15KP Transient Voltage Suppressor Diode Series

General Information

The 15KP 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 15KP 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 (@ TA = 25° C Unless Otherwise Noted)

Parameter	Symbol	Value	Unit
Peak pulse power dissipation with a 10/1000 μs waveform	P_{PK}	15000	Watts
Peak pulse current with a 10/1000 μs waveform	I_{FSM}	See next table	Amps
Power dissipation on infinite heat sink at T_L= 75 °C	P_D	8	Watts
Peak forward surge current 8.3 ms single half sine-wave	I_{FSM}	400	Amps
Operating junction and storage temperature range	T_J ,T_{STG}	-55 to +175	°C

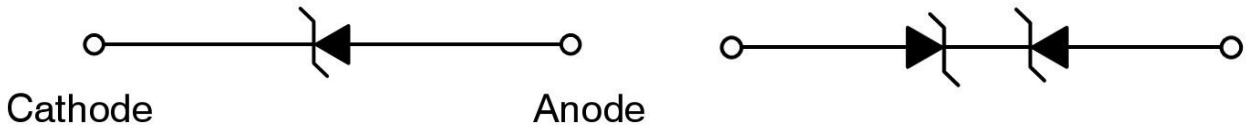
Notes :

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

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				
15KP17CA	15KP17A	17.0	18.88	20.80	50	5000	515.4	29.3
15KP18CA	15KP18A	18.0	20.00	22.20	50	5000	488.7	30.9
15KP20CA	15KP20A	20.0	22.20	24.60	20	1500	440.2	34.3
15KP22CA	15KP22A	22.0	24.40	27.00	10	500	407.0	37.1
15KP24CA	15KP24A	24.0	26.60	29.40	5	150	371.0	40.7
15KP26CA	15KP26A	26.0	28.80	31.80	5	50	343.2	44.0
15KP28CA	15KP28A	28.0	31.10	34.40	5	25	317.9	47.5
15KP30CA	15KP30A	30.0	33.30	36.90	5	15	297.8	50.7
15KP33CA	15KP33A	33.0	36.60	40.50	5	2	276.1	54.7
15KP36CA	15KP36A	36.0	39.90	44.10	5	2	252.5	59.8
15KP40CA	15KP40A	40.0	44.40	49.10	5	2	229.5	65.8
15KP43CA	15KP43A	43.0	47.80	52.80	5	2	216.3	69.8
15KP45CA	15KP45A	45.0	50.10	55.50	5	2	207.4	72.8
15KP48CA	15KP48A	48.0	53.40	59.10	5	2	194.3	77.7
15KP51CA	15KP51A	51.0	56.70	62.70	5	2	182.1	82.9
15KP54 CA	15KP54 A	54.0	60.00	66.30	5	2	172.2	87.7
15KP58 CA	15KP58 A	58.0	64.40	71.20	5	2	161.0	93.8
15KP60CA	15KP60A	60.0	66.60	73.50	5	2	155.0	97.4
15KP64CA	15KP64A	64.0	71.10	78.60	5	2	144.9	104.2
15KP70CA	15KP70A	70.0	77.80	86.00	5	2	132.9	113.6
15KP75CA	15KP75A	75.0	83.30	92.10	5	2	123.8	122.0
15KP78CA	15KP78A	78.0	86.70	95.70	5	2	119.7	126.1
15KP85CA	15KP85A	85.0	94.40	104.0	5	2	109.7	137.6
15KP90CA	15KP90A	90.0	99.90	110.4	5	2	103.7	145.6
15KP100CA	15KP100A	100.0	111.0	123.0	5	2	93.6	161.3
15KP110CA	15KP110A	110.0	122.0	135.0	5	2	84.5	178.6
15KP120CA	15KP120A	120.0	133.2	147.3	5	2	78.5	192.3
15KP130CA	15KP130A	130.0	144.0	159.0	5	2	72.5	208.3
15KP150CA	15KP150A	150.0	167.0	185.0	5	2	62.4	241.9
15KP160CA	15KP160A	160.0	178.0	197.0	5	2	58.4	258.6
15KP170CA	15KP170A	170.0	189.0	209.0	5	2	55.4	272.7
15KP180CA	15KP180A	180.0	200.1	221.0	5	2	52.3	288.5
15KP200CA	15KP200A	200.0	222.0	247.0	5	2	47.3	319.1
15KP220CA	15KP220A	220.0	244.0	272.0	5	2	35.2	352.5
15KP240CA	15KP240A	240.0	267.4	293.9	5	2	39.3	384.6
15KP260CA	15KP260A	260.0	289.6	318.2	5	2	36.2	416.7
15KP280CA	15KP280A	280.0	312.1	342.5	5	2	33.2	454.5

