

Features

- 350W peak pulse power (8/20us)
- Low leakage: nA level
- Low capacitance: 0.8pF typical
- Stand-off Voltage: 3.3 V ~ 24 V
- Low clamping voltage
- RoHS Compliant



IEC COMPATIBILITY (EN61000-4)

- IEC 61000-4-2 $\pm 30\text{kV}$ (contact) $\pm 30\text{kV}$ (air)
- IEC61000-4-4 (EFT) 40A (5/50ns)

SOD-323

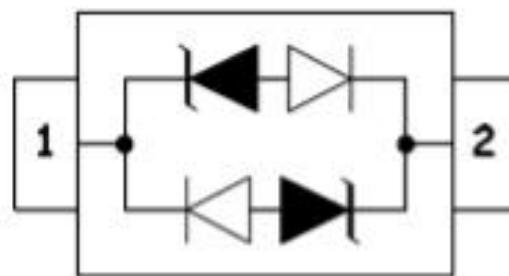
Applications

- USB Ports
- Smart Phones
- Wireless Systems
- Ethernet 10/100/1000 Base-T

Mechanical Data

- Package: SOD-323
- Lead Finish: Matte Tin
- Case Material: "Green" Molding Compound.
- UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 3 per J-STD-020
- Terminal Connections: See Diagram Below

Schematic & PIN Configuration



SOD-323

Absolute Maximum Rating

PTD322L08S3B35			
Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20 μ s)	Ppk	350	W
Peak Pulse Current (8/20 μ s)	Ipp	20	A
ESD per IEC 61000-4-2 (Air)	VESD	\pm 30	kV
ESD per IEC 61000-4-2 (Contact)		\pm 30	
Operating Temperature Range	TJ	-55 to +125	$^{\circ}$ C
Storage Temperature Range	Tstg	-55 to +150	$^{\circ}$ C
PTD322L08S5B35			
Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20 μ s)	Ppk	350	W
Peak Pulse Current (8/20 μ s)	Ipp	17	A
ESD per IEC 61000-4-2 (Air)	VESD	\pm 30	kV
ESD per IEC 61000-4-2 (Contact)		\pm 30	
Operating Temperature Range	TJ	-55 to +125	$^{\circ}$ C
Storage Temperature Range	Tstg	-55 to +150	$^{\circ}$ C
PTD322L08S8B35			
Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20 μ s)	Ppk	350	W
Peak Pulse Current (8/20 μ s)	Ipp	15	A
ESD per IEC 61000-4-2 (Air)	VESD	\pm 30	kV
ESD per IEC 61000-4-2 (Contact)		\pm 30	
Operating Temperature Range	TJ	-55 to +125	$^{\circ}$ C
Storage Temperature Range	Tstg	-55 to +150	$^{\circ}$ C

Absolute Maximum Rating

PTD322L08S12B35			
Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20 μ s)	Ppk	350	W
Peak Pulse Current (8/20 μ s)	Ipp	11	A
ESD per IEC 61000-4-2 (Air)	VESD	± 30	kV
ESD per IEC 61000-4-2 (Contact)		± 30	
Operating Temperature Range	TJ	-55 to +125	$^{\circ}$ C
Storage Temperature Range	Tstg	-55 to +150	$^{\circ}$ C
PTD322L08S15B35			
Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20 μ s)	Ppk	350	W
Peak Pulse Current (8/20 μ s)	Ipp	10	A
ESD per IEC 61000-4-2 (Air)	VESD	± 30	kV
ESD per IEC 61000-4-2 (Contact)		± 30	
Operating Temperature Range	TJ	-55 to +125	$^{\circ}$ C
Storage Temperature Range	Tstg	-55 to +150	$^{\circ}$ C
PTD322L08S24B35			
Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20 μ s)	Ppk	350	W
Peak Pulse Current (8/20 μ s)	Ipp	6	A
ESD per IEC 61000-4-2 (Air)	VESD	± 30	kV
ESD per IEC 61000-4-2 (Contact)		± 30	
Operating Temperature Range	TJ	-55 to +125	$^{\circ}$ C
Storage Temperature Range	Tstg	-55 to +150	$^{\circ}$ C

