1 Data Sheets

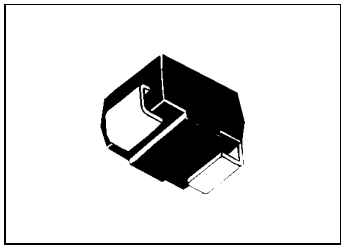
Presented in this chapter is the technical data for the SIDACtor, Teccor's line of solid state over voltage protection devices.

Complete specifications for the following product families are presented on the following pages:

DO-214 "SA" Series

The DO-214 "SA" series SIDACtor is a 50A rated solid state protection device designed for telecommunications applications such as modems, line cards, fax machines, etc.

The "SA" series SIDACtor is used to help equipment meet various regulatory requirements including: Bellcore 1089, ITU K.20 & K.21, IEC 950, UL 1459 & 1950 and FCC Part 68.



Electrical Parameters

Part Number	V_{DRM} Volts	V_S Volts	V_T Volts	I_{DRM} µAmps	I_S mAmps	I_T Amps	I_H mAmps	C_O pF
P0080SA	5	15	5	5	800	1	150	100
P0300SA	25	40	5	5	800	1	150	100
P0640SA	58	77	5	5	800	1	150	60
P0720SA	65	88	5	5	800	1	150	60
P0800SA	75	98	5	5	800	1	150	60
P1100SA	90	130	5	5	800	1	150	60
P1300SA	120	160	5	5	800	1	150	40
P1500SA	140	180	5	5	800	1	150	40
P1800SA	160	220	5	5	800	1	150	40
P2300SA	190	260	5	5	800	1	150	30
P2600SA	220	300	5	5	800	1	150	30
P3100SA	275	350	5	5	800	1	150	30
P3500SA	320	400	5	5	800	1	150	30

Notes:

- All measurements are made at an ambient temperature of 25°C.
- Listed SIDACtors are bi-directional. All electrical parameters & surge ratings apply to forward and reverse polarities.
- V_{DRM} is measured at I_{DRM}.
- V_S is measured at 100V/µs.
- Special voltage (V_S & V_{DRM}) and holding current (I_H) requirements are available upon request.
- Off-state capacitance is measured at 1MHz with a 2 volt bias and is a typical value.

Surge Ratings

Series	I_{PP} 10x160µs Amps	I_{PP} 10x560µs Amps	I_{TSM} 60Hz Amps	dI/dt Amps/µs
SA	100	50	20	500

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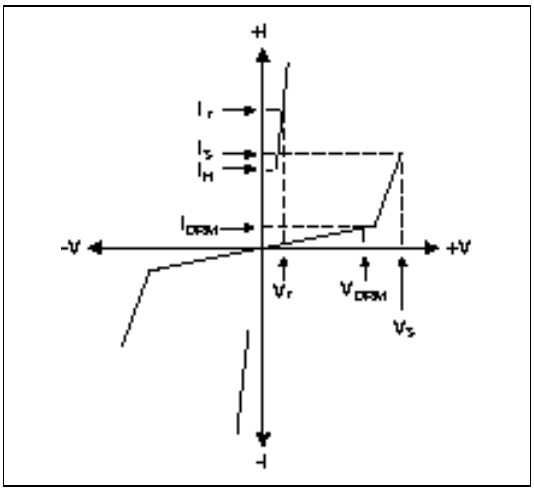
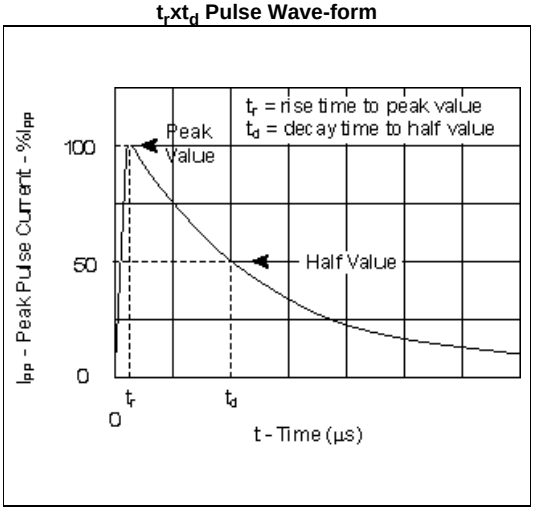
Thermal Considerations

Series	Symbol	Parameter	Value	Unit
SA	T_j	Junction Temperature Range	-40 to +150	°C
	T_s	Storage Temperature Range	-65 to +150	°C
	T_c	Maximum Case Temperature	+75	°C
	$R_{\theta jc}$	Thermal Resistance: junction to case	+28	°C/W
	$R_{\theta ja}$	Thermal Resistance: junction to ambient	+90	°C/W

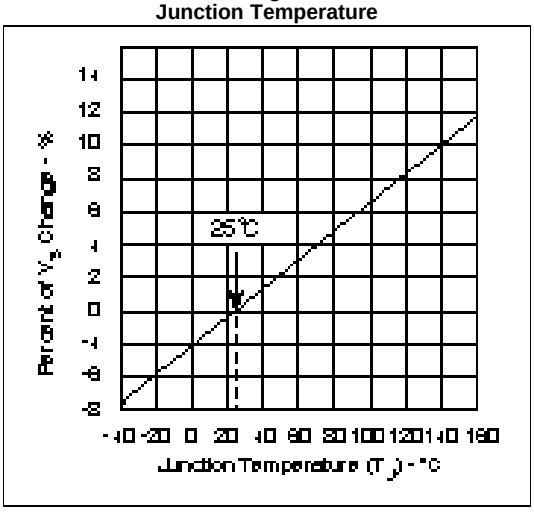
V-I Characteristics



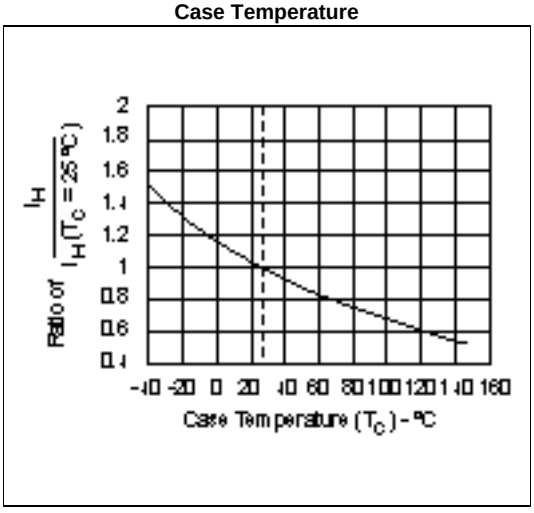
t_rxt_d Pulse Wave-form



Normalized V_S Change vs. Junction Temperature



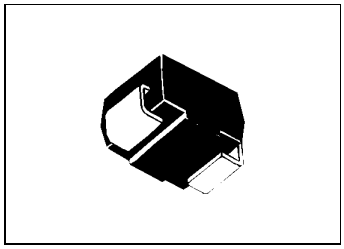
Normalized DC Holding Current vs. Case Temperature



DO-214 "SB" Series

The DO-214 "SB" series SIDACtor is a 100A rated solid state protection device designed for telecommunications applications such as modems, line cards, fax machines, etc.

The "SB" series SIDACtor is used to help equipment meet various regulatory requirements including: Bellcore 1089, ITU K.20 & K.21, IEC 950, UL 1459 & 1950 and FCC Part 68.



Electrical Parameters

Part Number	V_{DRM} Volts	V_S Volts	V_T Volts	I_{DRM} µAmps	I_S mAmps	I_T Amps	I_H mAmps	C_O pF
P0080SB	5	15	5	5	800	1	150	100
P0300SB	25	40	5	5	800	1	150	100
P0640SB	58	77	5	5	800	1	150	60
P0720SB	65	88	5	5	800	1	150	60
P0800SB	75	98	5	5	800	1	150	60
P1100SB	90	130	5	5	800	1	150	60
P1300SB	120	160	5	5	800	1	150	40
P1500SB	140	180	5	5	800	1	150	40
P1800SB	160	220	5	5	800	1	150	40
P2300SB	190	260	5	5	800	1	150	30
P2600SB	220	300	5	5	800	1	150	30
P3100SB	275	350	5	5	800	1	150	30
P3500SB	320	400	5	5	800	1	150	30

Notes:

- All measurements are made at an ambient temperature of 25°C.
- Listed SIDACtors are bi-directional. All electrical parameters & surge ratings apply to forward and reverse polarities.
- V_{DRM} is measured at I_{DRM}.
- V_S is measured at 100V/µs.
- Special voltage (V_S & V_{DRM}) and holding current (I_H) requirements are available upon request.
- Off-state capacitance is measured at 1MHz with a 2 volt bias and is a typical value.

Surge Ratings

Series	I_{PP} 10x160µs Amps	I_{PP} 10x560µs Amps	I_{TSM} 60Hz Amps	dI/dt Amps/µs
SB	150	100	30	500

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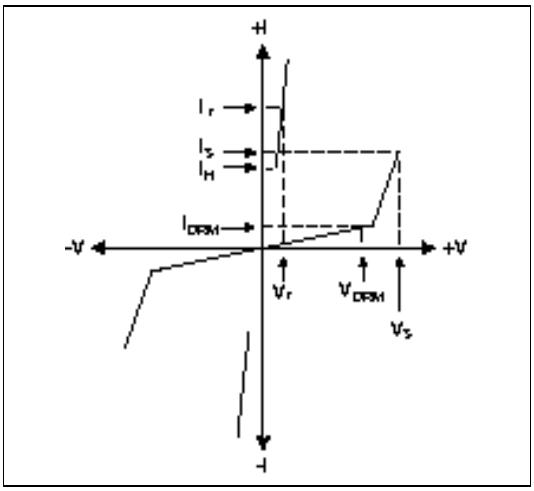
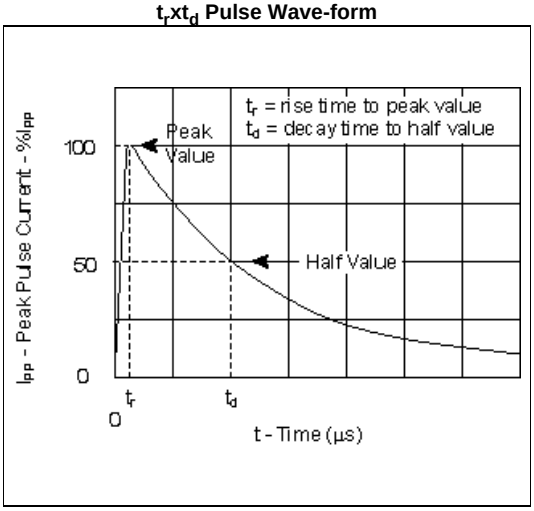
Thermal Considerations

Series	Symbol	Parameter	Value	Unit
SB	T_j	Junction Temperature Range	-40 to +150	°C
	T_s	Storage Temperature Range	-65 to +150	°C
	T_c	Maximum Case Temperature	+75	°C
	$R_{\theta jc}$	Thermal Resistance: junction to case	+28	°C/W
	$R_{\theta ja}$	Thermal Resistance: junction to ambient	+90	°C/W

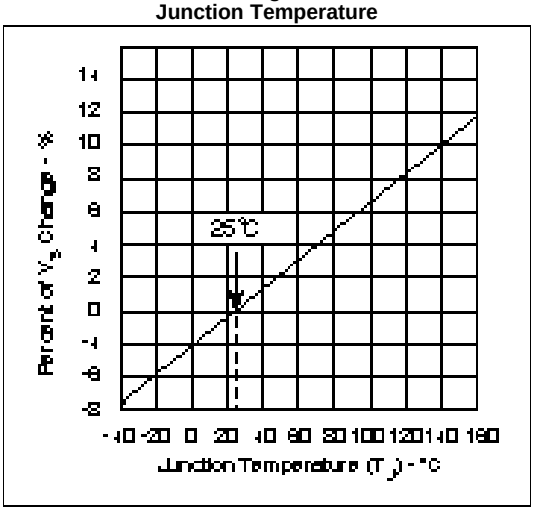
V-I Characteristics



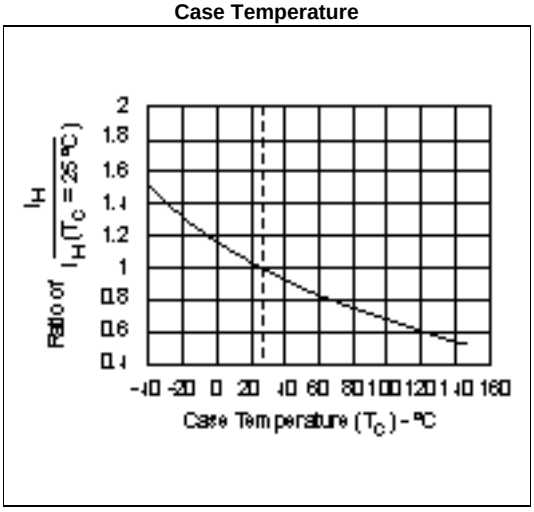
t_rxt_d Pulse Wave-form



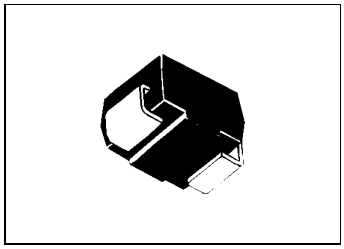
Normalized V_S Change vs. Junction Temperature



Normalized DC Holding Current vs. Case Temperature



DO-214 "SC" Series



The DO-214 "SC" series SIDACtor is a 500A rated solid state protection device designed for telecommunications systems that require Bellcore 1089 compliance without the use of additional series resistance.

