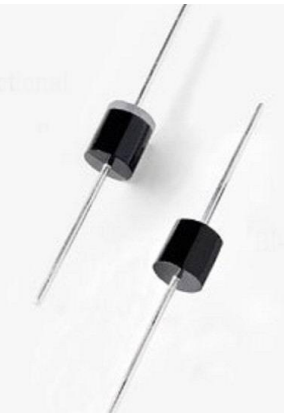
3KP Transient Voltage Suppressor Diode Series

General Information

The 3KP series is designed to protect voltage sensitive components from high voltage, high energy transients. They have excellent clamping capability, high surge capability, low zener impedance and fast response time. The 3KP 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

- P600 glass passivated chip junction
- Plastic package
- Polarity:Color band denoted positive end (cathode) except Bidirectional.
- Typical failure mode is short from over-specified voltage or current
- Fast response time: typically less than 1.0ps from 0 Volts to BV min.
- High Temperature soldering:260° C/10 seconds at terminals.
- Solder dip 275 ° C max. 10 s, per JESD 22-B106

Typical Applications

Use in sensitive electronics protection against voltage transients induced by inductive load switching and lighting on ICs, MOSFET, signal lines of sensor units for consumer, computer, industrial, automotive, and telecommunication.

Electrical Characteristics (@ T_A = 25° C Unless Otherwise Noted)

Parameter	Symbol	Value	Unit
Peak pulse power dissipation with a 10/1000 μ s waveform	P_{PK}	3000	Watts
Peak pulse current with a 10/1000 μ s waveform	I_{FSM}	See next table	Amps
Power dissipation on infinite heat sink at T_L= 75 ° C	P_D	7	Watts
Peak forward surge current 8.3 ms single half sine-wave	I_{FSM}	300	Amps
Instantaneous forward voltage at 100 A for Unidirectional only	V_F	3.5	V
Operating junction and storage temperature range	T_J ,T_{STG}	-55 to +175	° C

Notes :

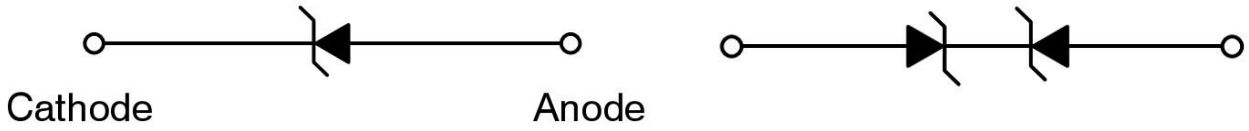
(1)Non-repetitive current pulse, per fig. 6 and derated above T_A = 25 ° C per fig. 2

(2)Measured 8.3 ms single half sine-wave or equivalent square wave, duty cycle = 4 pulses per minute maximum

