

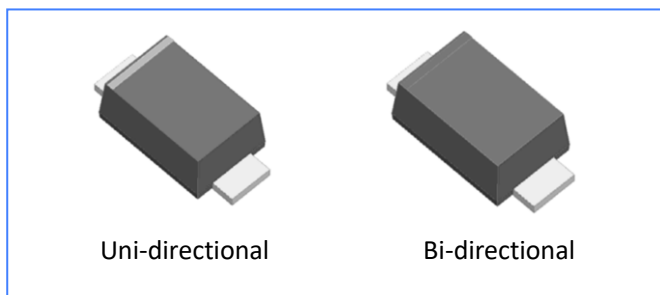
Y1T2D Series

Description

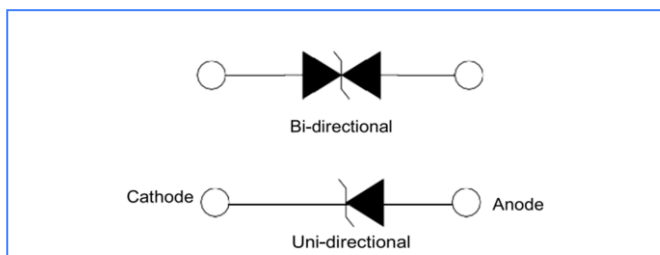
The Y1T2D series is designed specifically to protect sensitive electronic equipment from voltage transients induced by lightning and other transient voltage events. They have excellent clamping capability, high surge capability, low zener impedance and fast response time. The Y1T2D series is supplied in YINT Semiconductor's exclusive, cost-effective, highly reliable and is ideally suited for use in communication systems, automotive, numerical controls, process controls, medical equipment, business machines, power supplies and many other industrial/consumer Applications.

Features

- Case: SOD123FL
- Excellent clamping capability
- 200 W peak pulse power capability with a 10/1000 μ s waveform
- Typical failure mode is a short circuit condition for current events exceeding component rating
- Fast response time: typically less than 1.0ps from 0 Volts to VB min.
- IEC61000-4-2 (ESD) $\pm$ 30kV (air), $\pm$ 30kV (contact).



Functional Diagram



Applications

TVS devices are ideal for the transient voltage clamp protection of I/O Interfaces, DC power line bus and other circuits used in Telecom, Computer, Industrial and Consumer electronic applications.

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

Parameter	Symbol	Value	Unit
Peak Pulse Power Dissipation at $T_A=25^{\circ}\text{C}$ by 10/1000 μ s Waveform	P_{PK}	200	W
Power Dissipation on Infinite Heat Sink at $T_L=50^{\circ}\text{C}$	P_D	1	W
Peak Forward Surge Current, 8.3ms Single Half Sine Wave ¹	I_{FSM}	30	A
Maximum Instantaneous Forward Voltage at 50A for Unidirectional Only	V_F	3.5	V
Operating Temperature Range	T_J	-55 to +150	$^{\circ}\text{C}$
Storage Temperature Range	T_{STG}	-55 to +150	$^{\circ}\text{C}$

NOTES:

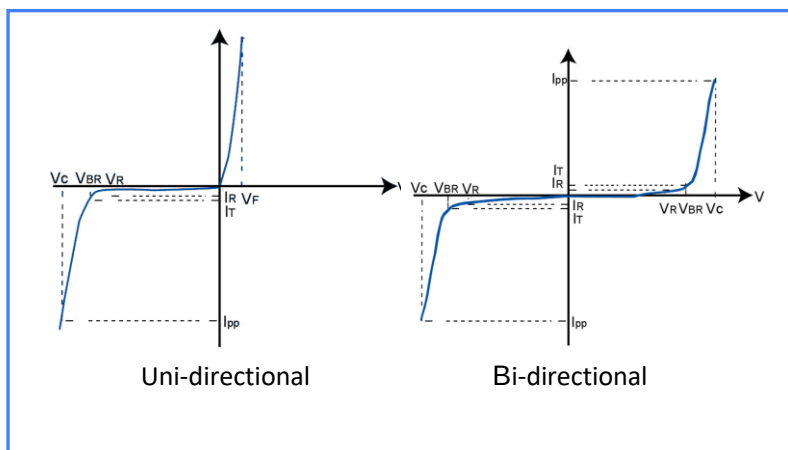
1. Measured on 8.3ms single half sine wave or equivalent square wave for unidirectional device only, duty cycle=4 per minute maximum.