Applications include xDSL transmission equipment, line cards, etc. The "SC" series SIDACtor is used to help equipment meet various regulatory requirements including: Bellcore 1089, ITU K.20 & K.21, IEC 950, UL 1459 & 1950 and FCC Part 68.

Electrical Parameters

Part Number	V_{DRM} Volts	V_S Volts	V_T Volts	I_{DRM} µAmps	I_S mAmps	I_T Amps	I_H mAmps	C_O pF
P0080SC	5	15	5	5	800	1	150	200
P0300SC	25	40	5	5	800	1	150	200
P0640SC	58	77	5	5	800	1	150	120
P0720SC	65	88	5	5	800	1	150	120
P0800SC	75	98	5	5	800	1	150	120
P1100SC	90	130	5	5	800	1	150	120
P1300SC	120	160	5	5	800	1	150	80
P1500SC	140	180	5	5	800	1	150	80
P1800SC	160	220	5	5	800	1	150	80
P2300SC	190	260	5	5	800	1	150	60
P2600SC	220	300	5	5	800	1	150	60
P3100SC	275	350	5	5	800	1	150	60
P3500SC	320	400	5	5	800	1	150	60

Notes:

- All measurements are made at an ambient temperature of 25°C.
- Listed SIDACtors are bi-directional. All electrical parameters & surge ratings apply to forward and reverse polarities.
- V_{DRM} is measured at I_{DRM}.
- V_S is measured at 100V/µs.
- Special voltage (V_S & V_{DRM}) and holding current (I_H) requirements are available upon request.
- Off-state capacitance is measured at 1MHz with a 2 volt bias and is a typical value.

Surge Ratings

Series	I_{PP} 2x10µs Amps	I_{PP} 10x160µs Amps	I_{PP} 10x1000µs Amps	I_{TSM} 60Hz Amps	dI/dt Amps/µs
SC	500	200	100	60	500

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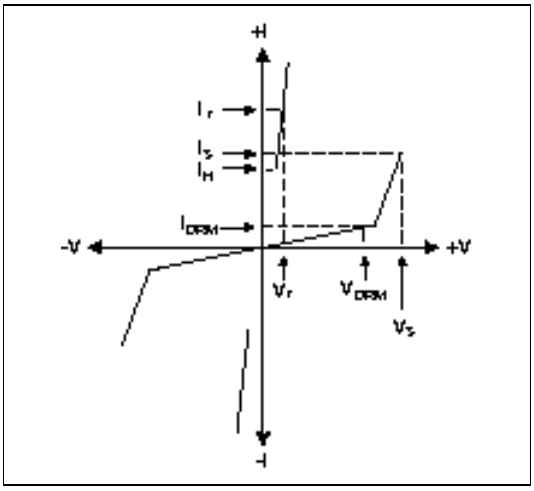
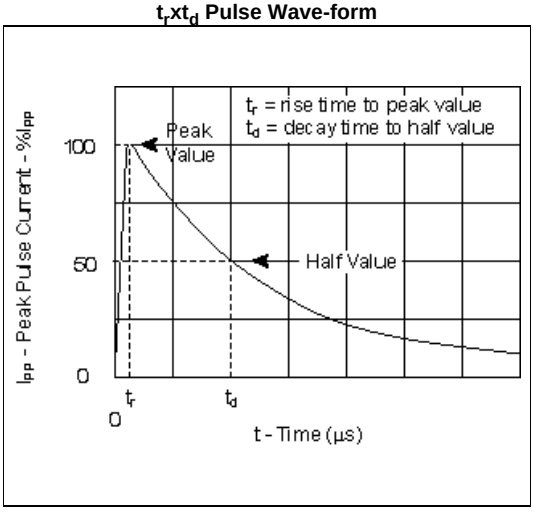
Thermal Considerations

Series	Symbol	Parameter	Value	Unit
SC	T_j	Junction Temperature Range	-40 to +150	°C
	T_s	Storage Temperature Range	-65 to +150	°C
	T_c	Maximum Case Temperature	+75	°C
	$R_{\theta jc}$	Thermal Resistance: junction to case	+26	°C/W
	$R_{\theta ja}$	Thermal Resistance: junction to ambient	+85	°C/W

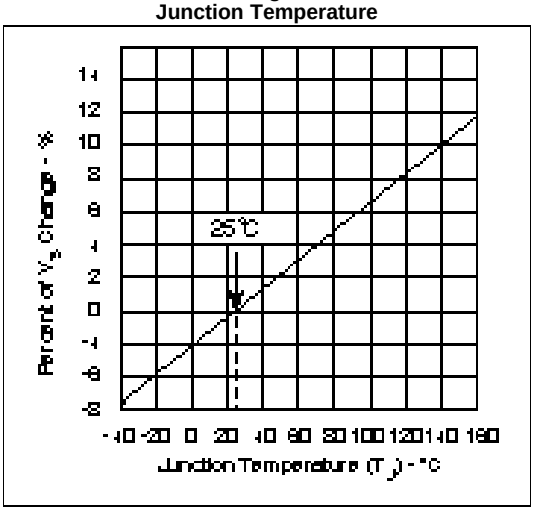
V-I Characteristics



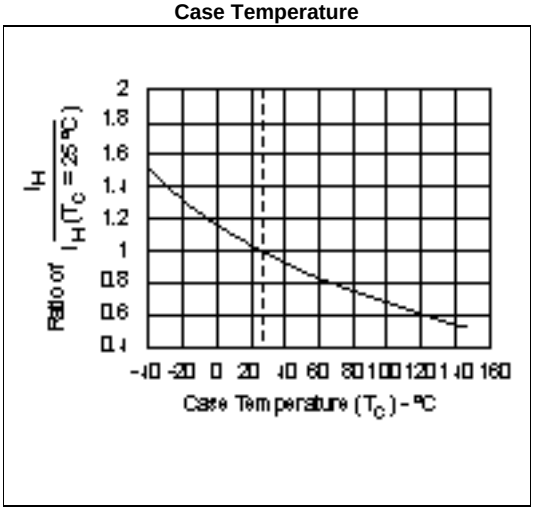
t_rxt_d Pulse Wave-form



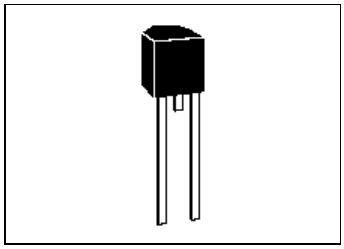
Normalized V_S Change vs. Junction Temperature



Normalized DC Holding Current vs. Case Temperature



TO-92 "EA" Series



The TO-92 "EA" series SIDACtor is a 50A rated solid state protection device designed for telecommunications applications such as modems, line cards, fax machines, etc.

The "EA" series SIDACtor is used to help equipment meet various regulatory requirements including: Bellcore 1089, ITU K.20 & K.21, IEC 950, UL 1459 & 1950 and FCC Part 68.

Electrical Parameters

Part Number	V_{DRM} Volts	V_S Volts	V_T Volts	I_{DRM} µAmps	I_S mAmps	I_T Amps	I_H mAmps	C_O pF
P0080EA	5	15	5	5	800	1	150	100
P0300EA	25	40	5	5	800	1	150	100
P0640EA	58	77	5	5	800	1	150	60
P0720EA	65	88	5	5	800	1	150	60
P0800EA	75	98	5	5	800	1	150	60
P1100EA	90	130	5	5	800	1	150	60
P1300EA	120	160	5	5	800	1	150	40
P1500EA	140	180	5	5	800	1	150	40
P1800EA	160	220	5	5	800	1	150	40
P2300EA	190	260	5	5	800	1	150	30
P2600EA	220	300	5	5	800	1	150	30
P3100EA	275	350	5	5	800	1	150	30
P3500EA	320	400	5	5	800	1	150	30

Notes:

- All measurements are made at an ambient temperature of 25°C.
- Listed SIDACtors are bi-directional. All electrical parameters & surge ratings apply to forward and reverse polarities.
- V_{DRM} is measured at I_{DRM}.
- V_S is measured at 100V/µs.
- Special voltage (V_S & V_{DRM}) and holding current (I_H) requirements are available upon request.
- Off-state capacitance is measured at 1MHz with a 2 volt bias and is a typical value.

Surge Ratings

Series	I_{PP} 10x160µs Amps	I_{PP} 10x560µs Amps	I_{TSM} 60Hz Amps	dI/dt Amps
EA	100	50	20	500

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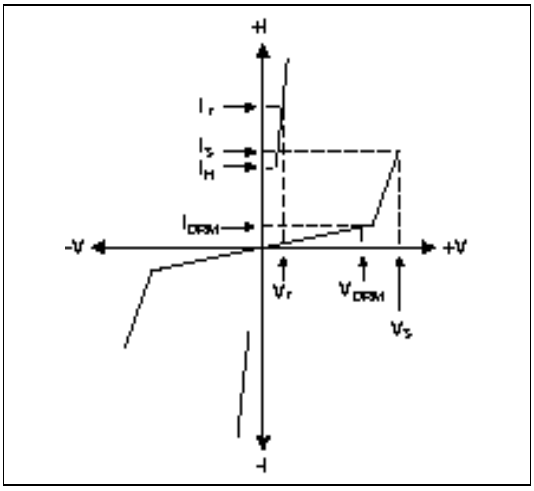
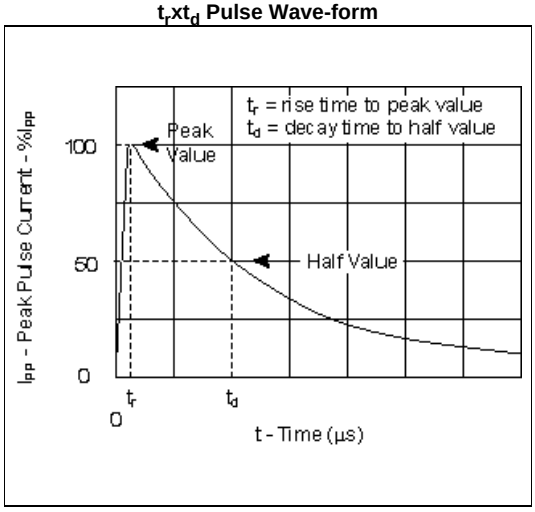
Thermal Considerations

Series	Symbol	Parameter	Value	Unit
EA	T_j	Junction Temperature Range	-40 to +150	°C
	T_s	Storage Temperature Range	-65 to +150	°C
	T_c	Maximum Case Temperature	+110	°C
	$R_{\theta jc}$	Thermal Resistance: junction to case	+28	°C/W
	$R_{\theta ja}$	Thermal Resistance: junction to ambient	+90	°C/W

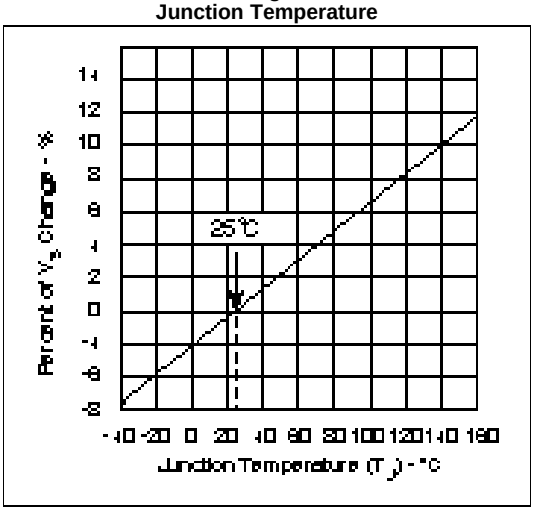
V-I Characteristics



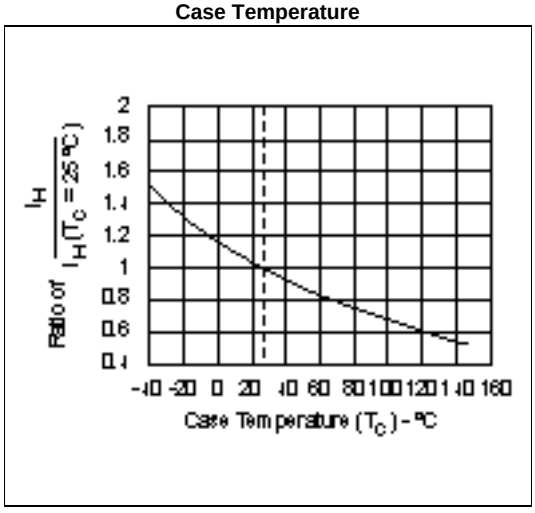
t_rxt_d Pulse Wave-form



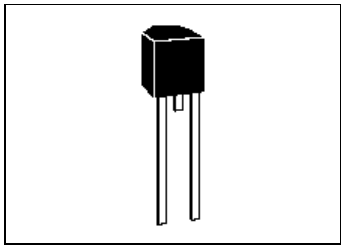
Normalized V_S Change vs. Junction Temperature



Normalized DC Holding Current vs. Case Temperature



TO-92 "EB" Series



The TO-92 "EB" series SIDACtor is a 100A rated solid state protection device designed for telecommunications applications such as modems, line cards, fax machines, etc.

The "EB" series SIDACtor is used to help equipment meet all regulatory requirements including: Bellcore 1089, ITU K.20 & K.21,IEC 950, UL 1459 & 1950 and FCC Part 68.

