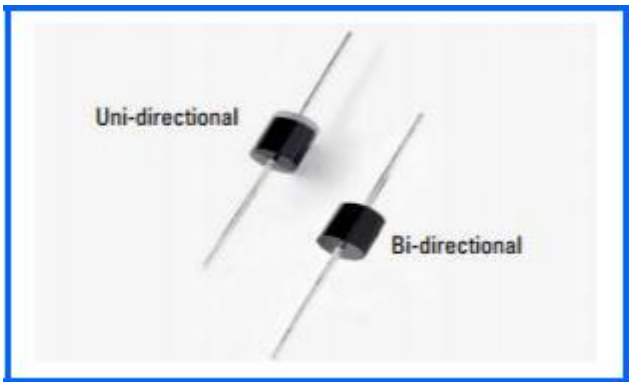
30KP Transient Voltage Suppressor Diode Series

Features

- 30000W peak pulse power capability at 10/1000μs waveform, repetition rate (duty cycle): 0.05%
- Plastic package Typical IR less than 2 μA above 64V
- Polarity:Color band denoted positive end (cathode) except Bidirectional.
- Glass passivated chip junction in P600 package.
- Low incremental surge resistance.
- Excellent clamping capability
- High Temperature soldering guaranteed: 265 / ℃10 seconds/.375″, (9.5mm) lead length, 5lbs (2.3kg) tension
- Fast response time
- Plastic package has underwriters laboratory flammability 94V-0
- Meets MSL level 1, per J-STD-020.
- Uni-directional and Bi-directional



Mechanical Data

- Case: Moulded plastic over glass passivated junction
- Terminal: Plated Axial leads, solderable per MIL-STD-750, Method 2026
- Polarity: Color band denotes cathode except bi-directional models
- Mounting Position: Any
- Weight: 2.60g

Applications

- I/O interface
- VCC bus
- AC/DC power supply
- Low frequency signal transmission line (RS232, RS485, etc.)

Maximum Ratings and Characteristics

Rating	Symbol	Value	Units
Peak pulse power dissipation with a 10/1000 μs waveform (Note1, Fig.1)	P_{PPM}	Minimum 30000	Watts
Peak pulse current of at 10/1000μs waveform (Note 1, Fig.3)	I_{PPM}	See Table	Amps
Steady state power dissipation at TL=75℃(Fig.5)	$P_{M(AV)}$	8.0	Watts
Peak forward surge current, 8.3ms single half sine-wave superimposed on rated load, (JEDEC Method) (Note2, Fig.6)	I_{FSM}	400	Amps
Operating junction and storage temperature range	T_J ,T_{STG}	-55 to +175	°C
Typical thermal resistance junction to lead	$R_{\theta JL}$	8	℃/W
Typical thermal resistance junction to ambient	$R_{\theta JA}$	40	℃/W

Notes :

1. Non-repetitive current pulse, per Fig.3 and derated above T_A=25℃per Fig.2
2. 8.3ms single half sine-wave, or equivalent square wave, duty cycle=4 pulses per minutes maximum.

