

SIDACTor Protection Thyristor

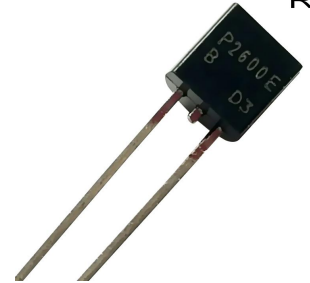
Description

Package: TO-92



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

Electrical Characteristics

continued



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}				V_{max}	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

Notes:

-All measurements are made at an ambient temperature of 25°C .Ipp applies to -40°C through +85°C temperature range .

-Off-state capacitance(Co) is typical value.

*For surge ratings,see next page.

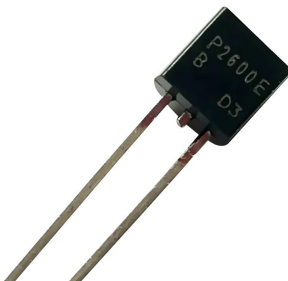
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Surge Ratings

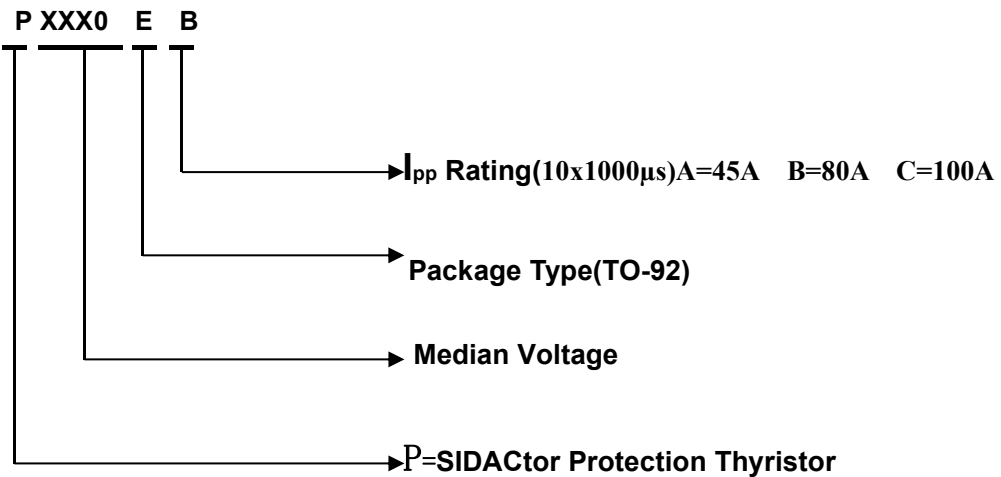


Series	I_{pp} 2x10 μ s	I_{pp} 8x20 μ s	I_{pp} 10x160 μ s	I_{pp} 10x560 μ s	I_{pp} 10x1000 μ s	I_{pp} 5x320 μ s	I_{pp} 5x310 μ s	I_{pp} 10x360 μ s	I_{TSM} 50/60Hz	di/dt
	Amps	Amps	Amps	Amps	Amps	Amps	Amps	Amps	Amps	Amps/ μ s
A	150	150	90	50	45	75	75	75	20	500
B	250	250	150	100	80	100	100	125	25	500
C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