Electrical Characteristics

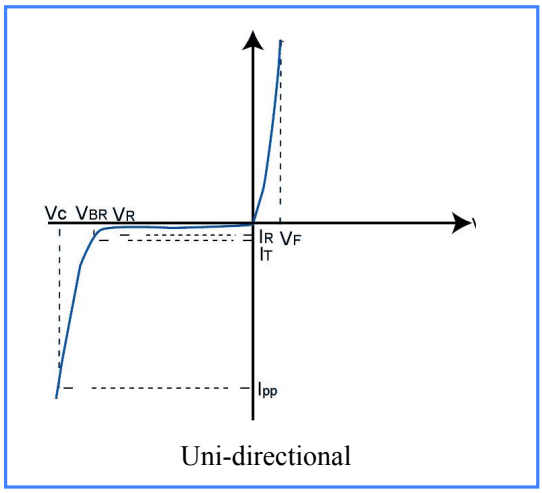
Part Number (Bi)	Part Number (Uni)	Reverse Stand off Voltage V_R (Volts)	Breakdown Voltage V_{BR} (Volts)@I_T		Test Current I_T(mA)	Maximum Reverse Leakage I_R@ V_R(μA)	Maximum Peak Pulse Current I pp (A)	Maximum Clamping Voltage V_C@ I $_{PP}$(V)
			Min .V	Max .V				
3.0KP5.0CA	3.0KP5.0A	5.00	6.40	7.25	50	5000	326.0	9.2
3.0KP6.0CA	3.0KP6.0A	6.00	6.67	7.37	50	5000	291.0	10.3
3.0KP8.0A	3.0KP8.0	8.00	8.99	10.23	5	150	220.6	13.6
3.0KP10CA	3.0KP10A	10.0	11.10	12.30	5	15	176.5	17.0
3.0KP11CA	3.0KP11A	11.0	12.20	13.50	5	15	164.8	18.2
3.0KP12CA	3.0KP12A	12.0	13.30	14.70	5	2	150.8	19.9
3.0KP15CA	3.0KP15A	15.0	16.70	18.50	5	2	123.0	24.4
3.0KP16CA	3.0KP16A	16.0	17.80	19.70	5	2	115.4	26.0
3.0KP18CA	3.0KP18A	18.0	20.00	22.10	5	2	102.7	29.2
3.0KP20CA	3.0KP20A	20.0	22.20	24.50	5	2	92.6	32.4
3.0KP22CA	3.0KP22A	22.0	24.40	26.90	5	2	84.5	35.5
3.0KP24CA	3.0KP24A	24.0	26.70	29.50	5	2	77.1	38.9
3.0KP26CA	3.0KP26A	26.0	28.90	31.90	5	2	71.3	42.1
3.0KP28CA	3.0KP28A	28.0	31.10	34.40	5	2	66.1	45.4
3.0KP30CA	3.0KP30A	30.0	33.30	36.80	5	2	62.0	48.4
3.0KP33CA	3.0KP33A	33.0	36.70	40.60	5	2	53.3	56.3
3.0KP36CA	3.0KP36A	36.0	40.00	44.20	5	2	51.6	58.1
3.0KP40CA	3.0KP40A	40.0	44.40	49.10	5	2	46.5	64.5
3.0KP43CA	3.0KP43A	43.0	47.80	52.80	5	2	43.2	69.4
3.0KP48CA	3.0KP48A	48.0	53.30	58.90	5	2	38.8	77.4
3.0KP51CA	3.0KP51A	51.0	56.70	62.70	5	2	36.4	82.4
3.0KP54 CA	3.0KP54 A	54.0	60.00	66.30	5	2	34.4	87.1
3.0KP60CA	3.0KP60A	60.0	66.70	73.70	5	2	31.0	96.8
3.0KP64CA	3.0KP64A	64.0	71.10	78.60	5	2	29.1	103.0
3.0KP70CA	3.0KP70A	70.0	77.80	86.00	5	2	26.5	113.0
3.0KP75CA	3.0KP75A	75.0	83.30	92.10	5	2	24.8	121.0
3.0KP90CA	3.0KP90A	90.0	100.00	111.00	5	2	20.5	146.0
3.0KP100CA	3.0KP100A	100.0	111.00	123.00	5	2	18.5	162.0
3.0KP120CA	3.0KP120A	120.0	133.00	147.00	5	2	15.5	193.0
3.0KP130CA	3.0KP130A	130.0	144.00	159.00	5	2	14.4	209.0
3.0KP150CA	3.0KP150A	150.0	167.00	185.00	5	2	12.3	243.0
3.0KP160CA	3.0KP160A	160.0	178.00	197.00	5	2	11.6	259.0
3.0KP180CA	3.0KP180A	180.0	200.00	221.00	5	2	10.4	289.0
3.0KP200CA	3.0KP200A	200.0	222.00	246.00	5	2	9.1	329.2
3.0KP220CA	3.0KP220A	220.0	244.00	270.00	5	2	8.1	371.1