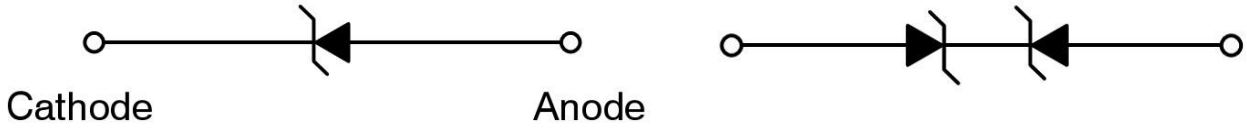
Electrical Characteristics TA = 25°

Part Number (Bi)	Part Number (Uni)	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(μA)	Maximum Clamping Voltage V_C @ I_{pp}(V)	Maximum Peak Pulse Current I pp (A)
			Min .V	Max .V				
30KPA 28CA	30KPA 28A	28	31.28	34.57	50	5000	50	606
30KPA 30CA	30KPA 30A	30	33.51	37.04	50	5000	55.2	548.9
30KPA 33CA	30KPA 33A	33	36.9	40.78	50	5000	58.5	517.9
30KPA 36CA	30KPA 36A	36	40.2	44.43	50	5000	61.8	490.3
30KPA 39CA	30KPA 39A	39	43.6	48.19	20	2000	67.2	450.9
30KPA 42CA	30KPA 42A	42	46.9	51.84	10	1000	72	420.8
30KPA 43CA	30KPA 43A	43	48	53.05	10	1000	73	415.1
30KPA 45CA	30KPA 45A	45	50.3	55.59	5	250	77.4	391.5
30KPA 48CA	30KPA 48A	48	53.6	59.24	5	150	81.6	371.3
30KPA 51CA	30KPA 51A	51	57	63	5	50	86.4	350.7
30KPA 54CA	30KPA 54A	54	60.3	66.65	5	20	91.4	331.5
30KPA 58CA	30KPA 58A	58	64.8	71.62	5	20	92.4	327.9
30KPA 60CA	30KPA 60A	60	67	74.05	5	15	102	297.1
30KPA 64CA	30KPA 64A	64	71.5	79.03	5	10	104	291.3
30KPA 66CA	30KPA 66A	66	73.7	81.46	5	2	107	283.2
30KPA 70CA	30KPA 70A	70	78.2	86.43	5	2	109	278
30KPA 71CA	30KPA 71A	71	79.3	87.65	5	2	111.5	271.7
30KPA 72CA	30KPA 72A	72	80.4	88.86	5	2	114	265.8
30KPA 75CA	30KPA 75A	75	83.8	92.62	5	2	119.4	253.8
30KPA 78CA	30KPA 78A	78	87.1	96.27	5	2	129	234.9
30KPA 84CA	30KPA 84A	84	93.8	103.67	5	2	139.2	217.7
30KPA 90CA	30KPA 90A	90	100.5	111.08	5	2	146.4	207
30KPA 96CA	30KPA 96A	96	107.2	118.48	5	2	156	194.2
30KPA 102CA	30KPA 102A	102	113.9	125.89	5	2	165.6	183
30KPA 108CA	30KPA 108A	108	120.6	133.29	5	2	175.2	172.9
30KPA 120CA	30KPA 120A	120	134	148.11	5	2	194.4	155.9
30KPA 132CA	30KPA 132A	132	147.4	162.92	5	2	213	142.3
30KPA 144CA	30KPA 144A	144	160.8	177.73	5	2	223.2	135.8
30KPA 150CA	30KPA 150A	150	167.6	185.24	5	2	233.4	129.8
30KPA 156CA	30KPA 156A	156	174.3	192.65	5	2	245	123.7
30KPA 160CA	30KPA 160A	160	178.7	197.51	5	2	252.6	120
30KPA 168CA	30KPA 168A	168	187.7	207.46	5	2	272.4	111.2
30KPA 170CA	30KPA 170A	170	189.9	209.89	5	2	275	110.2
30KPA 180CA	30KPA 180A	180	201.1	222.27	5	2	290.4	104.3
30KPA 198CA	30KPA 198A	198	221.2	244.48	5	2	319.8	94.7
30KPA 216CA	30KPA 216A	216	241.3	266.7	5	2	348.6	86.9
30KPA 240CA	30KPA 240A	240	268.1	296.32	5	2	387	78.3
30KPA 258CA	30KPA 258A	258	288.2	318.54	5	2	416.4	72.8
30KPA 260CA	30KPA 260A	260	290.4	320.97	5	2	416	72.8

30KPA 270CA	30KPA 270A	270	301.6	333.35	5	2	436.2	69.5
30KPA 280CA	30KPA 280A	280	312.8	345.73	5	2	464	65.3
30KPA 288CA	30KPA 288A	288	321.7	355.56	5	2	469.9	64.5
30KPA 300CA	30KPA 300A	300	334	370.38	5	2	484	62

Notes: For bidirectional type having VR of 10V and less, the IR limit is double.