Electrical characteristics (TA = 25 °C unless otherwise noted)

Part Number (Bi)	Part Number (Uni)	MARKING		Reverse Stand off Voltage V_R (Volts)	Breakdown Voltage V_{BR} (Volts)@ I_T		Test Current I_T (mA)	Maximum Reverse Leakage I_R @ V_R (μ A)	Maximum Peak Pulse Current I_{pp} (A)	Maximum Clamping Voltage V_C @ I_{pp} (V)
		BI	UNI		Min .V	Max .V				
Y1T2D5.0CA	Y1T2D5.0A	5.0CA	5.0A	5.0	6.40	7.00	10	400	21.70	9.2
Y1T2D6.0CA	Y1T2D6.0A	6.0CA	6.0A	6.0	6.67	7.37	10	400	19.40	10.3
Y1T2D6.5CA	Y1T2D6.5A	6.5CA	6.5A	6.5	7.22	7.98	10	250	17.90	11.2
Y1T2D7.0CA	Y1T2D7.0A	7.0CA	7.0A	7.0	7.78	8.60	10	100	16.70	12.0
Y1T2D7.5CA	Y1T2D7.5A	7.5CA	7.5A	7.5	8.33	9.21	1.0	50	15.50	12.9
Y1T2D8.0CA	Y1T2D8.0A	8.0CA	8.0A	8.0	8.89	9.83	1.0	25	14.70	13.6
Y1T2D8.5CA	Y1T2D8.5 A	8.5CA	8.5A	8.5	9.44	10.4	1.0	10	13.90	14.4
Y1T2D9.0CA	Y1T2D9.0 A	9.0CA	9.0A	9	10.0	11.1	1.0	5.0	13.00	15.4
Y1T2D10CA	Y1T2D10A	10CA	10A	10	11.1	12.3	1.0	2.0	11.80	17.0
Y1T2D11CA	Y1T2D11A	11CA	11A	11	12.2	13.5	1.0	2.0	11.00	18.2
Y1T2D12CA	Y1T2D12A	12CA	12A	12	13.3	14.7	1.0	2.0	10.10	19.9
Y1T2D13CA	Y1T2D13A	13CA	13A	13	14.4	15.9	1.0	1.0	9.30	21.5
Y1T2D14CA	Y1T2D14A	14CA	14A	14	15.6	17.2	1.0	1.0	8.62	23.2
Y1T2D15CA	Y1T2D15A	15CA	15A	15	16.7	18.5	1.0	1.0	8.20	24.4
Y1T2D16CA	Y1T2D16A	16CA	16A	16	17.8	19.7	1.0	1.0	7.69	26.0
Y1T2D17CA	Y1T2D17A	17CA	17A	17	18.9	20.9	1.0	1.0	7.25	27.6
Y1T2D18CA	Y1T2D18A	18CA	18A	18	20.0	22.1	1.0	1.0	6.85	29.2
Y1T2D19CA	Y1T2D19A	19CA	19A	19	21.0	23.3	1.0	1.0	6.54	30.6
Y1T2D20CA	Y1T2D20A	20CA	20A	20	22.2	24.5	1.0	1.0	6.17	32.4
Y1T2D22CA	Y1T2D22A	22CA	22A	22	24.4	26.9	1.0	1.0	5.63	35.5
Y1T2D24CA	Y1T2D24A	24CA	24A	24	26.7	29.5	1.0	1.0	5.14	38.9
Y1T2D26CA	Y1T2D26A	26CA	26A	26	28.9	31.9	1.0	1.0	4.75	42.1
Y1T2D28CA	Y1T2D28A	28CA	28A	28	31.1	34.4	1.0	1.0	4.41	45.4
Y1T2D30CA	Y1T2D30A	30CA	30A	30	33.3	36.8	1.0	1.0	4.13	48.4
Y1T2D33CA	Y1T2D33A	33CA	33A	33	36.7	40.6	1.0	1.0	3.75	53.3
Y1T2D36CA	Y1T2D36A	36CA	36A	36	40.0	44.2	1.0	1.0	3.44	58.1
Y1T2D40CA	Y1T2D40A	40CA	40A	40	44.4	49.1	1.0	1.0	3.10	64.5
Y1T2D43CA	Y1T2D43A	43CA	43A	43	47.8	52.8	1.0	1.0	2.88	69.4
Y1T2D45CA	Y1T2D45A	45CA	45A	45	50.0	55.3	1.0	1.0	2.75	72.7
Y1T2D48CA	Y1T2D48A	48CA	48A	48	53.3	58.9	1.0	1.0	2.58	77.4
Y1T2D51CA	Y1T2D51A	51CA	51A	51	56.7	62.7	1.0	1.0	2.43	82.4
Y1T2D54CA	Y1T2D54A	54CA	54A	54	60.0	66.3	1.0	1.0	2.30	87.1
Y1T2D58CA	Y1T2D58A	58CA	58A	58	64.4	71.2	1.0	1.0	2.14	93.6
Y1T2D60CA	Y1T2D60A	60CA	60A	60	66.7	73.7	1.0	1.0	2.07	96.8
Y1T2D64CA	Y1T2D64A	64CA	64A	64	71.1	78.6	1.0	1.0	1.94	103
Y1T2D70CA	Y1T2D70A	70CA	70A	70	77.8	86.0	1.0	1.0	1.77	113