Electrical Parameters

Part Number	V_{DRM} Volts	V_S Volts	V_T Volts	I_{DRM} µAmps	I_S mAmps	I_T Amps	I_H mAmps	C_O pF
P0080EB	5	15	5	5	800	1	150	100
P0300EB	25	40	5	5	800	1	150	100
P0640EB	58	77	5	5	800	1	150	60
P0720EB	65	88	5	5	800	1	150	60
P0800EB	75	98	5	5	800	1	150	60
P1100EB	90	130	5	5	800	1	150	60
P1300EB	120	160	5	5	800	1	150	40
P1500EB	140	180	5	5	800	1	150	40
P1800EB	160	220	5	5	800	1	150	40
P2300EB	190	260	5	5	800	1	150	30
P2600EB	220	300	5	5	800	1	150	30
P3100EB	275	350	5	5	800	1	150	30
P3500EB	320	400	5	5	800	1	150	30

Notes:

- All measurements are made at an ambient temperature of 25°C.
- Listed SIDACtors are bi-directional. All electrical parameters & surge ratings apply to forward and reverse polarities.
- V_{DRM} is measured at I_{DRM}.
- V_S is measured at 100V/µs.
- Special voltage (V_S & V_{DRM}) and holding current (I_H) requirements are available upon request.
- Off-state capacitance is measured at 1MHz with a 2 volt bias and is a typical value.

Surge Ratings

Series	I_{PP} 10x160µs Amps	I_{PP} 10x560µs Amps	I_{TSM} 60Hz Amps	dI/dt Amps/µs
EB	150	100	30	500

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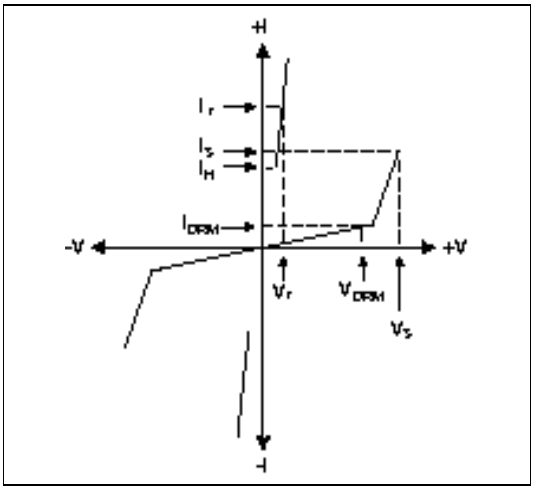
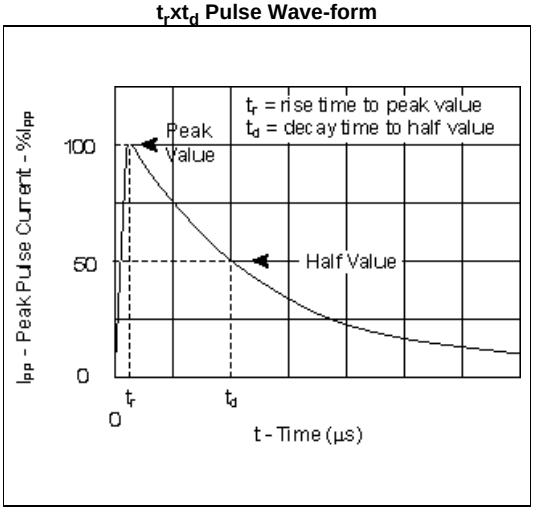
Thermal Considerations

Series	Symbol	Parameter	Value	Unit
EB	T_j	Junction Temperature Range	-40 to +150	°C
	T_s	Storage Temperature Range	-65 to +150	°C
	T_c	Maximum Case Temperature	+110	°C
	$R_{\theta jc}$	Thermal Resistance: junction to case	+28	°C/W
	$R_{\theta ja}$	Thermal Resistance: junction to ambient	+90	°C/W

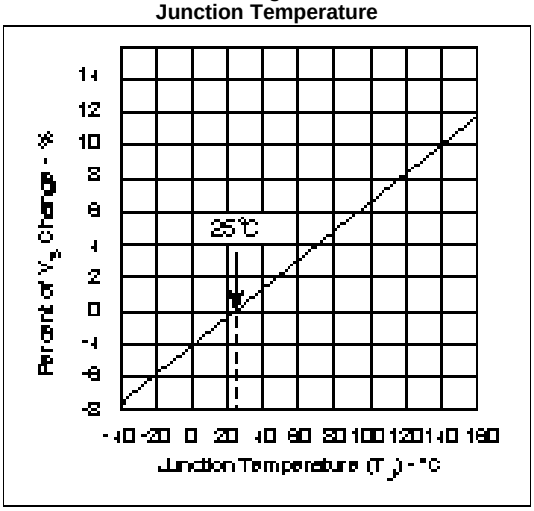
V-I Characteristics



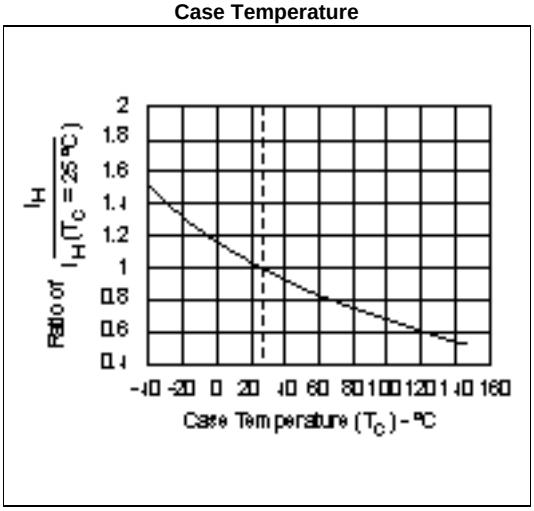
t_rxt_d Pulse Wave-form



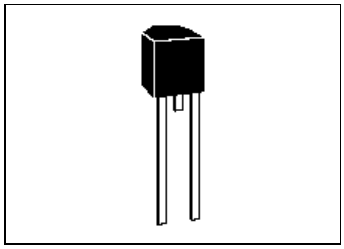
Normalized V_S Change vs. Junction Temperature



Normalized DC Holding Current vs. Case Temperature



TO-92 "EC" Series



The TO-92 "EC" series SIDACtor is a 500A rated solid state protection device designed for telecommunications systems that require Bellcore 1089 compliance without the use of additional series resistance.

Applications include xDSL transmission equipment, line cards, etc. The "EC" series SIDACtor is used to help equipment meet various regulatory requirements including: Bellcore 1089, ITU K.20 & K.21, IEC 950, UL 1459 & 1950 and FCC Part 68.

Electrical Parameters

Part Number	V_{DRM} Volts	V_S Volts	V_T Volts	I_{DRM} µAmps	I_S mAmps	I_T Amps	I_H mAmps	C_O pF
P0080EC	5	15	5	5	800	1	150	200
P0300EC	25	40	5	5	800	1	150	200
P0640EC	58	77	5	5	800	1	150	120
P0720EC	65	88	5	5	800	1	150	120
P0800EC	75	98	5	5	800	1	150	120
P1100EC	90	130	5	5	800	1	150	120
P1300EC	120	160	5	5	800	1	150	80
P1500EC	140	180	5	5	800	1	150	80
P1800EC	160	220	5	5	800	1	150	80
P2300EC	190	260	5	5	800	1	150	60
P2600EC	220	300	5	5	800	1	150	60
P3100EC	275	350	5	5	800	1	150	60
P3500EC	320	400	5	5	800	1	150	60

Notes:

- All measurements are made at an ambient temperature of 25°C.
- Listed SIDACtors are bi-directional. All electrical parameters & surge ratings apply to forward and reverse polarities.
- V_{DRM} is measured at I_{DRM}.
- V_S is measured at 100V/µs.
- Special voltage (V_S & V_{DRM}) and holding current (I_H) requirements are available upon request.
- Off-state capacitance is measured at 1MHz with a 2 volt bias and is a typical value.

Surge Ratings

Series	I_{PP} 2x10µs Amps	I_{PP} 10x160µs Amps	I_{PP} 10x1000µs Amps	I_{TSM} 60Hz Amps	dI/dt Amps/µs
EC	500	200	100	60	500

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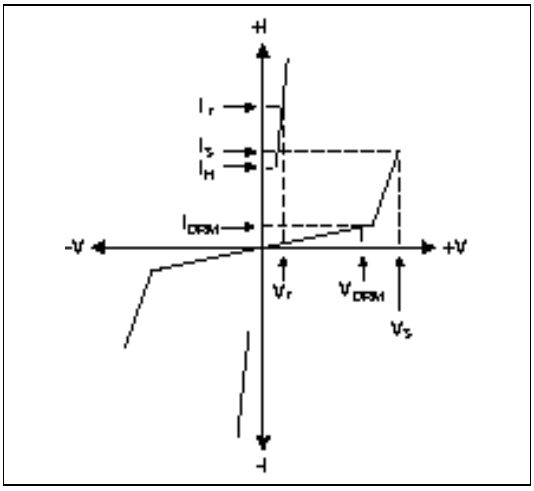
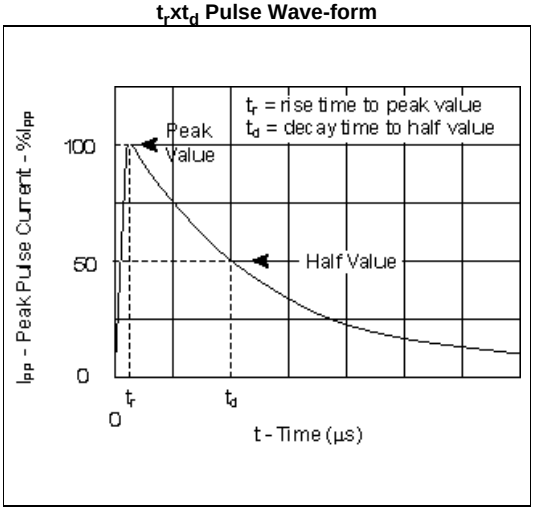
Thermal Considerations

Series	Symbol	Parameter	Value	Unit
EC	T_j	Junction Temperature Range	-40 to +150	°C
	T_s	Storage Temperature Range	-65 to +150	°C
	T_c	Maximum Case Temperature	+75	°C
	$R_{\theta jc}$	Thermal Resistance: junction to case	+26	°C/W
	$R_{\theta ja}$	Thermal Resistance: junction to ambient	+85	°C/W

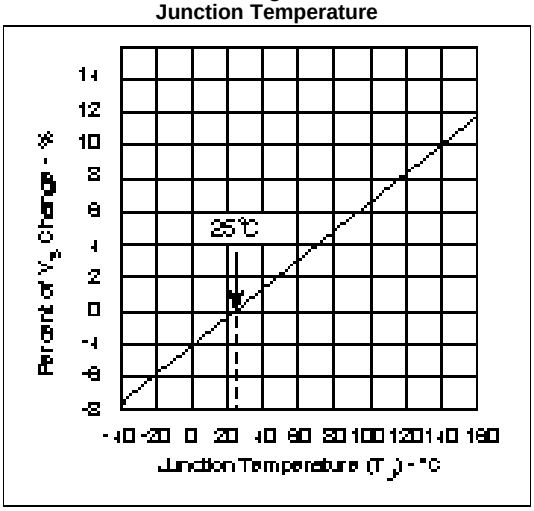
V-I Characteristics



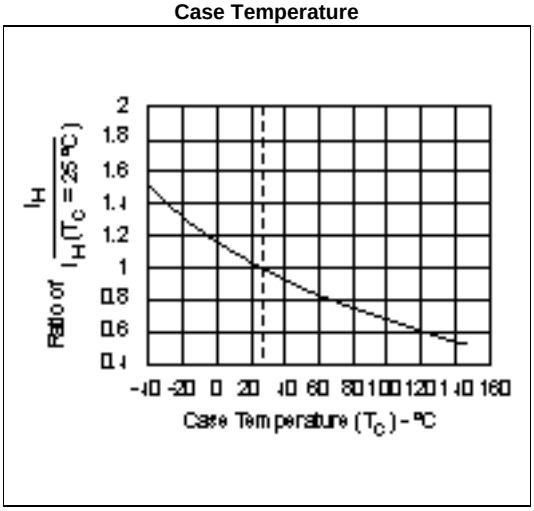
t_rxt_d Pulse Wave-form



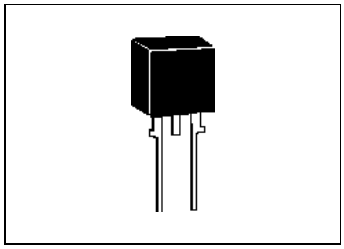
Normalized V_S Change vs. Junction Temperature



Normalized DC Holding Current vs. Case Temperature



TO-220 Type 61 "AA" Series



The TO-220 Type 61 "AA" series SIDACtor is a 50A rated solid state protection device designed for telecommunications applications that do not reference earth ground.

The Type 61 "AA" series SIDACtor is used to help equipment meet various regulatory requirements including: Bellcore 1089, ITU K.20 & K.21, IEC 950, UL 1459 & 1950 and FCC Part 68.