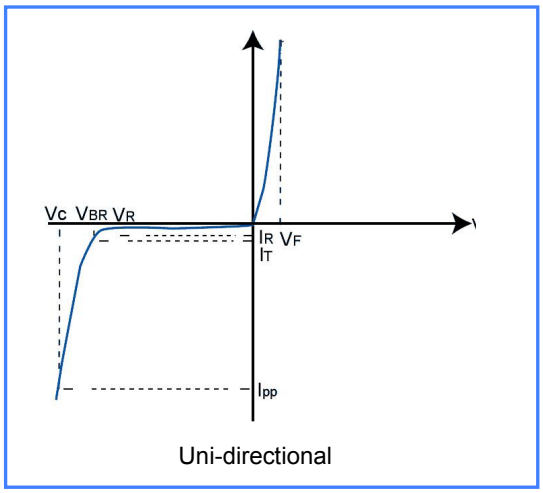
Functional Diagram



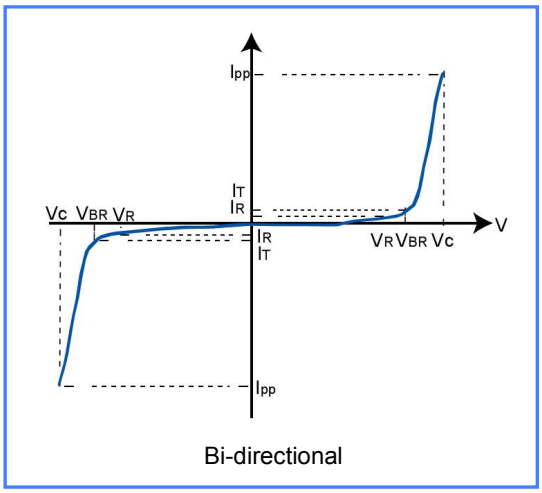
Uni-directional

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

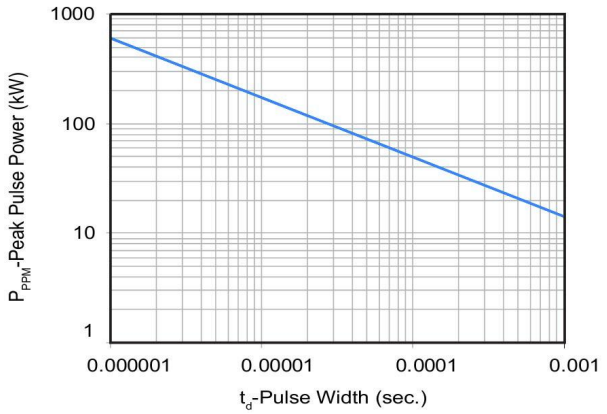


Figure 2 - Pulse Derating Curve

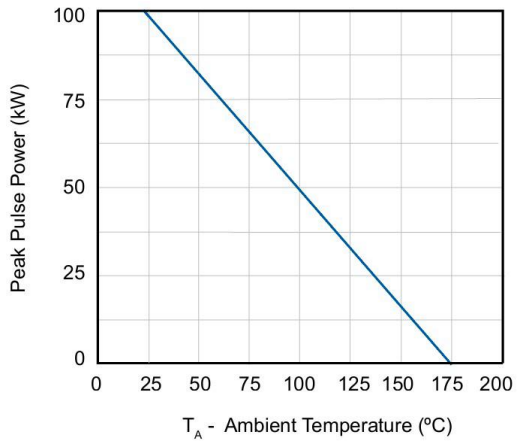


Figure 3 - Pulse Waveform

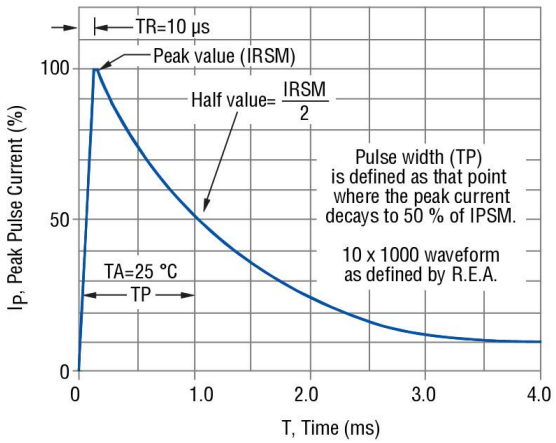