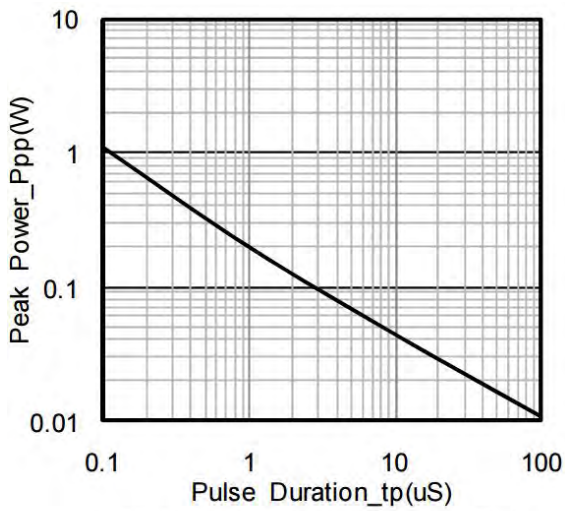
Absolute Maximum Rating

PTD322L08S3B35						
Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Working Voltage	V_{RWM}			3.3	V	
Breakdown Voltage	V_{BR}	4.0			V	$I_T = 1\text{mA}$
Reverse Leakage Current	I_R			20	μA	$V_{RWM} = 3.3\text{V}$
Clamping Voltage	V_C		7		V	$I_{PP} = 1\text{A}$ (8 x 20 μs pulse)
Clamping Voltage	V_C			19	V	$I_{PP} = 20\text{A}$ (8 x 20 μs pulse)
Junction Capacitance	C_J		0.8		pF	$V_R = 0\text{V}$, $f = 1\text{MHz}$
PTD322L08S5B35						
Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Working Voltage	V_{RWM}			5	V	
Breakdown Voltage	V_{BR}	6.2			V	$I_T = 1\text{mA}$
Reverse Leakage Current	I_R			5	μA	$V_{RWM} = 5\text{V}$
Clamping Voltage	V_C		9.8		V	$I_{PP} = 1\text{A}$ (8 x 20 μs pulse)
Clamping Voltage	V_C			21	V	$I_{PP} = 17\text{A}$ (8 x 20 μs pulse)
Junction Capacitance	C_J		0.8		pF	$V_R = 0\text{V}$, $f = 1\text{MHz}$
PTD322L08S8B35						
Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Working Voltage	V_{RWM}			8	V	
Breakdown Voltage	V_{BR}	8.5			V	$I_T = 1\text{mA}$
Reverse Leakage Current	I_R			2	μA	$V_{RWM} = 8\text{V}$
Clamping Voltage	V_C		13.5		V	$I_{PP} = 1\text{A}$ (8 x 20 μs pulse)
Clamping Voltage	V_C			25	V	$I_{PP} = 15\text{A}$ (8 x 20 μs pulse)
Junction Capacitance	C_J		0.8		pF	$V_R = 0\text{V}$, $f = 1\text{MHz}$