Electrical Parameters

Part Number	V_{DRM} Volts	V_S Volts	V_T Volts	I_{DRM} µAmps	I_S mAmps	I_T Amps	I_H mAmps	C_O pF
P2000AA61	180	220	5	5	800	1	150	30
P2200AA61	200	240	5	5	800	1	150	30
P2400AA61	220	260	5	5	800	1	150	30
P2500AA61	240	290	5	5	800	1	150	30
P3000AA61	270	330	5	5	800	1	150	30
P3300AA61	300	360	5	5	800	1	150	30

Notes:

- All measurements are made at an ambient temperature of 25°C.
- Listed SIDACtors are bi-directional. All electrical parameters & surge ratings apply to forward and reverse polarities.
- V_{DRM} is measured at I_{DRM}.
- V_S is measured at 100V/µs.
- Special voltage (V_S & V_{DRM}) and holding current (I_H) requirements are available upon request.
- Off-state capacitance is measured at 1MHz with a 2 volt bias and is a typical value.

Surge Ratings

Series	I_{PP} 10x160µs Amps	I_{PP} 10x560µs Amps	I_{TSM} 60Hz Amps	dI/dt Amps/µs
AA	100	50	20	500

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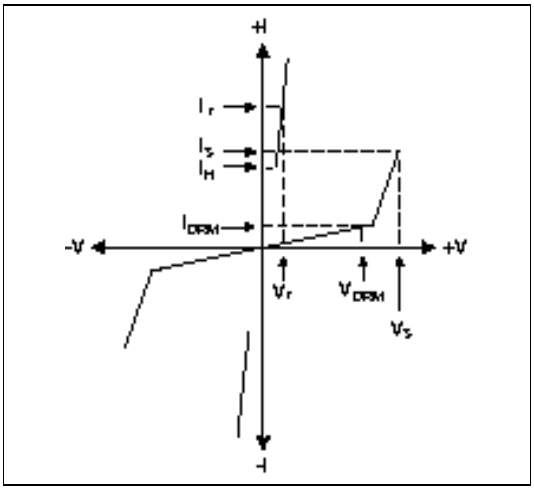
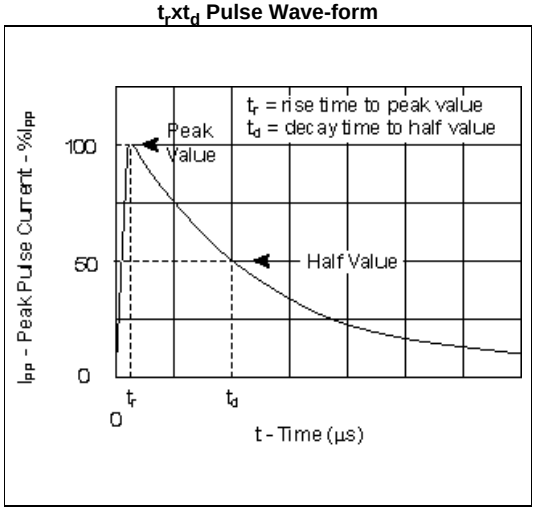
Thermal Considerations

Series	Symbol	Parameter	Value	Unit
AA	T_j	Junction Temperature Range	-40 to +150	°C
	T_s	Storage Temperature Range	-65 to +150	°C
	T_c	Maximum Case Temperature	+115	°C
	$R_{\theta jc}$	Thermal Resistance: junction to case	+12	°C/W
	$R_{\theta ja}$	Thermal Resistance: junction to ambient	+50	°C/W

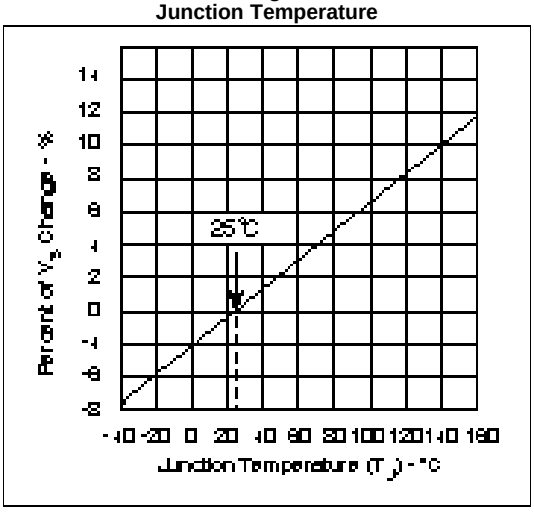
V-I Characteristics



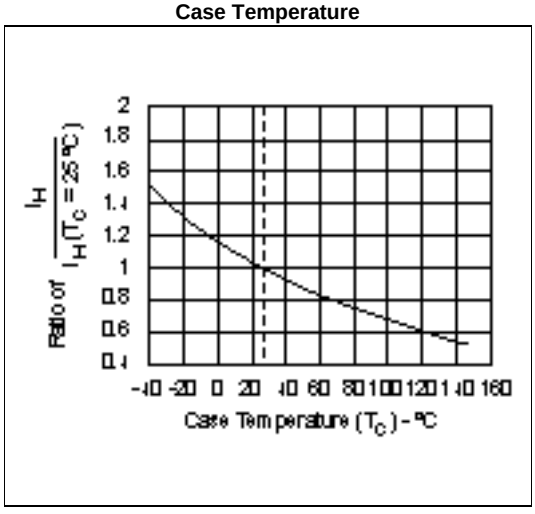
t_rxt_d Pulse Wave-form



Normalized V_S Change vs. Junction Temperature



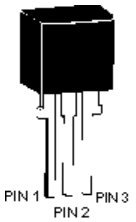
Normalized DC Holding Current vs. Case Temperature



Two Chip TO-220 "AA" Series

The two chip TO-220 "AA" series SIDACtor is a 50A rated solid state protection device designed for telecommunications applications that reference Tip and Ring to earth ground but do not require balanced protection.

The "AA" series SIDACtor is used to help meet various regulatory requirements including: Bellcore 1089, ITU K.20 & K.21, IEC 950, UL 1459 & 1950 and FCC Part 68.



Electrical Parameters

Part Number	V_{DRM} Volts pins 1-2, 3-2	V_S Volts pins 1-2, 3-2	V_{DRM} Volts pins 1-3	V_S Volts pins 1-3	V_T Volts	I_{DRM} µAmps	I_S mAmps	I_T mAmps	I_H mAmps	C_O pF
P0602AA	25	40	50	80	5	5	800	1	150	100
P1402AA	58	77	116	154	5	5	800	1	150	60
P1602AA	65	95	130	190	5	5	800	1	150	60
P2202AA	90	130	180	260	5	5	800	1	150	60
P2702AA	120	160	240	320	5	5	800	1	150	40
P3002AA	140	180	280	360	5	5	800	1	150	40
P3602AA	160	220	320	440	5	5	800	1	150	40
P4202AA	190	250	380	500	5	5	800	1	150	30
P4802AA	220	300	440	600	5	5	800	1	150	30
P6002AA	275	350	550	700	5	5	800	1	150	30

Notes:

- All measurements are made at an ambient temperature of 25°C.
- Listed SIDACtors are bi-directional. All electrical parameters & surge ratings apply to forward and reverse polarities.
- V_{DRM} is measured at I_{DRM}.
- V_S is measured at 100V/µs.
- Special voltage (V_S & V_{DRM}) and holding current (I_H) requirements are available upon request.
- Off-state capacitance is measured at 1MHz with a 2 volt bias and is a typical value.

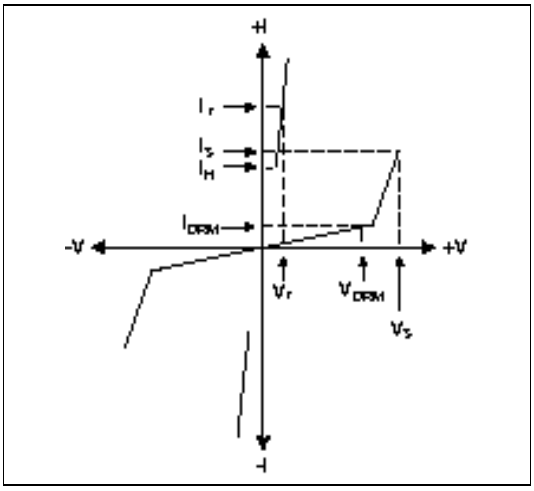
Surge Ratings

Series	I_{PP} 10x160µs Amps	I_{PP} 10x560µs Amps	I_{TSM} 60Hz Amps	dI/dt Amps/µs
AA	100	50	20	500

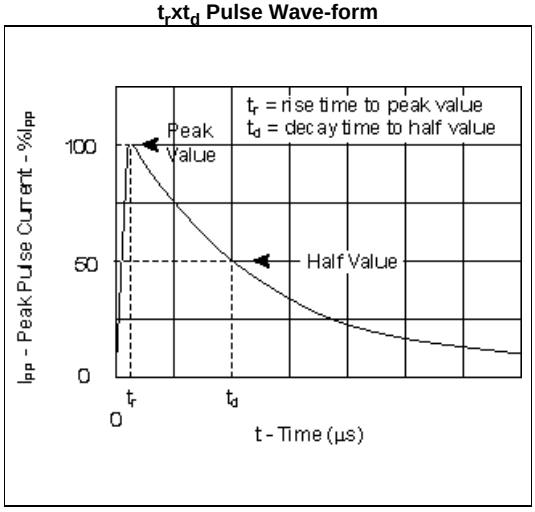
Thermal Considerations

Series	Symbol	Parameter	Value	Unit
AA	T_j	Junction Temperature Range	-40 to +150	°C
	T_s	Storage Temperature Range	-65 to +150	°C
	T_c	Maximum Case Temperature	+115	°C
	$R_{\theta jc}$	Thermal Resistance: junction to case	+12	°C/W
	$R_{\theta ja}$	Thermal Resistance: junction to ambient	+50	°C/W

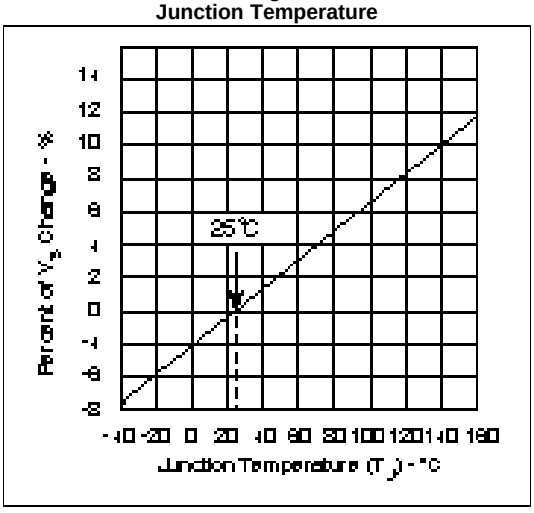
V-I Characteristics



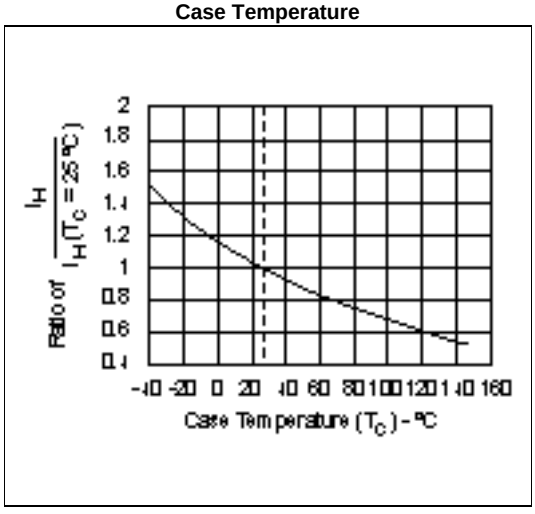
t_rxt_d Pulse Wave-form



Normalized V_S Change vs. Junction Temperature



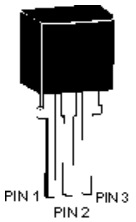
Normalized DC Holding Current vs. Case Temperature



Two Chip TO-220 "AB" Series

The two chip TO-220 "AB" series SIDACtor is a 100A rated solid state protection device designed for telecommunications applications that reference Tip and Ring to earth ground but do not require balanced protection.

The "AB" series SIDACtor is used to help equipment meet various regulatory requirements including: Bellcore 1089, ITU K.20 & K.21, IEC 950, UL 1459 & 1950 and FCC Part 68.



Electrical Parameters

Part Number	V_{DRM} Volts pins 1-2, 3-2	V_S Volts pins 1-2, 3-2	V_{DRM} Volts pins 1-3	V_S Volts pins 1-3	V_T Volts	I_{DRM} µAmps	I_S mAmps	I_T Amps	I_H mAmps	C_O pF
P0602AB	25	40	50	80	5	5	800	1	150	100
P1402AB	58	77	116	154	5	5	800	1	150	60
P1602AB	65	95	130	190	5	5	800	1	150	60
P2202AB	90	130	180	260	5	5	800	1	150	60
P2702AB	120	160	240	320	5	5	800	1	150	40
P3002AB	140	180	280	360	5	5	800	1	150	40
P3602AB	160	220	320	440	5	5	800	1	150	40
P4202AB	190	250	380	500	5	5	800	1	150	30
P4802AB	220	300	440	600	5	5	800	1	150	30
P6002AB	275	350	550	700	5	5	800	1	150	30

Notes:
- All measurements are made at an ambient temperature of 25°C.
- Listed SIDACtors are bi-directional. All electrical parameters & surge ratings apply to forward and reverse polarities.
- V_{DRM} is measured at I_{DRM}.
- V_S is measured at 100V/µs.
- Special voltage (V_S & V_{DRM}) and holding current (I_H) requirements are available upon request.
- Off-state capacitance is measured at 1MHz with a 2 volt bias and is a typical value.