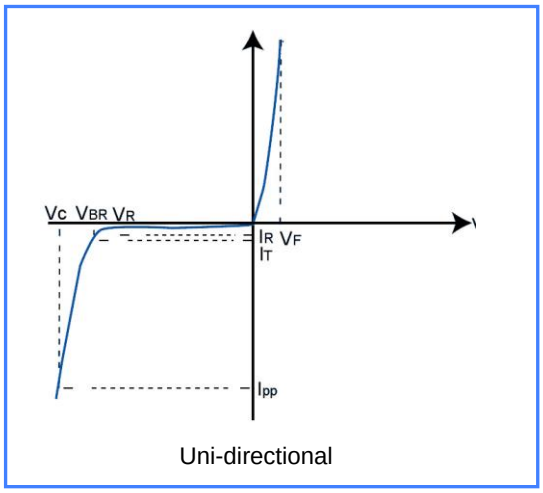
Functional Diagram



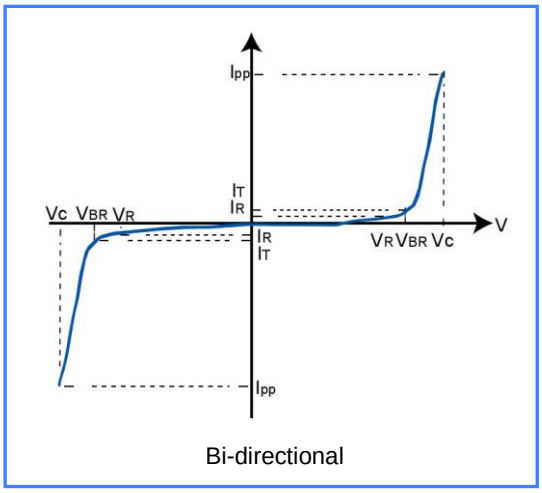
Uni-directional

Bi-directional

I-V Curve Characteristics



Uni-directional



Bi-directional

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
I_T	Test Current

Rating & Characteristic Curves

Figure 1 - Peak Pulse Power Rating Curve

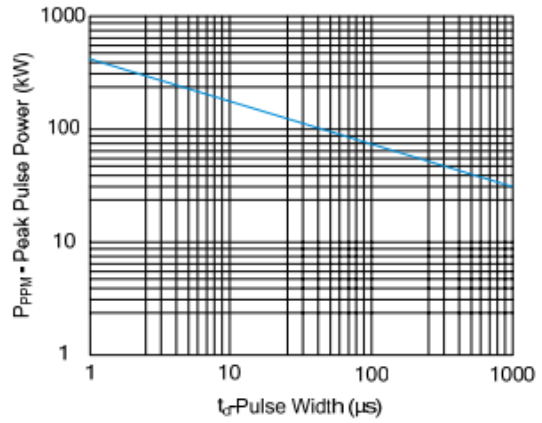


Figure 2 - Pulse Derating Curve

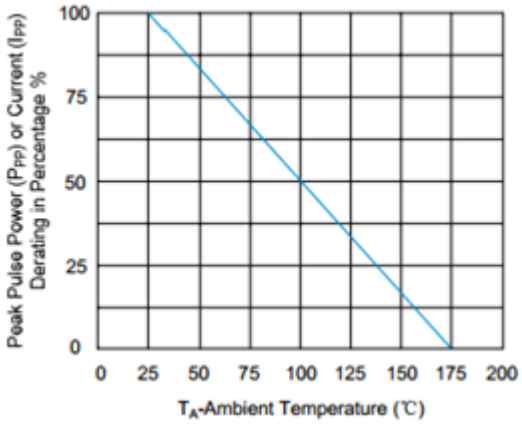


Figure 3 - Pulse Waveform

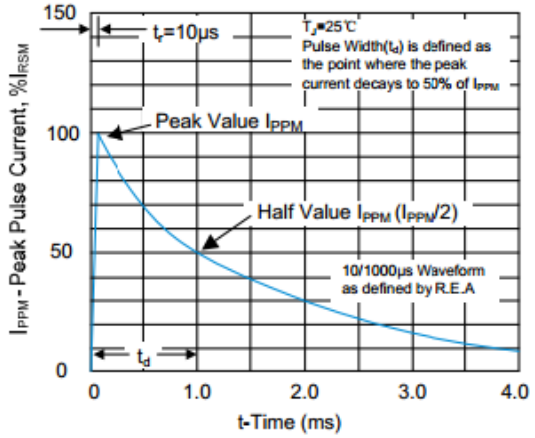


Figure 4 - Typical Junction Capacitance

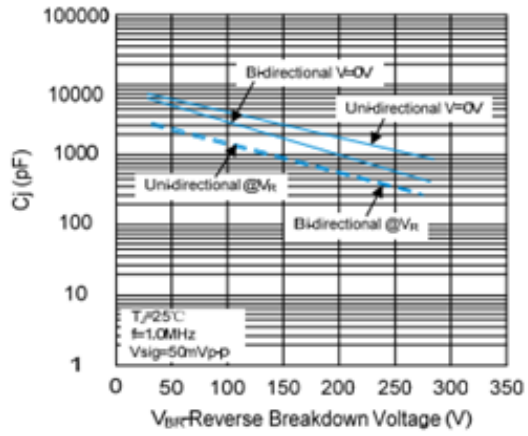