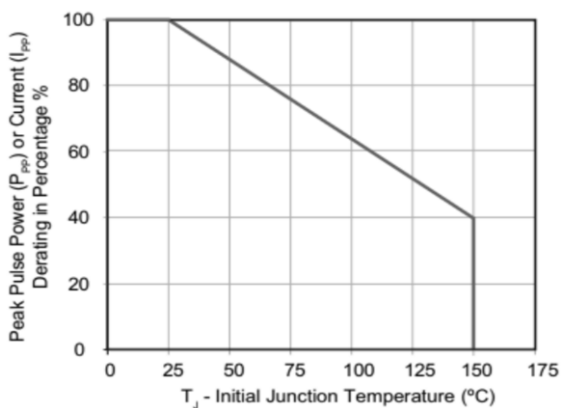
Y1T2D75CA	Y1T2D75A	75CA	75A	75	83.3	92.1	1.0	1.0	1.65	121
Y1T2D78CA	Y1T2D78A	78CA	78A	78	86.7	95.8	1.0	1.0	1.59	126
Y1T2D80CA	Y1T2D80A	80CA	80A	80	88.8	97.6	1.0	1.0	1.55	129
Y1T2D85CA	Y1T2D85A	85CA	85A	85	94.4	104	1.0	1.0	1.46	137
Y1T2D90CA	Y1T2D90A	90CA	90A	90	100	111	1.0	1.0	1.37	146
Y1T2D100CA	Y1T2D100A	100CA	100A	100	111	123	1.0	1.0	1.23	162
Y1T2D110CA	Y1T2D110A	110CA	110A	110	122	135	1.0	1.0	1.13	177
Y1T2D120CA	Y1T2D120A	120CA	120A	120	133	147	1.0	1.0	1.04	193
Y1T2D130CA	Y1T2D130A	130CA	130A	130	144	159	1.0	1.0	0.96	209
Y1T2D140CA	Y1T2D140A	140CA	140A	140	155	171	1.0	1.0	0.89	224
Y1T2D150CA	Y1T2D150A	150CA	150A	150	167	185	1.0	1.0	0.82	243
Y1T2D160CA	Y1T2D160A	160CA	160A	160	178	197	1.0	1.0	0.77	259
Y1T2D170CA	Y1T2D170A	170CA	170A	170	189	209	1.0	1.0	0.73	275
Y1T2D180CA	Y1T2D180A	180CA	180A	180	200	220	1.0	1.0	0.69	290
Y1T2D200CA	Y1T2D200A	200CA	200A	200	224	247	1.0	1.0	0.60	324

I-V Curve characteristics

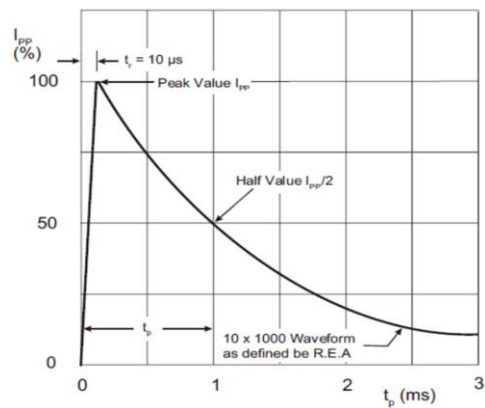


Symbol	Parameter
I_{PP}	Maximum Reverse Peak Pulse Current
V_C	Clamping Voltage @ I_{PP}
V_{RWM}	Working Peak Reverse Voltage
I_R	Maximum Reverse Leakage Current @ V_{RWM}
V_{BR}	Breakdown Voltage @ I_T (Test Current)