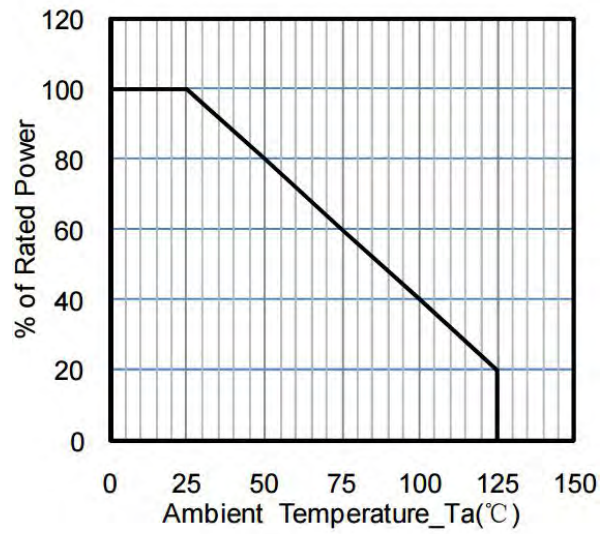
Absolute Maximum Rating

PTD322L08S12B35						
Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Working Voltage	V_{RWM}			12	V	
Breakdown Voltage	V_{BR}	13.3			V	$I_T = 1\text{mA}$
Reverse Leakage Current	I_R			1	μA	$V_{RWM} = 12\text{V}$
Clamping Voltage	V_C		19		V	$I_{PP} = 1\text{A}$ (8 x 20 μs pulse)
Clamping Voltage	V_C			30	V	$I_{PP} = 11\text{A}$ (8 x 20 μs pulse)
Junction Capacitance	C_J		0.8		pF	$V_R = 0\text{V}$, $f = 1\text{MHz}$
PTD322L08S15B35						
Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Working Voltage	V_{RWM}			15	V	
Breakdown Voltage	V_{BR}	16.7			V	$I_T = 1\text{mA}$
Reverse Leakage Current	I_R			1	μA	$V_{RWM} = 15\text{V}$
Clamping Voltage	V_C		24		V	$I_{PP} = 1\text{A}$ (8 x 20 μs pulse)
Clamping Voltage	V_C			32	V	$I_{PP} = 10\text{A}$ (8 x 20 μs pulse)
Junction Capacitance	C_J		0.8		pF	$V_R = 0\text{V}$, $f = 1\text{MHz}$
PTD322L08S24B35						
Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Working Voltage	V_{RWM}			24	V	
Breakdown Voltage	V_{BR}	26.7			V	$I_T = 1\text{mA}$
Reverse Leakage Current	I_R			1	μA	$V_{RWM} = 24\text{V}$
Clamping Voltage	V_C		43		V	$I_{PP} = 1\text{A}$ (8 x 20 μs pulse)
Clamping Voltage	V_C			43	V	$I_{PP} = 6\text{A}$ (8 x 20 μs pulse)
Junction Capacitance	C_J		0.8		pF	$V_R = 0\text{V}$, $f = 1\text{MHz}$

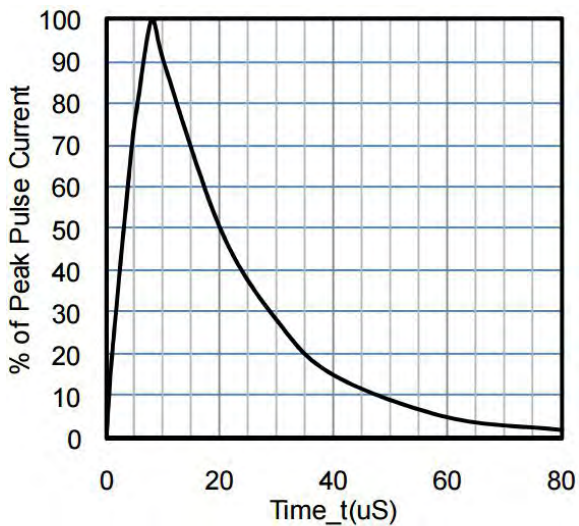
Typical Performance Characteristics (TA=25°C unless otherwise Specified)