Surge Ratings

Series	I_{PP} 10x160µs Amps	I_{PP} 10x560µs Amps	I_{TSM} 60Hz Amps	dI/dt Amps/µs
AB	150	100	30	500

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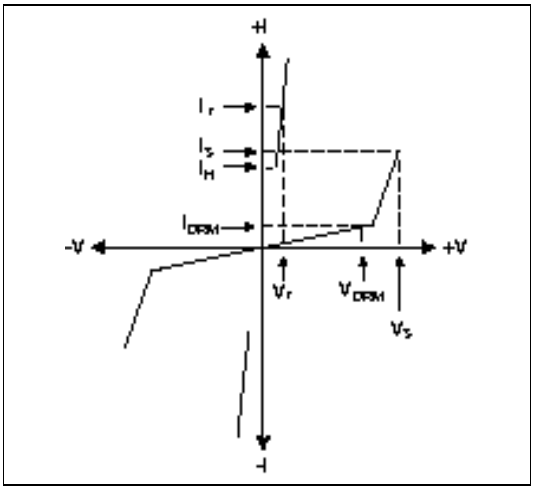
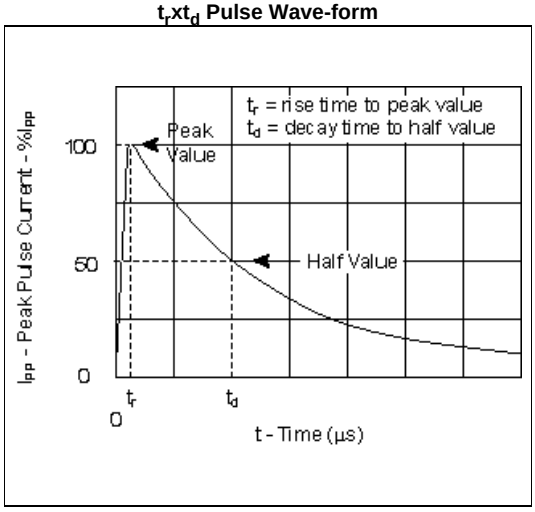
Thermal Considerations

Series	Symbol	Parameter	Value	Unit
AB	T_j	Junction Temperature Range	-40 to +150	°C
	T_s	Storage Temperature Range	-65 to +150	°C
	T_c	Maximum Case Temperature	+115	°C
	$R_{\theta jc}$	Thermal Resistance: junction to case	+12	°C/W
	$R_{\theta ja}$	Thermal Resistance: junction to ambient	+50	°C/W

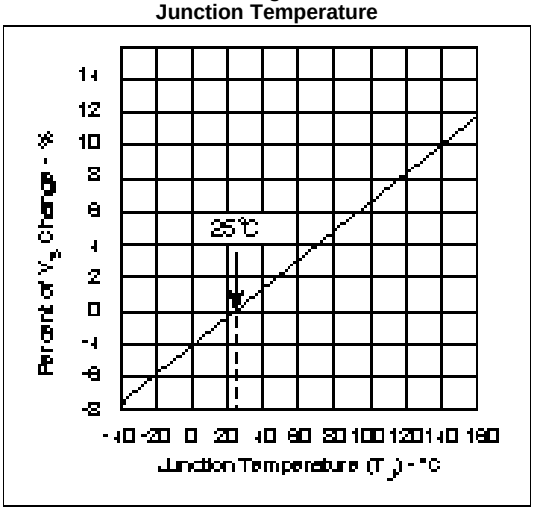
V-I Characteristics



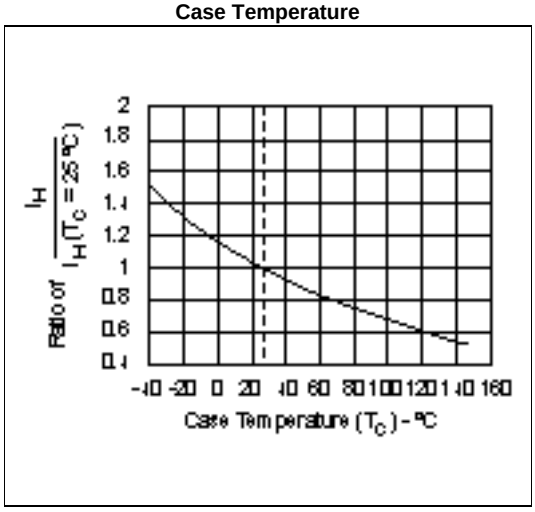
t_rxt_d Pulse Wave-form



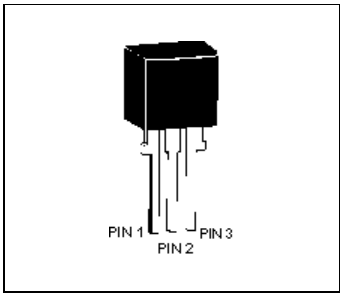
Normalized V_S Change vs. Junction Temperature



Normalized DC Holding Current vs. Case Temperature



Two Chip TO-220 "AC" Series



The two chip TO-220 "AC" series SIDACtor is a 500A rated solid state protection device designed for telecommunications applications that reference Tip and Ring to earth ground but do not require balanced protection. Applications include xDSL transmission equipment, line cards, etc.

The "AC" series SIDACtor is used to help equipment meet various regulatory requirements including: Bellcore 1089, ITU K.20 & K.21, IEC 950, UL 1459 & 1950 and FCC Part 68 without the use of any additional series impedance.

Electrical Parameters

Part Number	V_{DRM} Volts pins 1-2, 3-2	V_S Volts pins 1-2, 3-2	V_{DRM} Volts pins 1-3	V_S Volts pins 1-3	V_T Volts	I_{DRM} µAmps	I_S mAmps	I_T Amps	I_H mAmps	C_O pF
P0602AC	25	40	50	80	5	5	800	1	150	200
P1402AC	58	77	116	154	5	5	800	1	150	120
P1602AC	65	95	130	190	5	5	800	1	150	120
P2202AC	90	130	180	260	5	5	800	1	150	120
P2702AC	120	160	240	320	5	5	800	1	150	80
P3002AC	140	180	280	360	5	5	800	1	150	80
P3602AC	160	220	320	440	5	5	800	1	150	80
P4202AC	190	250	380	500	5	5	800	1	150	60
P4802AC	220	300	440	600	5	5	800	1	150	60
P6002AC	275	350	550	700	5	5	800	1	150	60

Notes:

- All measurements are made at an ambient temperature of 25°C.
- Listed SIDACtors are bi-directional. All electrical parameters & surge ratings apply to forward and reverse polarities.
- V_{DRM} is measured at I_{DRM}.
- V_S is measured at 100V/µs.
- Special voltage (V_S & V_{DRM}) and holding current (I_H) requirements are available upon request.
- Off-state capacitance is measured at 1MHz with a 2 volt bias and is a typical value.

Surge Ratings

Series	I_{PP} 2x10µs Amps	I_{PP} 10x160µs Amps	I_{PP} 10x1000µs Amps	I_{TSM} 60Hz Amps	dI/dt Amps/µs
AC	500	200	100	60	500

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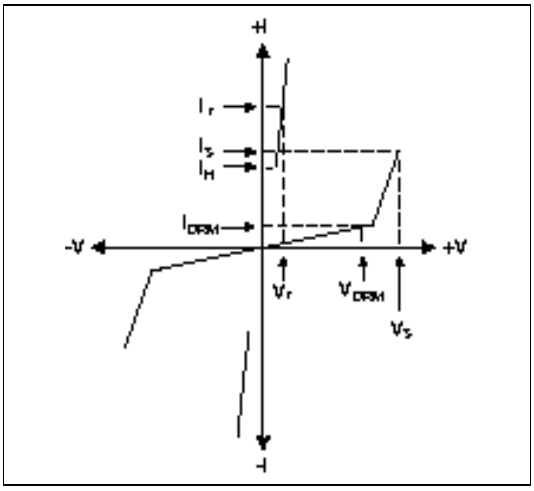
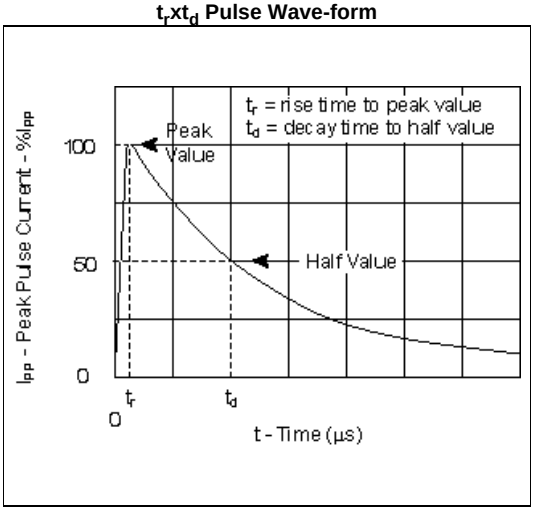
Thermal Considerations

Series	Symbol	Parameter	Value	Unit
AC	T_j	Junction Temperature Range	-40 to +150	°C
	T_s	Storage Temperature Range	-65 to +150	°C
	T_c	Maximum Case Temperature	+115	°C
	$R_{\theta jc}$	Thermal Resistance: junction to case	+12	°C/W
	$R_{\theta ja}$	Thermal Resistance: junction to ambient	+50	°C/W

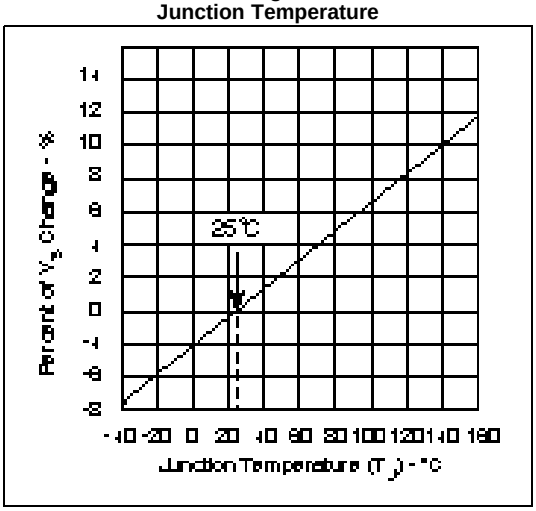
V-I Characteristics



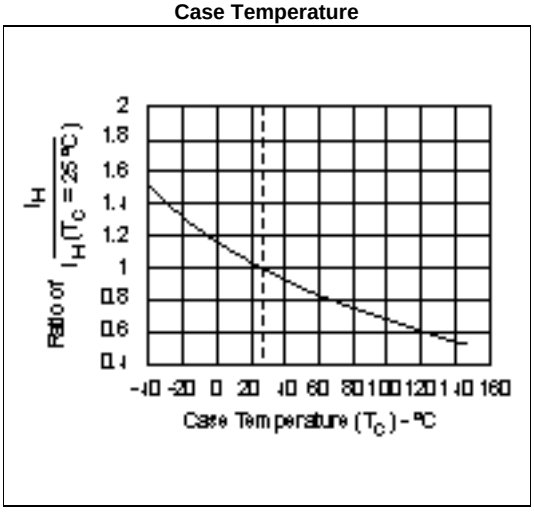
t_rxt_d Pulse Wave-form



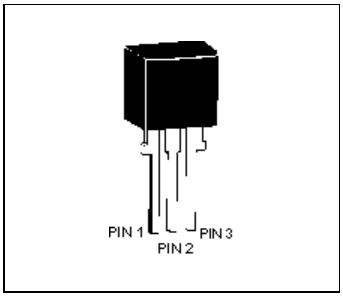
Normalized V_S Change vs. Junction Temperature



Normalized DC Holding Current vs. Case Temperature



Balanced Three Chip TO-220 "AA" Series



The three chip TO-220 "AA" series SIDACtor is a balanced 50A rated solid state protection device designed for telecommunications systems that reference Tip and Ring to earth ground. Applications include any piece of transmission equipment that requires balanced protection.

The "AA" series SIDACtor is used to help equipment meet various regulatory requirements including: Bellcore 1089, ITU K.20 & K.21, IEC 950, UL 1459 & 1950 and FCC Part 68.

Electrical Parameters

Part Number	V_{DRM} Volts pins 1-2, 3-2	V_S Volts pins 1-2, 3-2	V_{DRM} Volts pins 1-3	V_S Volts pins 1-3	V_T Volts	I_{DRM} µAmps	I_S mAmps	I_T Amps	I_H mAmps	C_O pF
P1553AA	130	180	130	180	10	5	800	1	150	40
P1803AA	150	210	150	210	10	5	800	1	150	40
P2103AA	170	250	170	250	10	5	800	1	150	40
P2353AA	200	270	200	270	10	5	800	1	150	40
P2703AA	230	300	230	300	10	5	800	1	150	30
P3203AA	270	350	270	350	10	5	800	1	150	30
P3403AA	300	400	300	400	10	5	800	1	150	30

Notes:
- All measurements are made at an ambient temperature of 25°C.
- Listed SIDACtors are bi-directional. All electrical parameters & surge ratings apply to forward and reverse polarities.
- V_{DRM} is measured at I_{DRM}.
- V_S is measured at 100V/µs.
- Special voltage (V_S & V_{DRM}) and holding current (I_H) requirements are available upon request.
- Off-state capacitance is measured at 1MHz with a 2 volt bias and is a typical value.