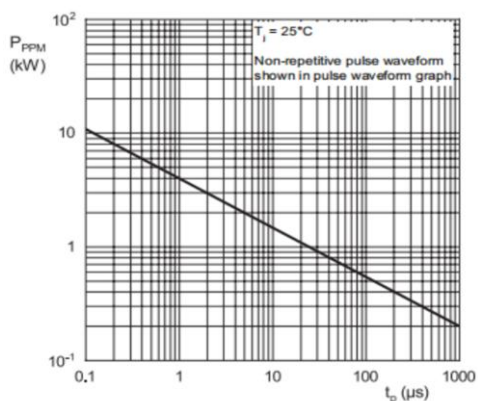
Rating & Characteristic Curves



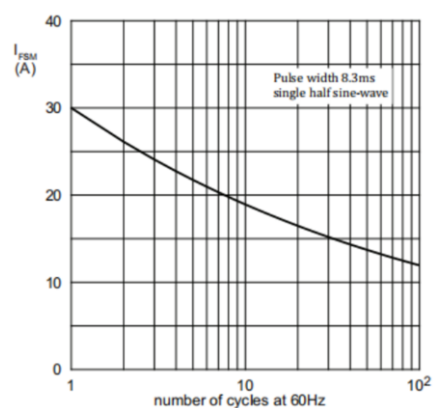
1. Peak pulse power derating curve



2. Pulse waveform

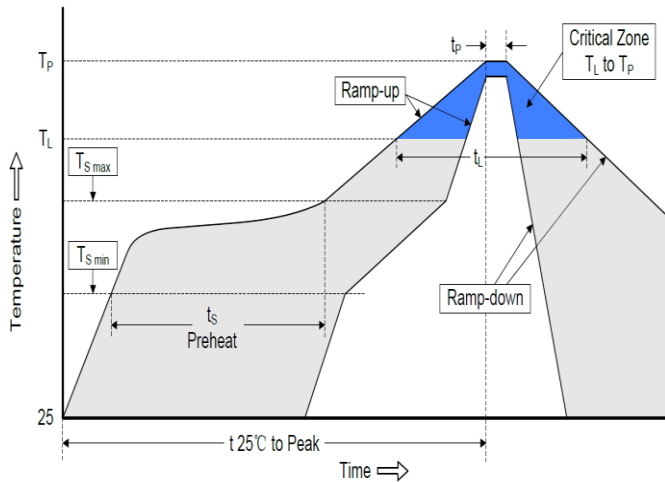


3. Peak pulse power rating curve



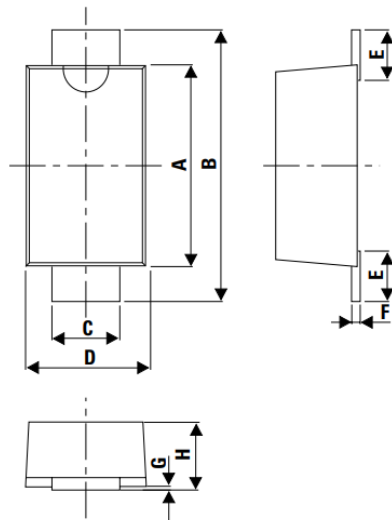
4. Maximum non-repetitive surge current

Soldering parameters



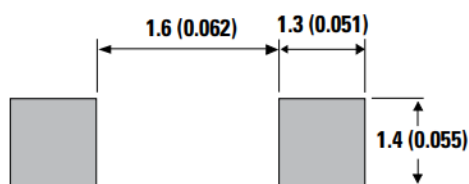
Profile Feature	Pb-Free Assembly
Average ramp-up rate (T_L to T_P)	3°C/second max.
Preheat -Temperature Min ($T_{S\min}$) -Temperature Max ($T_{S\max}$) -Time (min to max)(t_s)	150°C 200°C 60-180 seconds
$T_{S\max}$ to T_L -Ramp-up Rate	3°C/second max.
Time maintained above: - Temperature (T_L) - Time (t_L)	217°C 60-150 seconds
Peak Temperature (T_P)	260°C
Time within 5°C of actual Peak Temperature (t_P)	20-40 seconds
Ramp-down Rate	6°C /second max.
Time 25°C to Peak Temperature	8 minutes max.

Package outline dimensions in millimeters

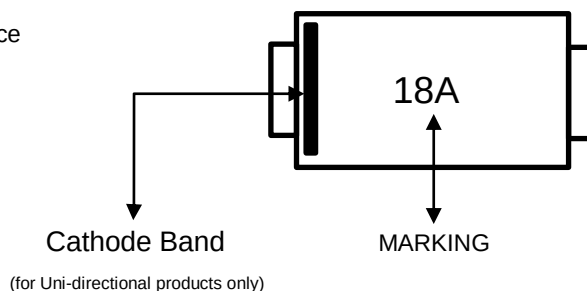
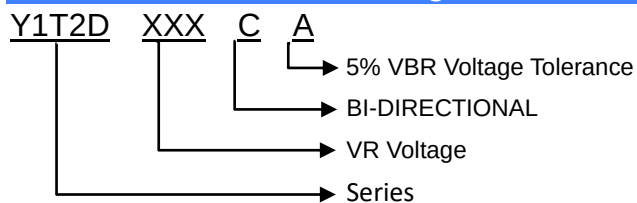


Dimensions	Millimeter	
	Min	Max
A	2.50	3.10
B	3.40	3.90
C	0.70	1.20
D	1.50	2.00
E	0.35	0.90
F	0.05	0.26
G	0.00	0.10
H	0.90	1.25

Mounting Pad Layout



Part number code & Marking code



Disclaimer

Specifications are subject to change without notice.

The device characteristics and parameters in this data sheet can and do vary in different applications and actual device performance may vary over time.

Users should verify actual device performance in their specific applications.