Figure 5 - Steady State Power Dissipation Derating Curve

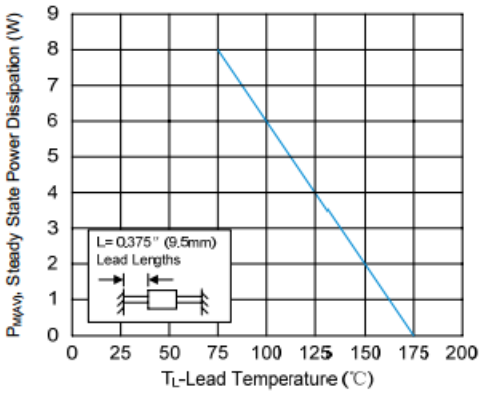
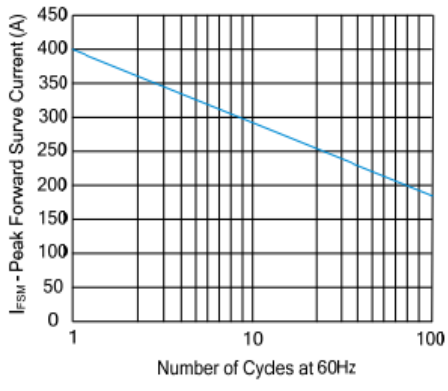
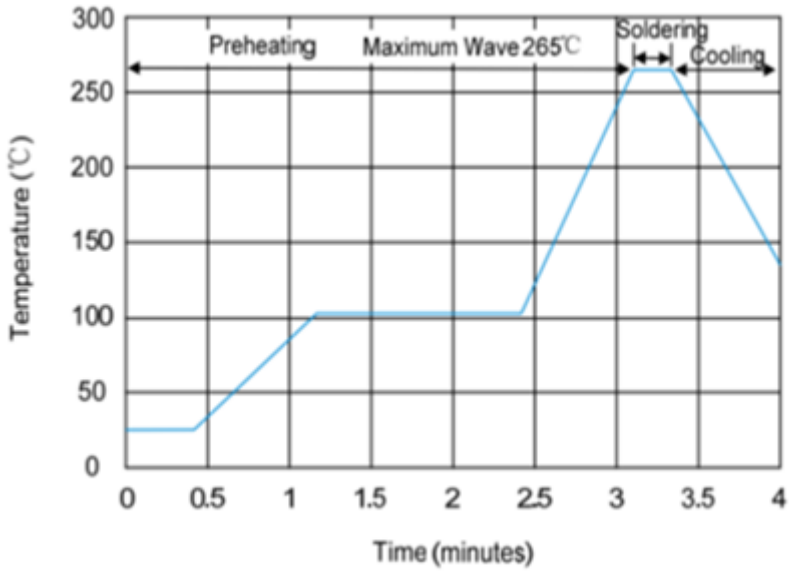


Figure 6 - Maximum Non-Repetitive Forward Surge Current Uni-Directional Only

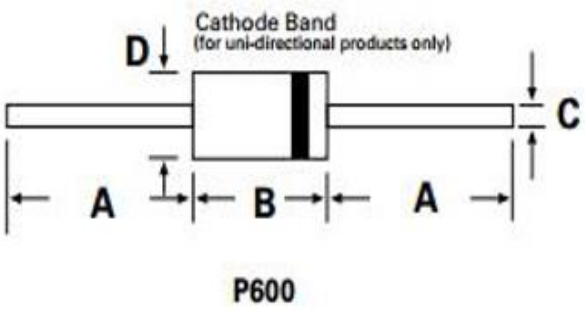


Recommended Soldering Conditions



Item	Conditions
Peak Temperature	265℃
Dipping Time	10 seconds
Soldering	1 time

Dimensions



P600

Dimensions	Inches		Millimeters	
	Min	Max	Min	Max
A	1.00	-	25.4	-
B	0.340	0.360	8.60	9.1
C	0.048	0.052	1.22	1.32
D	0.340	0.360	8.6	9.1

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.