Surge Ratings

Series	I_{PP} 10x160µs Amps	I_{PP} 10x560µs Amps	I_{TSM} 60Hz Amps	dI/dt Amps/µs
AA	100	50	20	500

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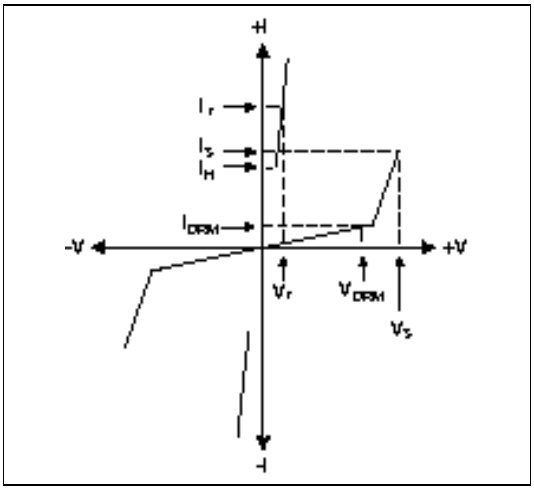
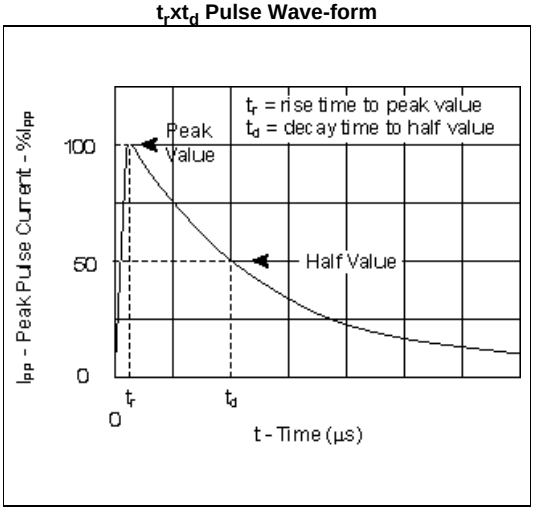
Thermal Considerations

Series	Symbol	Parameter	Value	Unit
AA	T_j	Junction Temperature Range	-40 to +150	°C
	T_s	Storage Temperature Range	-65 to +150	°C
	T_c	Maximum Case Temperature	+115	°C
	$R_{\theta jc}$	Thermal Resistance: junction to case	+12	°C/W
	$R_{\theta ja}$	Thermal Resistance: junction to ambient	+50	°C/W

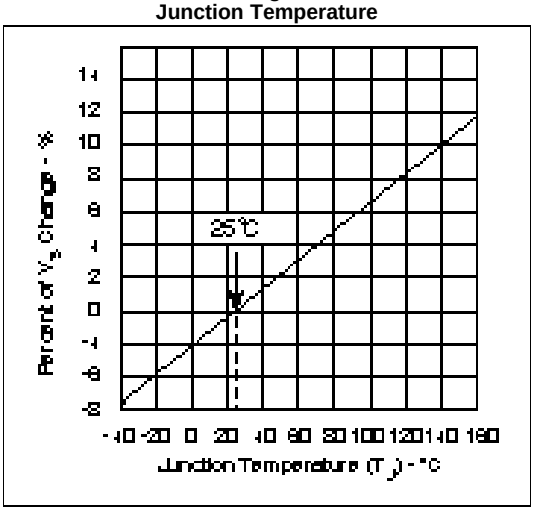
V-I Characteristics



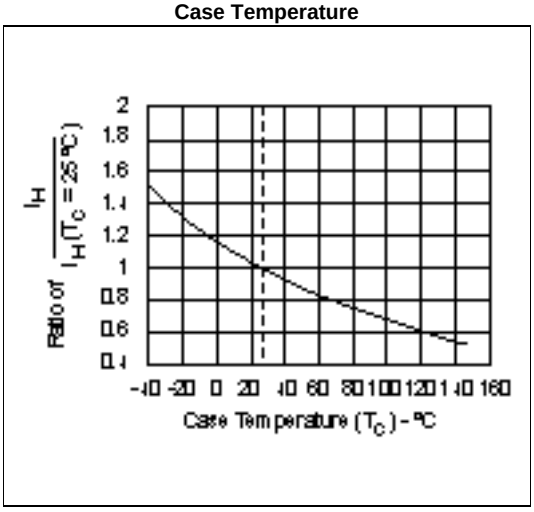
t_rxt_d Pulse Wave-form



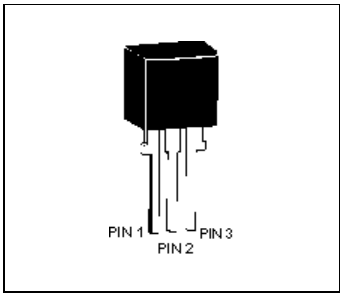
Normalized V_S Change vs. Junction Temperature



Normalized DC Holding Current vs. Case Temperature



Balanced Three Chip TO-220 "AB" Series



The three chip TO-220 "AB" series SIDACtor is a 100A rated solid state protection device designed for telecommunications systems that reference Tip and Ring to earth ground. Applications include any piece of transmission equipment that requires balanced protection.

The "AB" series SIDACtor is used to help equipment meet various regulatory requirements including: Bellcore 1089, ITU K.20 & K.21, UL 1459 & 1950 and FCC Part 68.

Electrical Parameters

Part Number	V_{DRM} Volts pins 1-2, 3-2	V_S Volts pins 1-2, 3-2	V_{DRM} Volts pins 1-3	V_S Volts pins 1-3	V_T Volts	I_{DRM} µAmps	I_S mAmps	I_T Amps	I_H mAmps	C_O pF
P1553AB	130	180	130	180	10	5	800	1	150	40
P1803AB	150	210	150	210	10	5	800	1	150	40
P2103AB	170	250	170	250	10	5	800	1	150	40
P2353AB	200	270	200	270	10	5	800	1	150	40
P2703AB	230	300	230	300	10	5	800	1	150	30
P3203AB	270	350	270	350	10	5	800	1	150	30
P3403AB	300	400	300	400	10	5	800	1	150	30

Notes:
- All measurements are made at an ambient temperature of 25°C.
- Listed SIDACtors are bi-directional. All electrical parameters & surge ratings apply to forward and reverse polarities.
- V_{DRM} is measured at I_{DRM}.
- V_S is measured at 100V/µs.
- Special voltage (V_S & V_{DRM}) and holding current (I_H) requirements are available upon request.
- Off-state capacitance is measured at 1MHz with a 2 volt bias and is a typical value.

Surge Ratings

Series	I_{PP} 10x160µs Amps	I_{PP} 10x560µs Amps	I_{TSM} 60Hz Amps	dI/dt Amps/µs
AB	150	100	30	500

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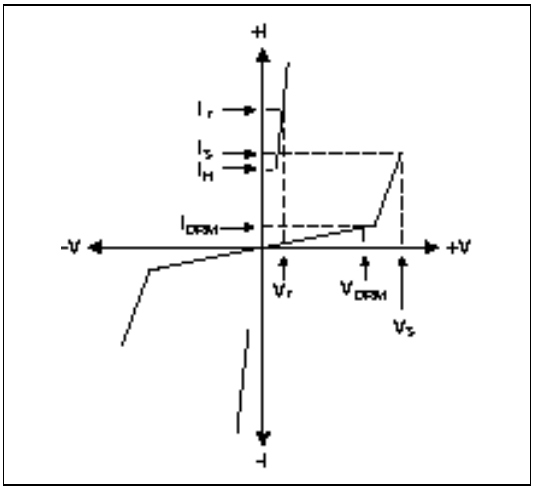
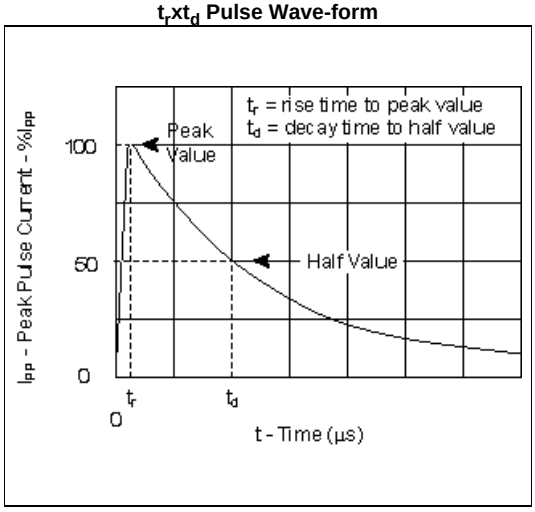
Thermal Considerations

Series	Symbol	Parameter	Value	Unit
AB	T_j	Junction Temperature Range	-40 to +150	°C
	T_s	Storage Temperature Range	-65 to +150	°C
	T_c	Maximum Case Temperature	+115	°C
	$R_{\theta jc}$	Thermal Resistance: junction to case	+12	°C/W
	$R_{\theta ja}$	Thermal Resistance: junction to ambient	+50	°C/W

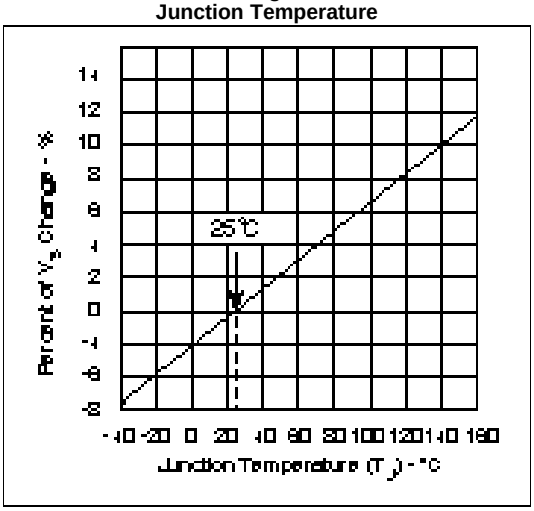
V-I Characteristics



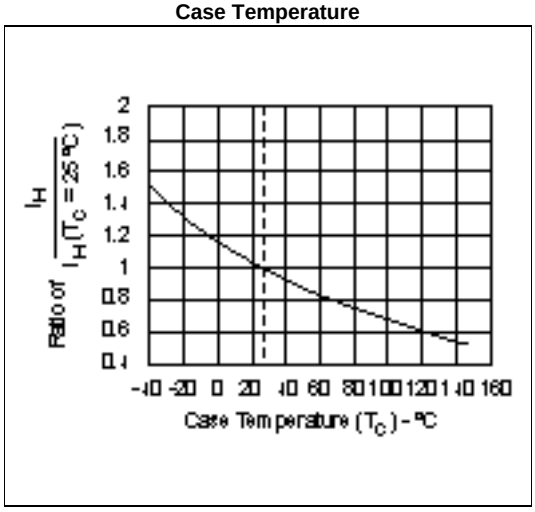
t_rxt_d Pulse Wave-form



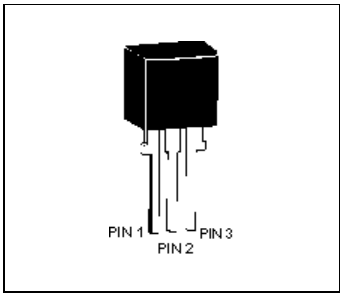
Normalized V_S Change vs. Junction Temperature



Normalized DC Holding Current vs. Case Temperature



Balanced Three Chip TO-220 "AC" Series



The three chip TO-220 "AC" series SIDACtor is a 500A rated solid state protection device designed for telecommunications systems that reference Tip and Ring to earth ground. Applications include any piece of transmission equipment that requires balanced protection and Bellcore 1089 compliance without the use of additional series resistance.

The "AC" series SIDACtor is used to help equipment meet various regulatory requirements including: Bellcore 1089, ITU K.20 & K.21, IEC 950, UL 1459 & 1950 and FCC Part 68.

Electrical Parameters

Part Number	V_{DRM} Volts pins 1-2, 3-2	V_S Volts pins 1-2, 3-2	V_{DRM} Volts pins 1-3	V_S Volts pins 1-3	V_T Volts	I_{DRM} µAmps	I_S mAmps	I_T Amps	I_H mAmps	C_O pF
P1553AC	130	180	130	180	10	5	800	1	150	80
P1803AC	150	210	150	210	10	5	800	1	150	80
P2103AC	170	250	170	250	10	5	800	1	150	80
P2353AC	200	270	200	270	10	5	800	1	150	80
P2703AC	230	300	230	300	10	5	800	1	150	60
P3203AC	270	350	270	350	10	5	800	1	150	60
P3403AC	300	400	300	400	10	5	800	1	150	60

Notes:
- All measurements are made at an ambient temperature of 25°C.
- Listed SIDACtors are bi-directional. All electrical parameters & surge ratings apply to forward and reverse polarities.
- V_{DRM} is measured at I_{DRM}.
- V_S is measured at 100V/µs.
- Special voltage (V_S & V_{DRM}) and holding current (I_H) requirements are available upon request.
- Off-state capacitance is measured at 1MHz with a 2 volt bias and is a typical value.

