	60
P0300EB	P0300EB	25	40	50	800	2.2	4	65
P0640EB	P0640EB	58	77	150	800	2.2	4	45
P0720EB	P0720EB	65	88	150	800	2.2	4	45
P0900EB	P0900EB	75	98	150	800	2.2	4	40
P1100EB	P1100EB	90	130	150	800	2.2	4	40
P1300EB	P1300EB	120	160	150	800	2.2	4	40
P1500EB	P1500EB	140	180	150	800	2.2	4	35
P1800EB	P1800EB	170	220	150	800	2.2	4	65
P2100EB	P2100EB	180	240	150	800	2.2	4	60

Part Number	Marking	V <sub>DRM</sub> @I <sub>DRM</sub> =5 μ A	V <sub>S</sub> @100V/μs	I <sub>H</sub>	I <sub>S</sub>	I <sub>T</sub>	V <sub>T</sub> @I <sub>T</sub> =2.2Amps	Capacitance @1MHz,2V bias
		V <sub>min</sub>	V <sub>max</sub>	mA <sub>min</sub>	mA <sub>max</sub>	A <sub>max</sub>	V <sub>max</sub>	pF
P2300EB	P2300EB	190	260	150	800	2.2	4	50
P2600EB	P2600EB	220	300	150	800	2.2	4	45
P3100EB	P3100EB	275	350	150	800	2.2	4	45
P3500EB	P3500EB	320	400	150	800	2.2	4	40
P0080EC	P0080EC	6	25	50	800	2.2	4	70
P0300EC	P0300EC	25	40	50	800	2.2	4	65
P0640EC	P0640EC	58	77	150	800	2.2	4	55
P0720EC	P0720EC	65	88	150	800	2.2	4	60
P0900EC	P0900EC	75	98	150	800	2.2	4	65
P1100EC	P1100EC	90	130	150	800	2.2	4	55
P1300EC	P1300EC	120	160	150	800	2.2	4	60
P1500EC	P1500EC	140	180	150	800	2.2	4	50
P1800EC	P1800EC	170	220	150	800	2.2	4	55
P2100EC	P2100EC	180	240	150	800	2.2	4	85
P2300EC	P2300EC	190	260	150	800	2.2	4	65
P2600EC	P2600EC	220	300	150	800	2.2	4	65
P3100EC	P3100EC	275	350	150	800	2.2	4	55
P3500EC	P3500EC	320	400	150	800	2.2	4	50
P4500EC	P4500EC	400	540	150	800	2.2	4	45

## Notes:

-All measurements are made at an ambient temperature of 25°C .I<sub>pp</sub> applies to -40°C through +85°C temperature range .

-Off-state capacitance(C<sub>o</sub>) is typical value.


\*For surge ratings,see next page.

### Surge Ratings

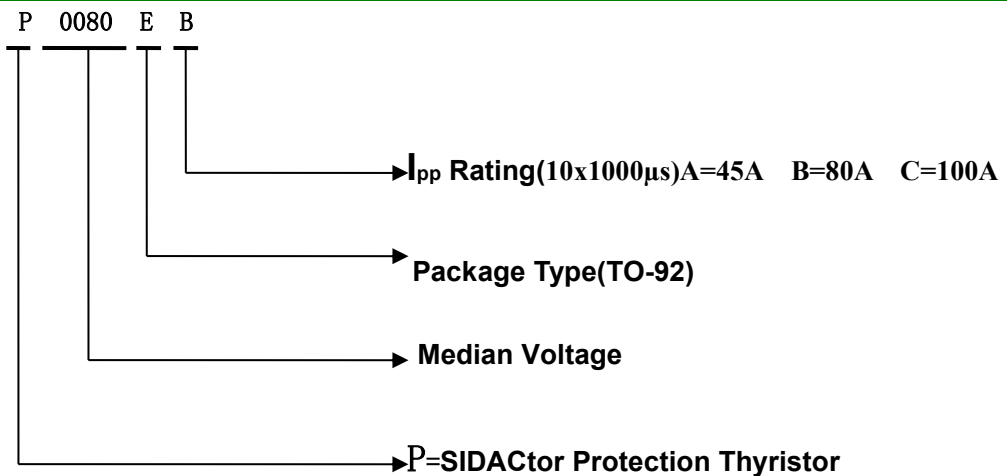


Series	$I_{pp}$ 2x10 $\mu$ s	$I_{pp}$ 8x20 $\mu$ s	$I_{pp}$ 10x160 $\mu$ s	$I_{pp}$ 10x560 $\mu$ s	$I_{pp}$ 10x1000 $\mu$ s	$I_{pp}$ 5x320 $\mu$ s	$I_{pp}$ 5x310 $\mu$ s	$I_{pp}$ 10x360 $\mu$ s	$I_{TSM}$ 50/60Hz	$di/dt$
	Amps	Amps	Amps	Amps	Amps	Amps	Amps	Amps	Amps	Amps/ $\mu$ s
A	150	150	90	50	45	75	75	75	20	500
B	250	250	150	100	80	100	100	125	25	500
C	500	400	200	150	100	200	200	175	30	500