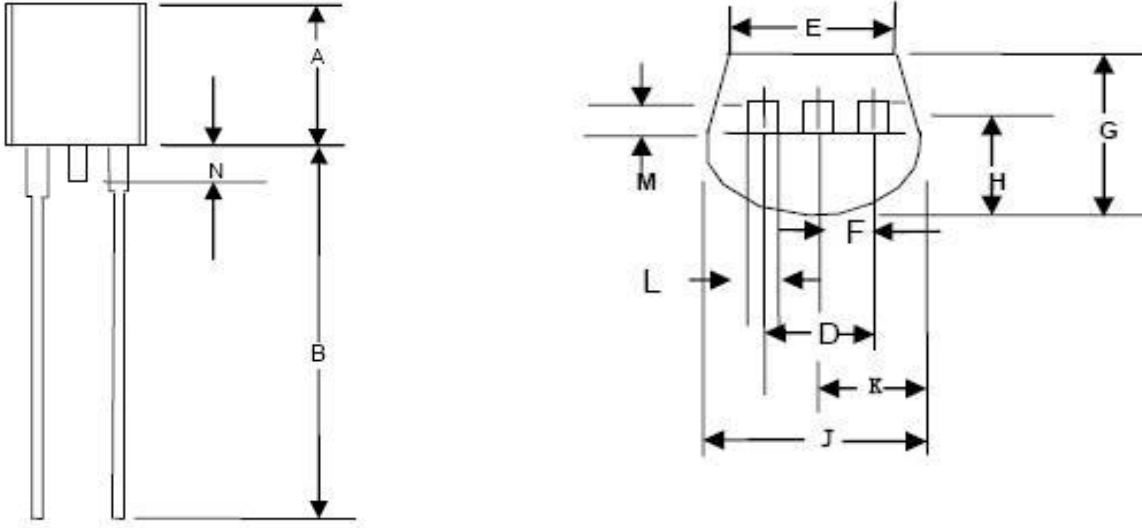
Thermal Considerations

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 printed 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				2.20

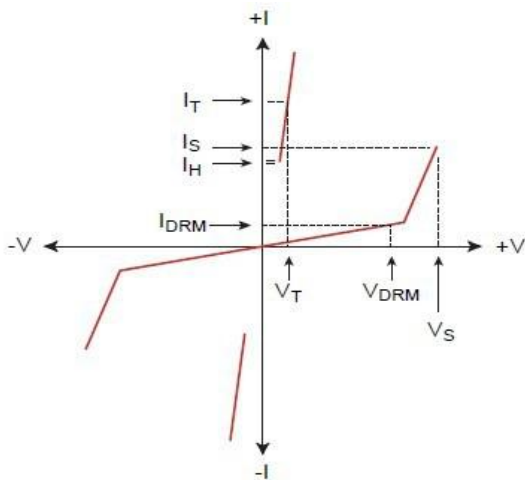
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Packing Options

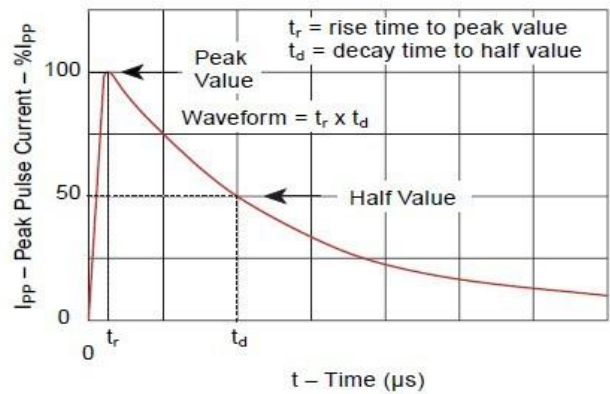
Package Type	Description	Packing Quantity	Industry Standard
E	TO-92 Bulk Pack	1000 PCS	N/A