Surge Ratings

Series	I_{PP} 2x10µs Amps	I_{PP} 10x160µs Amps	I_{PP} 10x1000µs Amps	I_{TSM} 60Hz Amps	dI/dt Amps/µs
AC	500	200	100	60	500

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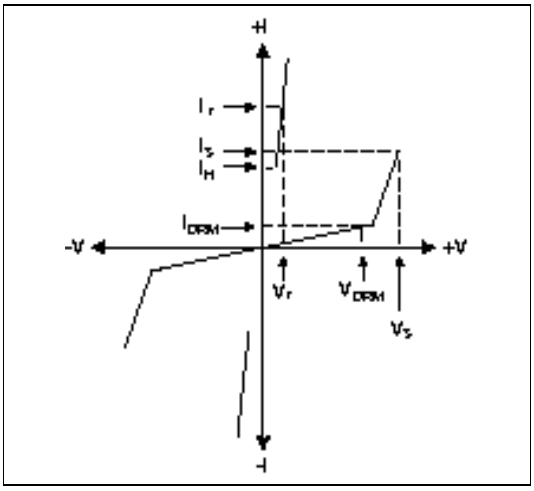
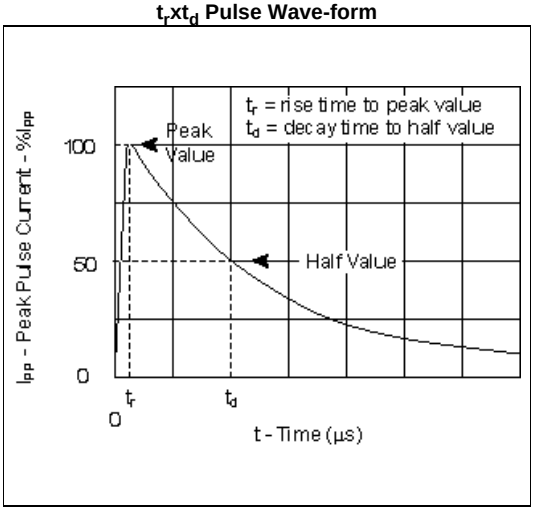
Thermal Considerations

Series	Symbol	Parameter	Value	Unit
AC	T_j	Junction Temperature Range	-40 to +150	°C
	T_s	Storage Temperature Range	-65 to +150	°C
	T_c	Maximum Case Temperature	+115	°C
	$R_{\theta jc}$	Thermal Resistance: junction to case	+12	°C/W
	$R_{\theta ja}$	Thermal Resistance: junction to ambient	+50	°C/W

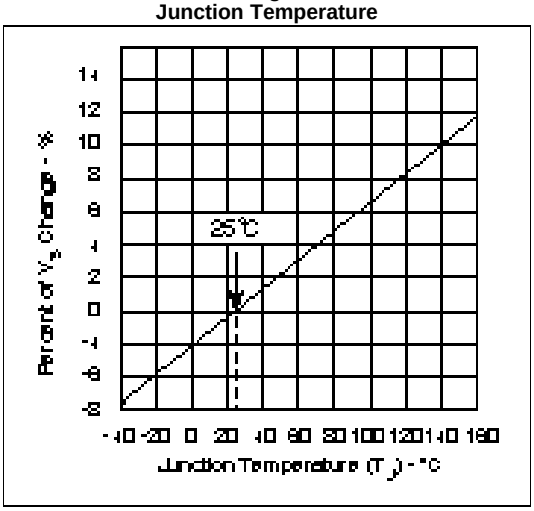
V-I Characteristics



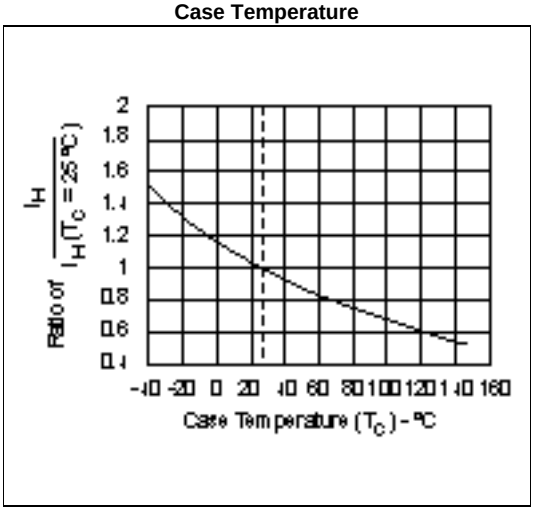
t_rxt_d Pulse Wave-form



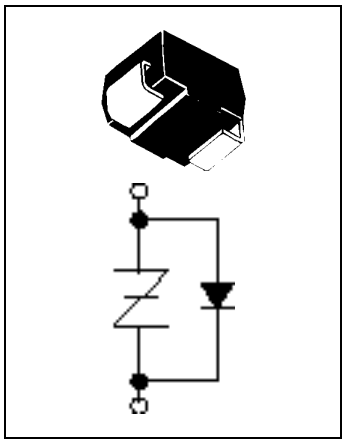
Normalized V_S Change vs. Junction Temperature



Normalized DC Holding Current vs. Case Temperature



Subscriber Line Interface Circuit (SLIC) Protection



The P0641SA and the P0721SA are 40A unidirectional solid state protection devices constructed with a SIDACtor and integrated diode.

Used to protect SLIC IC's from being damaged during transient voltage activity, the P0641SA and P0721SA will help line cards meet various regulatory requirements including: Bellcore 1089, ITU K.20 & K.21, IEC 950, UL 1459 & 1950 and FCC Part 68.

For specific design criteria see page 2-14.

Electrical Parameters

Part Number	V_{DRM} Volts	V_S Volts	V_T Volts	V_F Volts	I_{DRM} µAmps	I_S mAmps	I_T Amps	I_H mAmps	C_O pF
P0641SA	58	77	5	5	5	800	1	150	50
P0721SA	65	88	5	5	5	800	1	150	50

Notes:
- All measurements are made at an ambient temperature of 25°C.
- V_{DRM} is measured at I_{DRM}.
- V_S and V_F are measured at 100V/µs.
- Special voltage (V_S & V_{DRM}) and holding current (I_H) requirements are available upon request.
- Off-state capacitance is measured at 1MHz with a 2 volt bias and is a typical value.

Surge Ratings

Series	I_{PP} 2x10µs Amps	I_{PP} 10x1000µs Amps	I_{TSM} 60Hz Amps	dI/dt Amps/µs
SA	125	40	20	500

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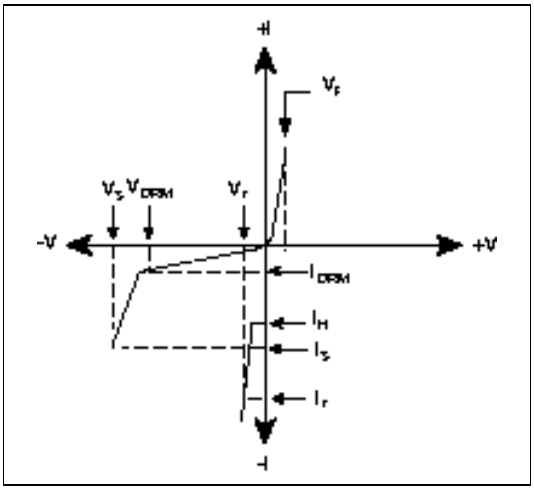
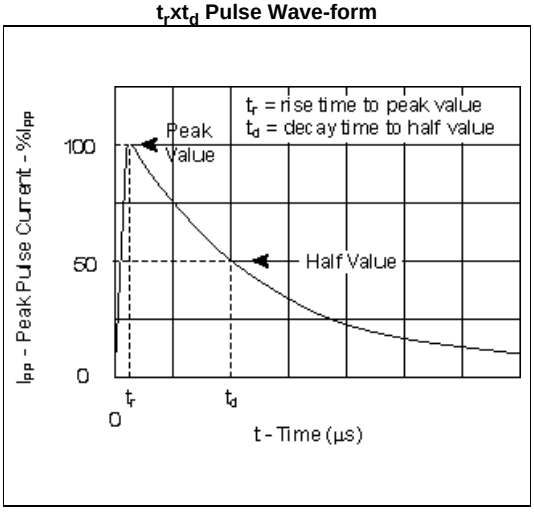
Thermal Considerations

Series	Symbol	Parameter	Value	Unit
SA	T_j	Junction Temperature Range	-40 to +150	°C
	T_s	Storage Temperature Range	-65 to +150	°C
	T_c	Maximum Case Temperature	+75	°C
	$R_{\theta jc}$	Thermal Resistance: junction to case	+28	°C/W
	$R_{\theta ja}$	Thermal Resistance: junction to ambient	+90	°C/W

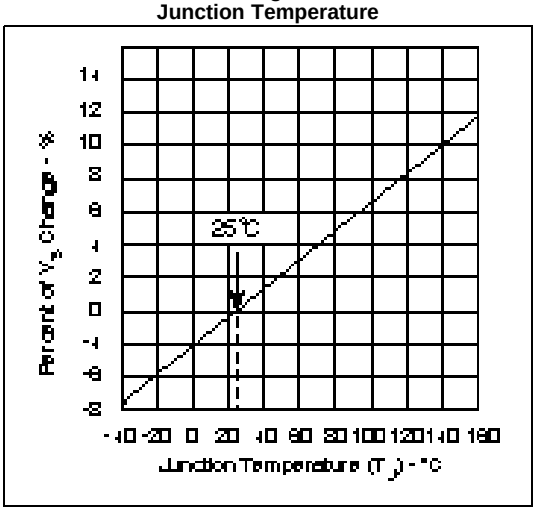
V-I Characteristics



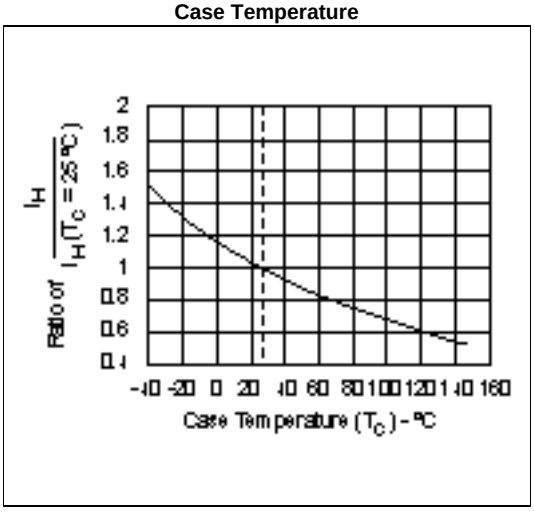
t_rxt_d Pulse Wave-form



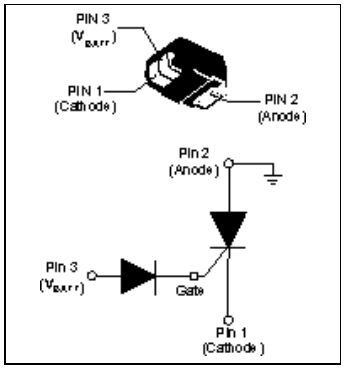
Normalized V_S Change vs. Junction Temperature



Normalized DC Holding Current vs. Case Temperature



Subscriber Line Interface Circuit (SLIC) Protection - P1001SC



The P1001SC SIDACtor is a 500A rated solid state protection device designed to turn on at {|-V_{BATT}|+|-1.2V|} for negative potential rises.

Used to protect SLIC IC's from being damaged during transient voltage activity, the P1001SC will help line cards meet various regulatory requirements including: Bellcore 1089, ITU K.20 & K.21, IEC 950, UL 1459 & 1950 and FCC Part 68 without the use of any series resistance.

For specific design criteria see page 2-14 and 2-15.

Electrical Parameters

Part Number	V_{DRM} Volts	V_S Volts	V_T Volts	V_F Volts	I_{DRM} µAmps	I_S mAmps	I_T Amps	I_H mAmps	C_O pF
P1001SC	|-V_{BATT}|+|-1.2V|	|-V_{BATT}|+|-10V|	5	5	5	400	1	150	50

Notes:
- All measurements are made at an ambient temperature of 25°C.
- V_{DRM} is measured at I_{DRM}.
- V_S is measured at 100V/µs.
- Off-state capacitance is measured at 1MHz with a 2 volt bias and is a typical value.