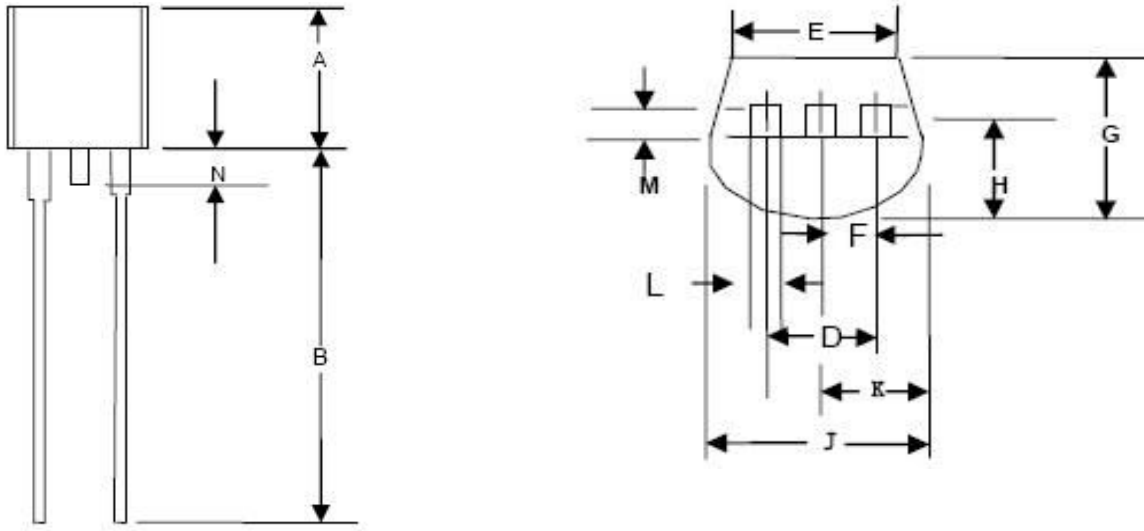
### Thermal Considerations

Package	TO-92	Symbol	Parameter	Value	Unit
		$T_J$	Operating Junction Temperature Range	-40 to +150	$^{\circ}C$
		$T_S$	Storage Temperature Range	-65 to +150	$^{\circ}C$
		$R_{\theta JA}$	Junction to Ambient on prited circuit	90	$^{\circ}C/W$

### Description of Part Number



Dimensions - TO-92



Dimension	Inches		Millimeters	
	Min	Max	Min	Max
A	0.176	0.196	4.40	4.98
B	0.500		12.1	
D	0.095	0.105	2.14	2.67
E	0.150		3.81	
F	0.046	0.054	1.16	1.37
G	0.135	0.145	3.43	3.68
H	0.088	0.096	2.23	2.44
J	0.176	0.186	4.47	4.70
K	0.088	0.096	2.23	2.44
L	0.013	0.019	0.33	0.48
M	0.013	0.017	0.33	0.43
N		0.060		1.52

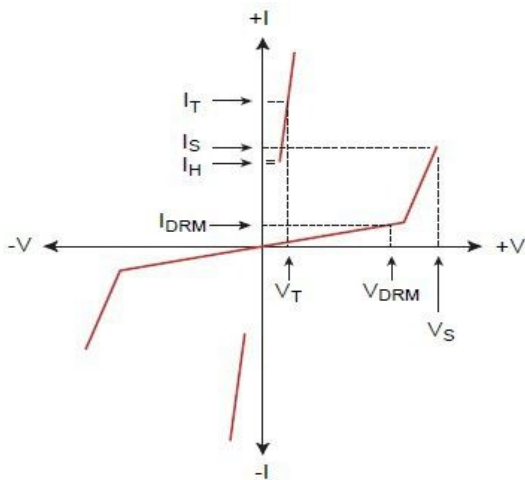
Packing Options



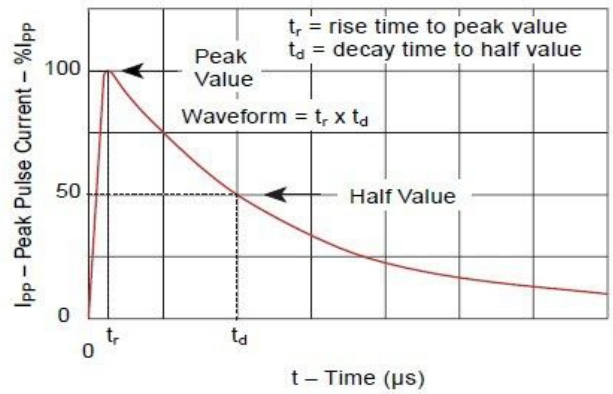
Package Type	Description	Packing Quantity	Industry Standard
EA,EB,EC	TO-92 Bulk Pack	1000 PCS	N/A