Functional Diagram

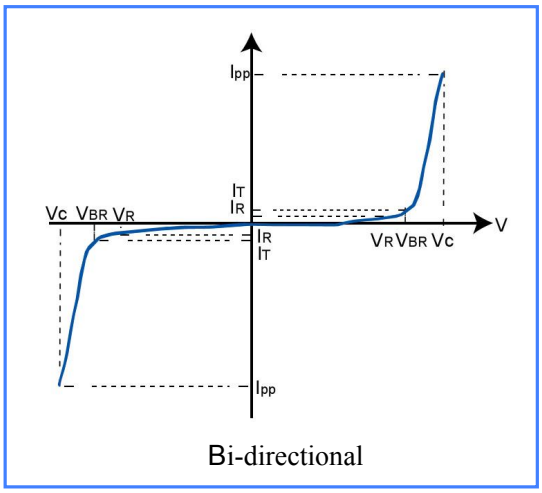


Uni-directional　　Bi-directional

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

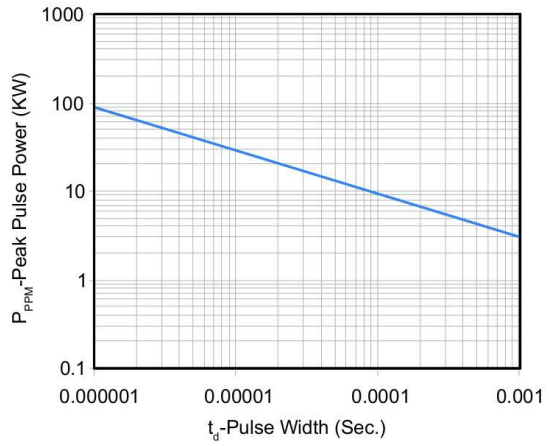


Figure 2 - Pulse Derating Curve

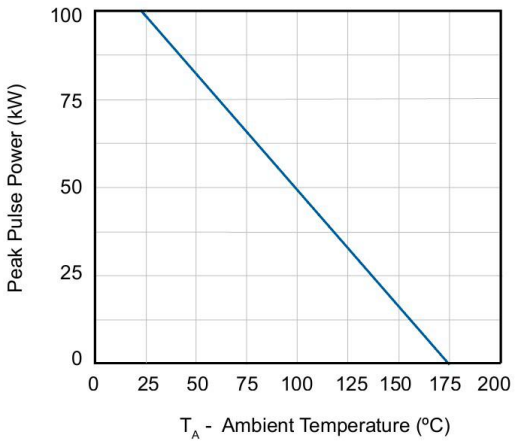


Figure 3 - Pulse Waveform

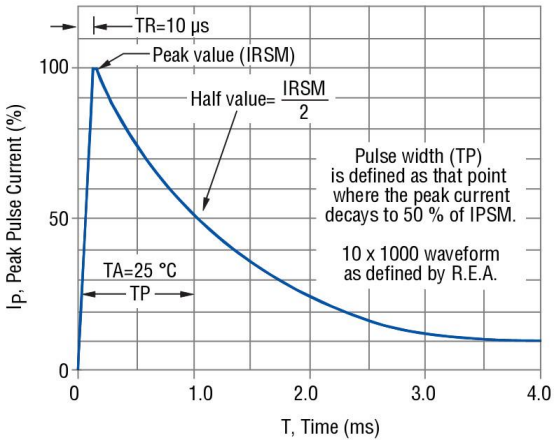


Figure 4 - Typical Junction Capacitance

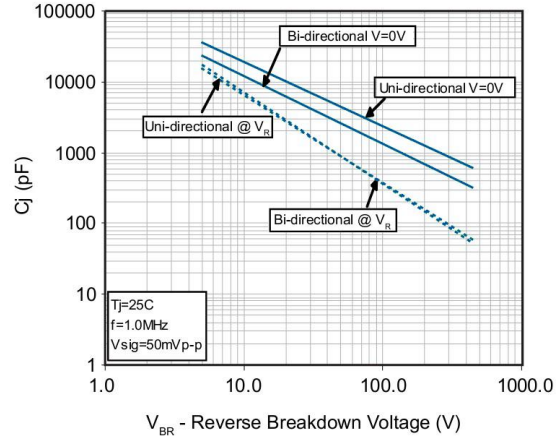


Figure 5 - Pulse Derating Curve

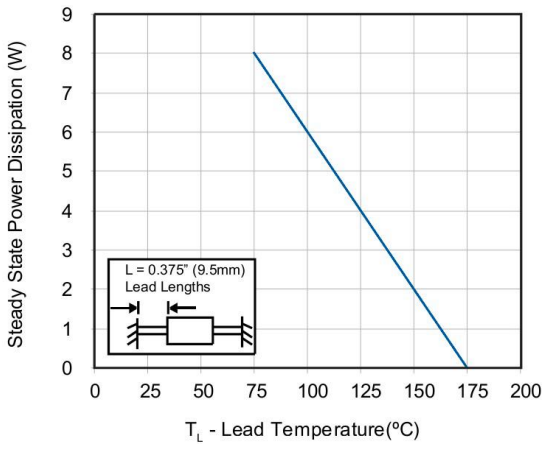
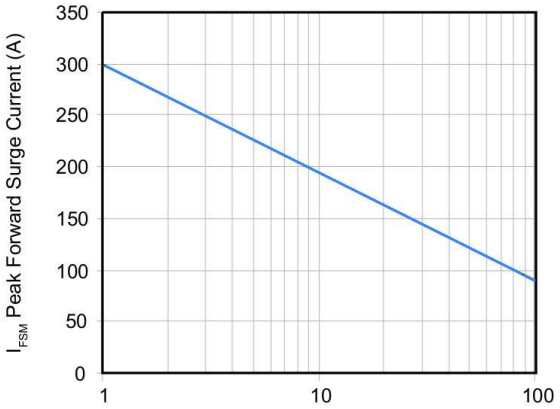
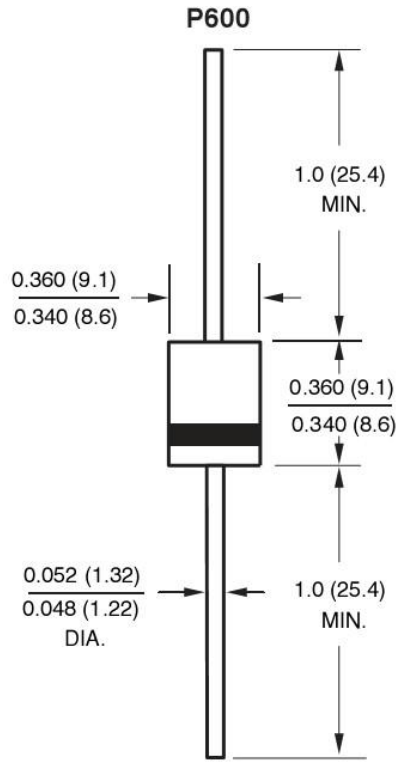


Figure 6 - Maximum Non-Repetitive Surge Current



PACKAGE OUTLINE DIMENSIONS in inches (millimeters)



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.