Figure 4 - Typical Junction Capacitance

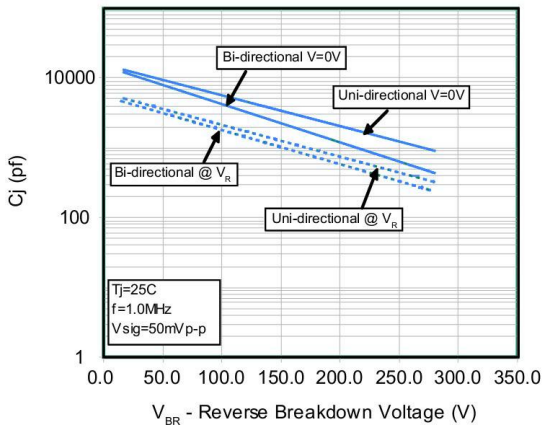


Figure 5 - Pulse Derating Curve

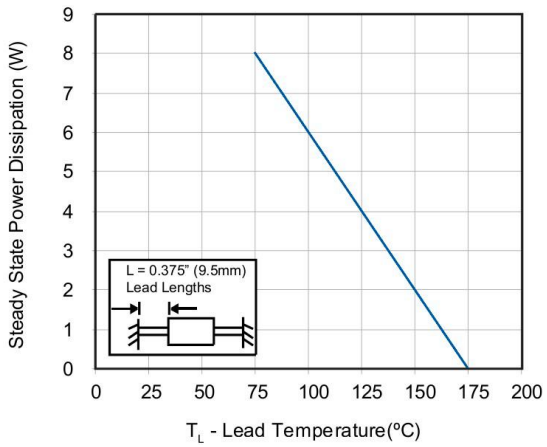
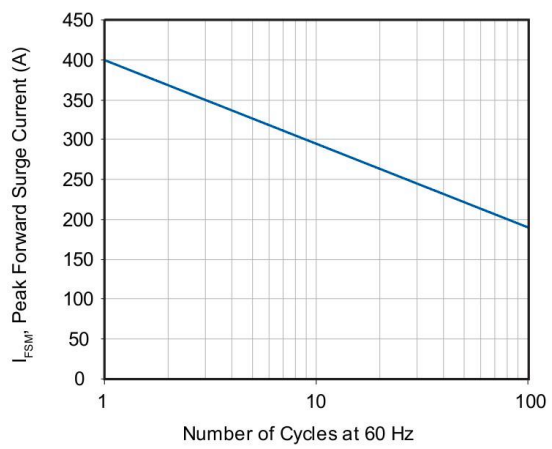
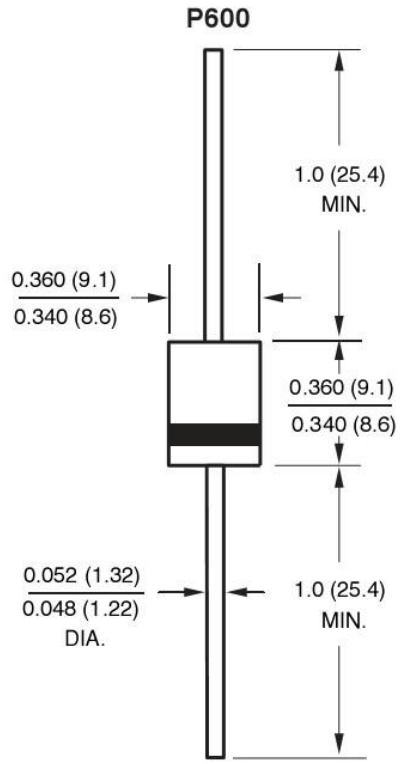


Figure 6 - Maximum Non-Repetitive Surge Current



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.