Characteristics Curve

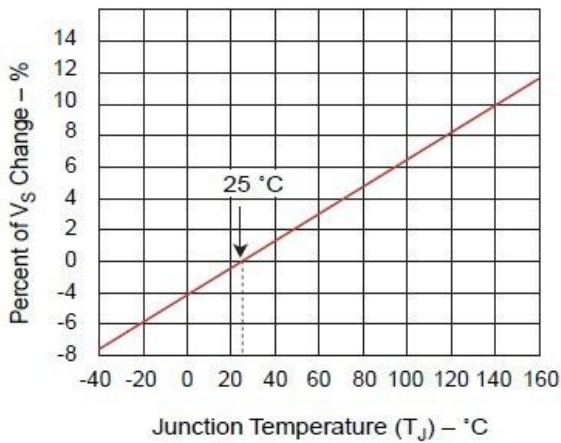
V-I Characteristics



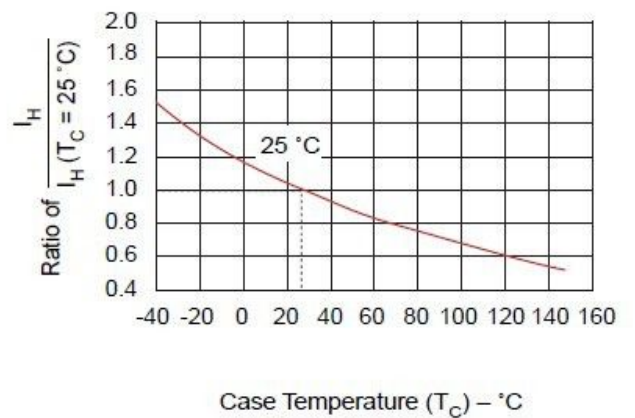
Tr x Td Pulse Waveform



Normalized Vs Change Versus Junction Temperature



Normalized DC Holding Current Versus Case Temperature



Sample pictures

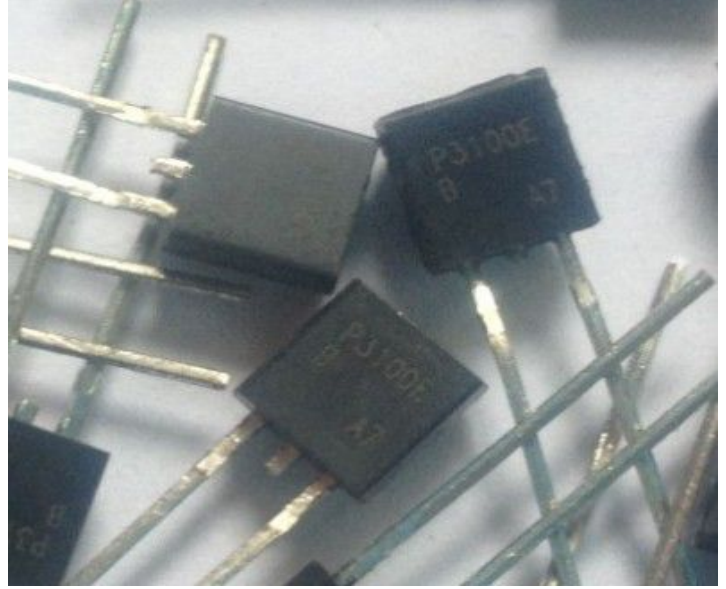
P0640EA

Fast Delivery Time



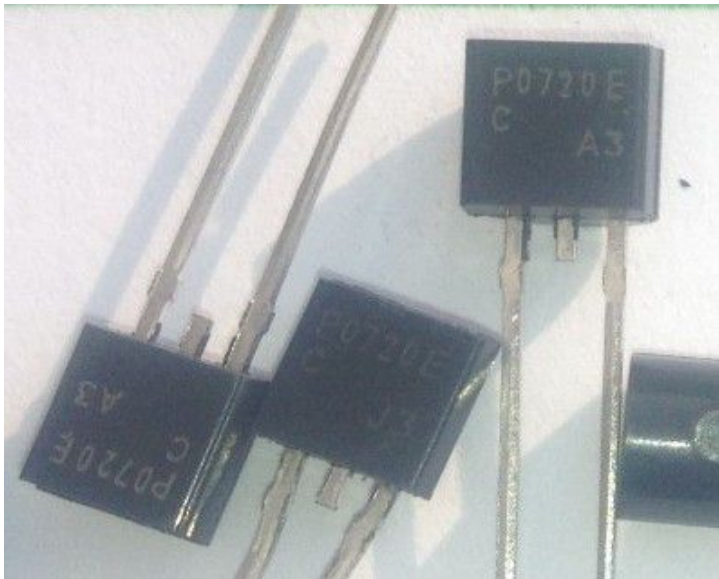
P3100EB

Fast Delivery Time



P0720EC

Fast Delivery Time



P3100EC

Fast Delivery Time