Peak Pulse Power vs. Pulse Time

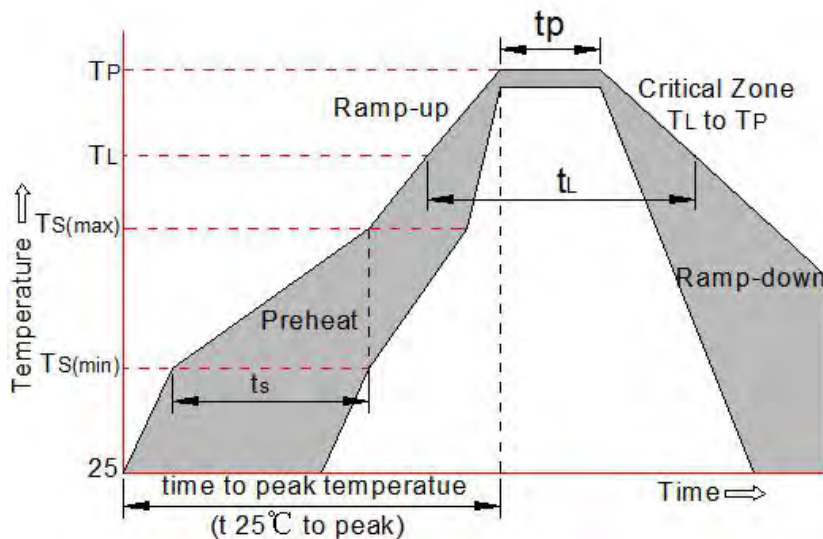


Power Derating Curve

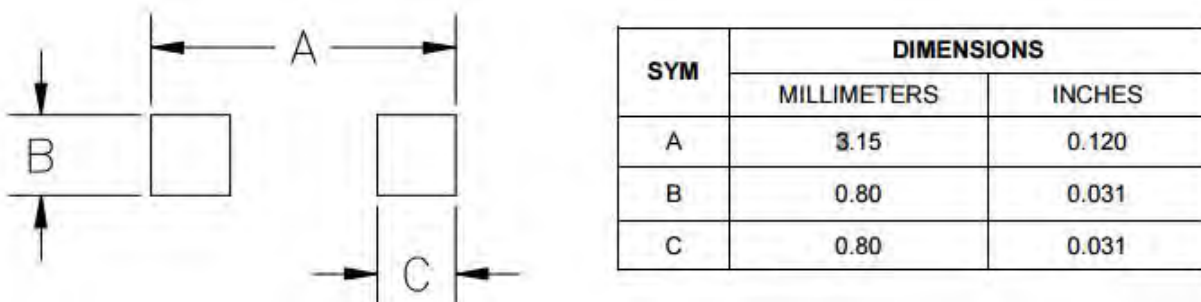
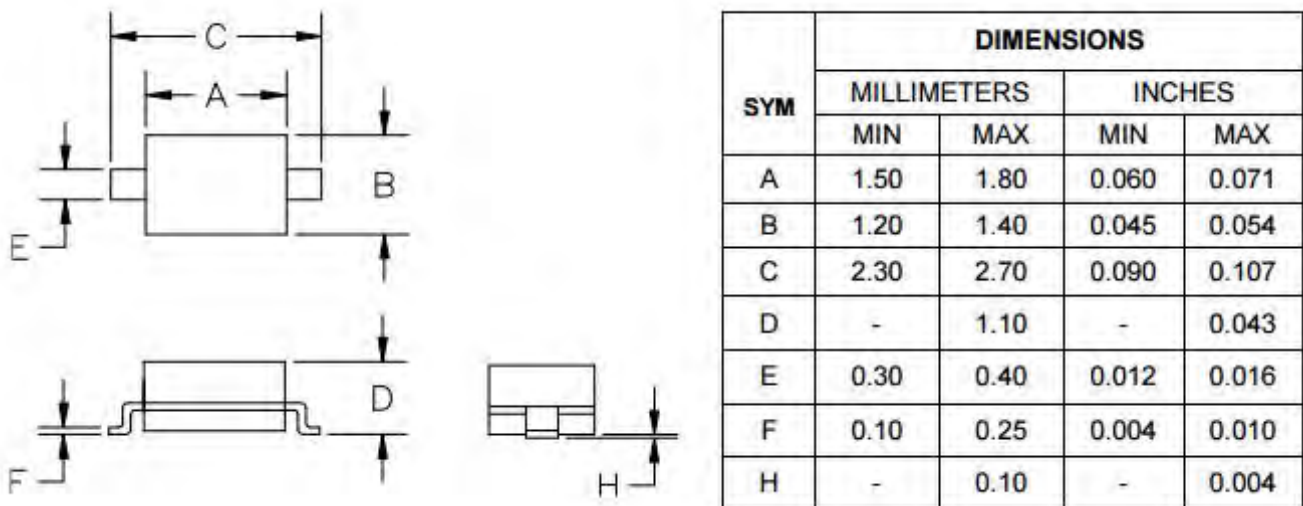


8 X 20uS Pulse Waveform

Reflow Condition		Pb-Free assembly (see as below)
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 (Liquid us 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) (Liquid us)	+217°C
	-Temperature(t_L)	60-150 secs.
Peak Temp (T_p)		+260(+0/-5)°C
Time within 5°C of actual Peak Temp (t_p)		30 secs. Max
Ramp-down Rate		6°C/sec. Max
Time 25°C to Peak Temp (T_P)		8 min. Max
Do not exceed		+260°C



Outline Drawing



Ordering information

Order code	Package	Base qty	Delivery mode
PTD322LXXB35	SOD323	3K	Tape and reel