Surge Ratings
(Preliminary Data)

Series	I_{PP} 2x10µs Amps	I_{PP} 10x1000µs Amps	I_{TSM} 60Hz Amps	dI/dt Amps/µs
SC	500	100	60	500

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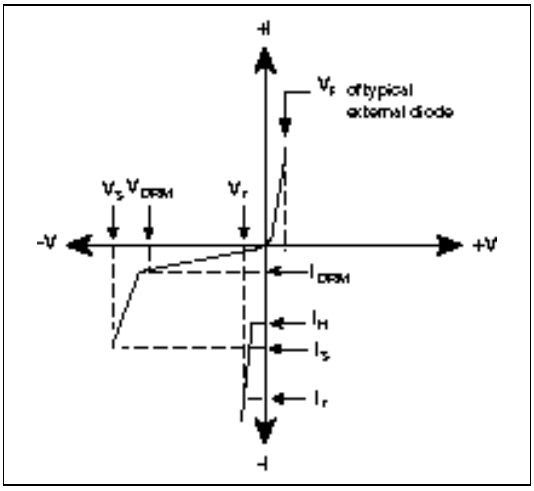
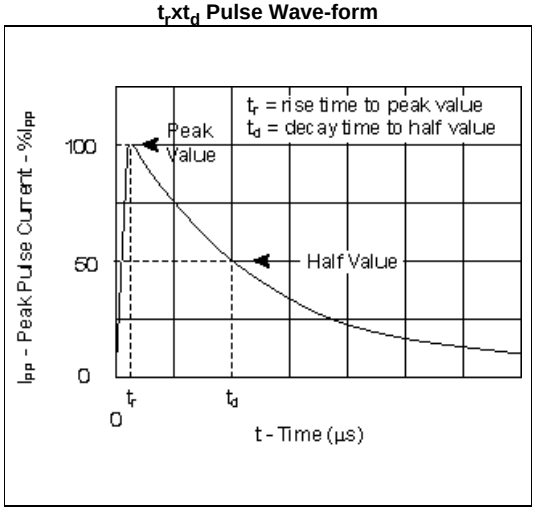
Thermal Considerations

Series	Symbol	Parameter	Value	Unit
SC	T_j	Junction Temperature Range	-40 to +150	°C
	T_s	Storage Temperature Range	-65 to +150	°C
	T_c	Maximum Case Temperature	+75	°C
	$R_{\theta jc}$	Thermal Resistance: junction to case	+26	°C/W
	$R_{\theta ja}$	Thermal Resistance: junction to ambient	+85	°C/W

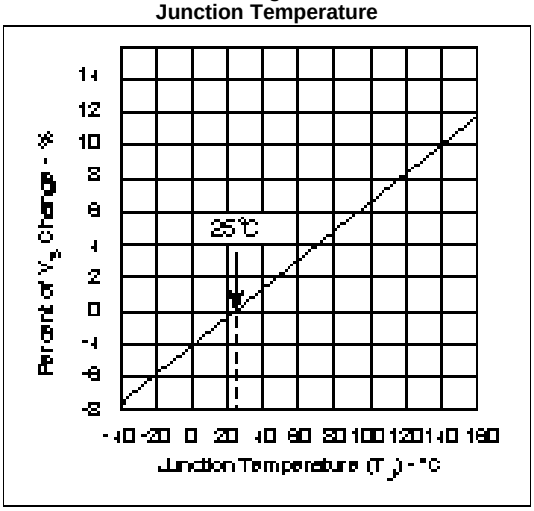
V-I Characteristics



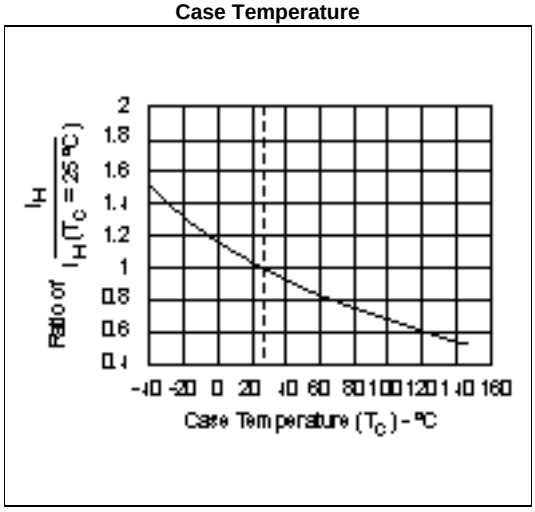
t_rxt_d Pulse Wave-form



Normalized V_S Change vs. Junction Temperature



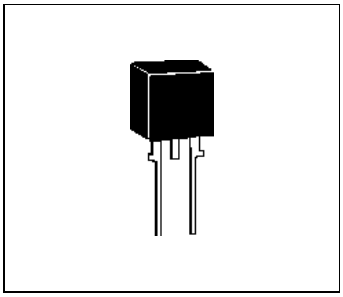
Normalized DC Holding Current vs. Case Temperature



CATV Series

The P1400AD SIDACtor is a 1000A rated solid state protection device offered in a TO-220 package and is designed to meet the severe surge requirements found in a CATV environment.

Used in Hybrid Fiber Coax (HFC) applications, the P1400AD replaces the gas tube that is traditionally used for station protection due to the P1400AD's tight voltage tolerances.



Electrical Parameters

Part Number	V_{DRM} Volts	V_S Volts	V_T Volts	I_{DRM} µAmps	I_S mAmps	I_T Amps	I_H mAmps	C_O pF
P1400AD	120	160	5	5	800	1	50	200

Notes:
- All measurements are made at an ambient temperature of 25°C.
- Listed SIDACtors are bi-directional. All electrical parameters & surge ratings apply to forward and reverse polarities.
- V_{DRM} is measured at I_{DRM}.
- V_S is measured at 100V/µs.
- Special voltage (V_S & V_{DRM}) and holding current (I_H) requirements are available upon request.
- Off-state capacitance is measured at 1MHz with a 2 volt bias and is a typical value.

Surge Ratings

Series	I_{PP} 8x20µs Amps	I_{PP} 10x1000µs Amps	I_{TSM} 60Hz Amps	dI/dt Amps/µs
P1400AD	1000	250	120	500

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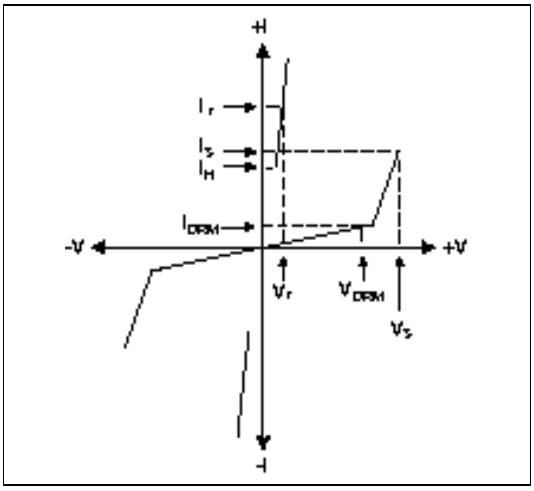
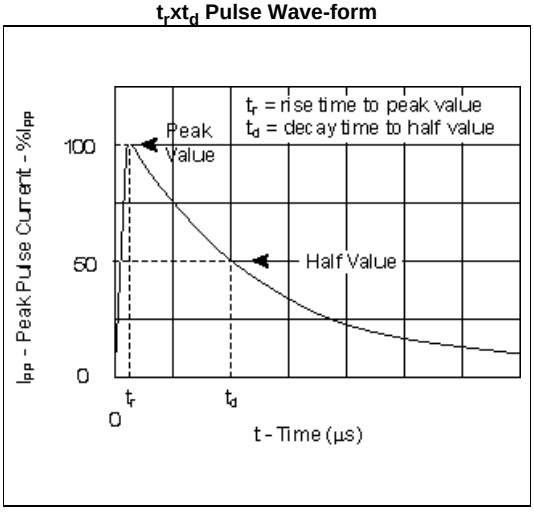
Thermal Considerations

Series	Symbol	Parameter	Value	Unit
P1400AD	T_j	Junction Temperature Range	-40 to +150	°C
	T_s	Storage Temperature Range	-65 to +150	°C
	T_c	Maximum Case Temperature	+75	°C
	$R_{\theta jc}$	Thermal Resistance: junction to case	+28	°C/W
	$R_{\theta ja}$	Thermal Resistance: junction to ambient	+90	°C/W

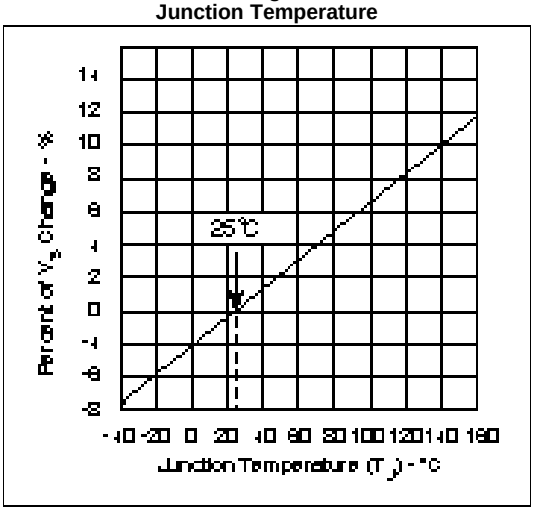
V-I Characteristics



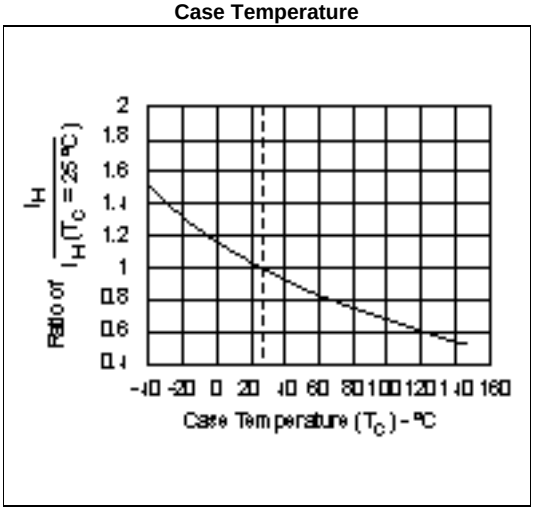
t_rxt_d Pulse Wave-form



Normalized V_S Change vs. Junction Temperature



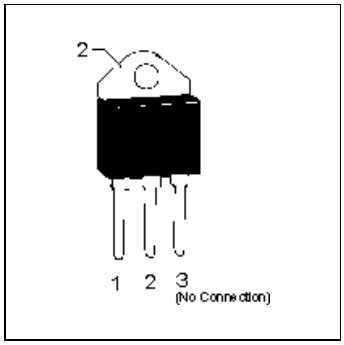
Normalized DC Holding Current vs. Case Temperature



CATV Series

The P1900ME is a 3000A rated solid state protection device offered in a non-isolated TO-218 package and is designed to meet the severe surge requirements found in a CATV environment.

Used on CATV line amplifiers and power inserters, the P1900ME replaces traditional gas tubes due to the P1900ME's tight voltage tolerances.



Electrical Parameters

Part Number	V_{DRM} Volts	V_S Volts	V_T Volts	I_{DRM} µAmps	I_S mAmps	I_T Amps	I_H mAmps	C_O pF
P1900ME	140	220	5	5	800	2	50	750

Notes:
- All measurements are made at an ambient temperature of 25°C.
- Listed SIDACtors are bi-directional. All electrical parameters & surge ratings apply to forward and reverse polarities.
- V_{DRM} is measured at I_{DRM}.
- V_S is measured at 100V/µs.
- Special voltage (V_S & V_{DRM}) and holding current (I_H) requirements are available upon request.
- Off-state capacitance is measured at 1MHz with a 2 volt bias and is a typical value.

Surge Ratings

Series	I_{PP} 8x20µs Amps	I_{TSM} 60Hz Amps	dI/dt Amps/µs
P1900ME	3000	400	500

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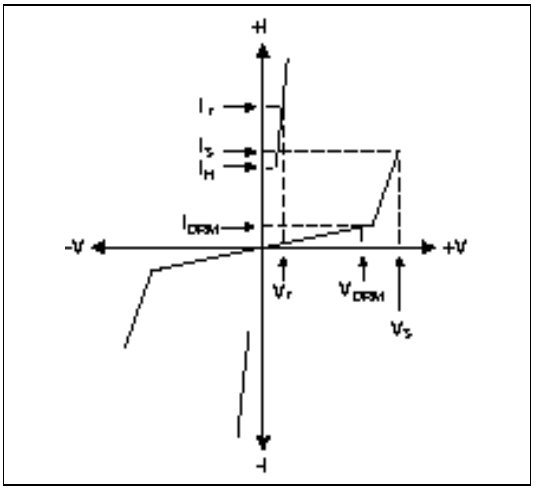
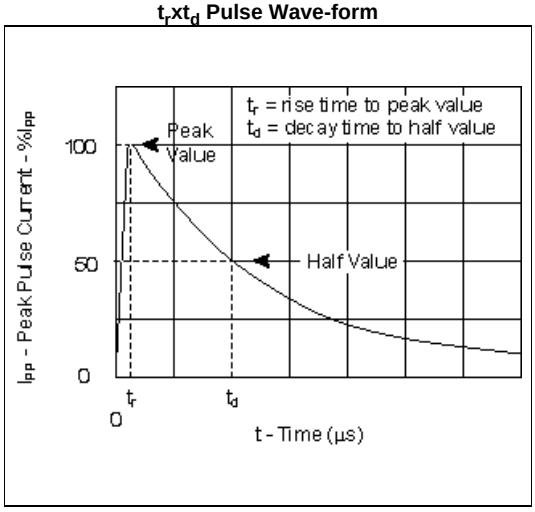
Thermal Considerations

Series	Symbol	Parameter	Value	Unit
P1900ME	T_j	Junction Temperature Range	-40 to +150	°C
	T_s	Storage Temperature Range	-65 to +150	°C
	T_c	Maximum Case Temperature	+75	°C
	$R_{\theta jc}$	Thermal Resistance: junction to case	+28	°C/W
	$R_{\theta ja}$	Thermal Resistance: junction to ambient	+90	°C/W

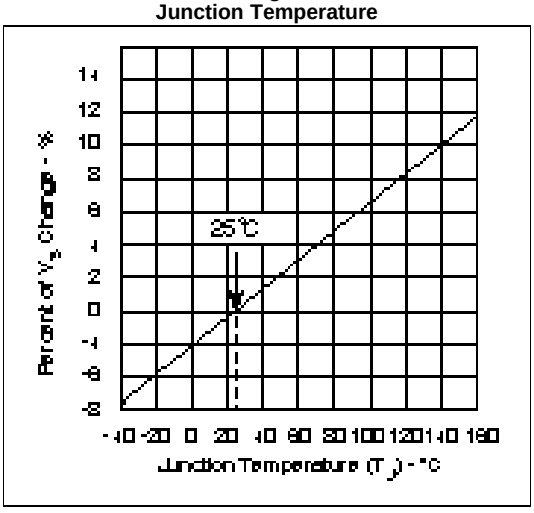
V-I Characteristics



t_rxt_d Pulse Wave-form



Normalized V_S Change vs. Junction Temperature



Normalized DC Holding Current vs. Case Temperature