Characteristics Curve

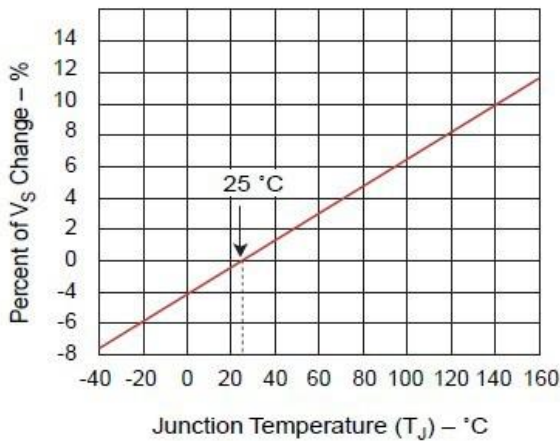
V-I Characteristics



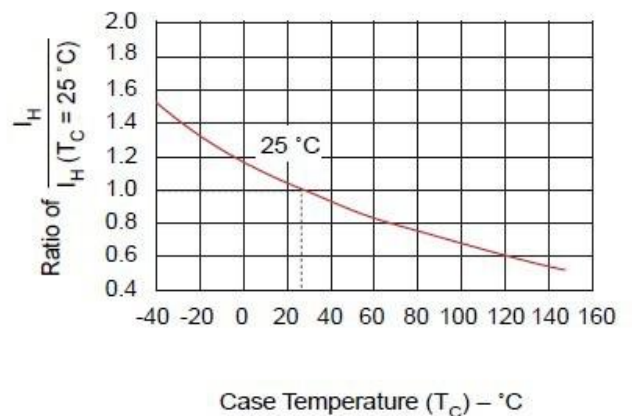
Tr x Td Pulse Waveform



Normalized Vs Change Versus Junction Temperature



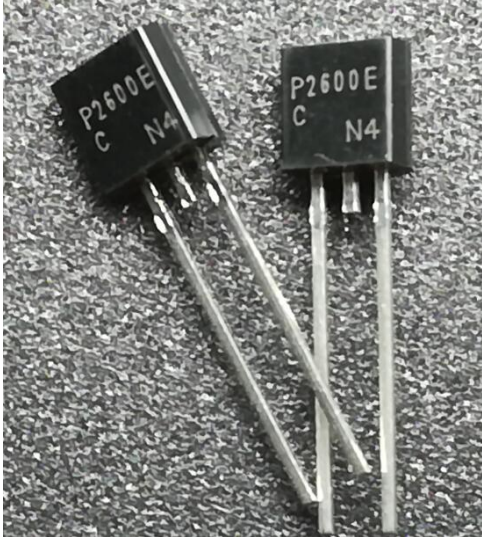
Normalized DC Holding Current Versus Case Temperature



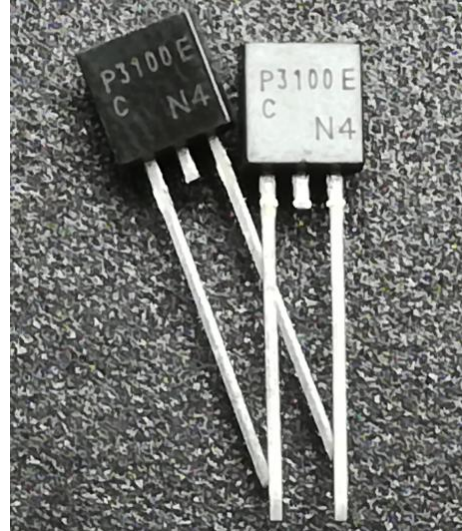
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Sample pictures

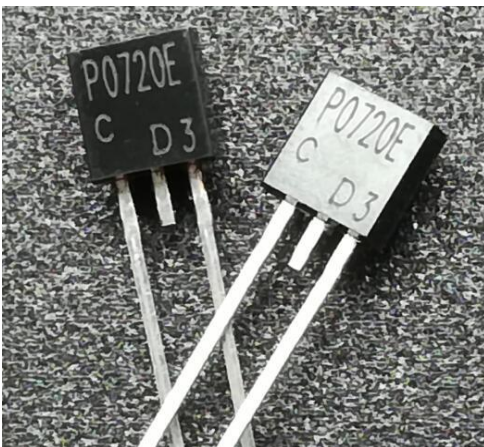
P2600EC (Marking:P2600EC)



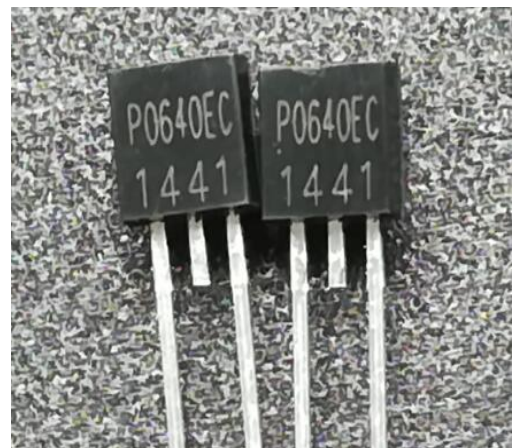
P3100EC (Marking:P3100EC)



P0720EC(Marking:P0720EC)



P0640EC(Marking:P0640EC)



Specifications are subject to change without notice

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