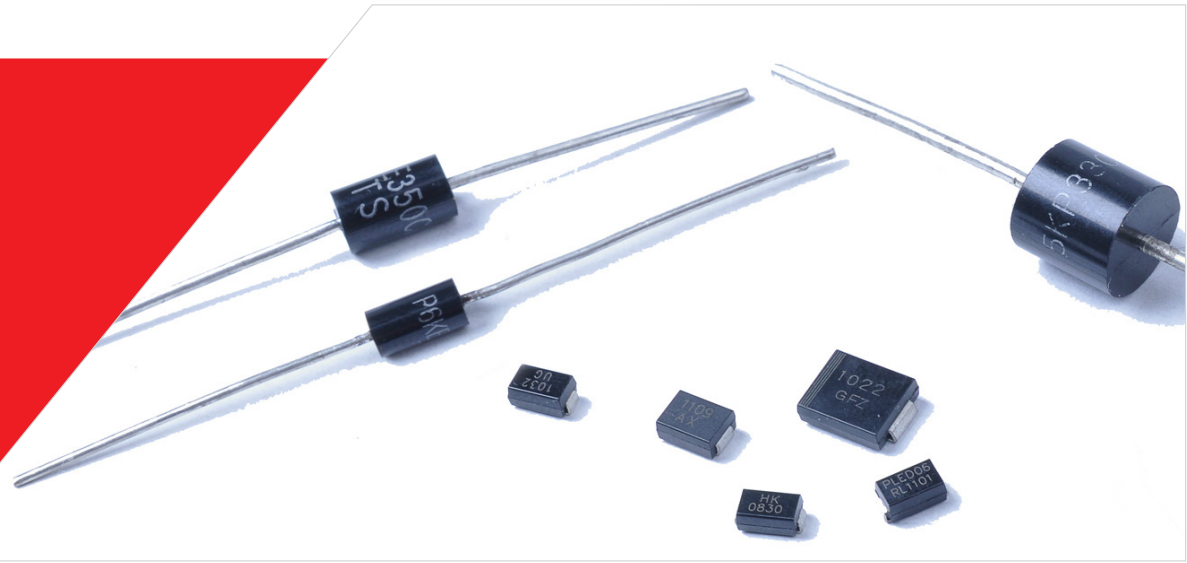
RUILON
ELECTRONICS



Transient Voltage Suppressors

15KPA Series

361° Circuit Protection System

Specifications are subject to change without notice.

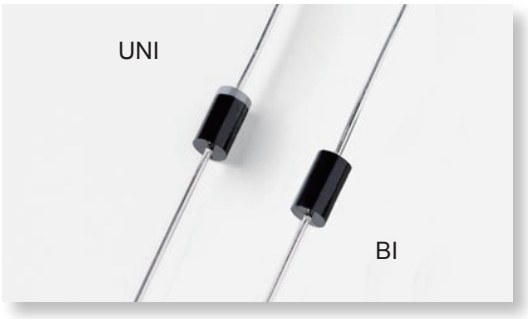
Please refer to http://www.ruilon.com for current information.

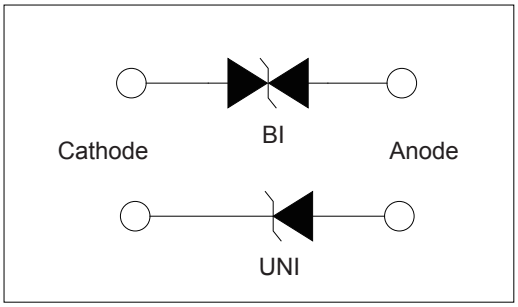
RUILON
ELECTRONICS

Transient Voltage Suppressors - 15KPA Series

Features

1. Halogen-free
2. Rohs compliant
3. Typical maximum temperature coefficient
4. ΔV_{BR} =0.1%xV_{BR}@25°C x ΔT
5. Glass passivated Chip junction in P600 package
6. 5000W peak pulse capadility at 10x1000μs waveform,repetition rate (duty cycles):0.01%
7. Fast response time:typically less than 1.0ps from 0 Volts to BV min
8. Excellent clamping capability
9. Low incremental surge resistance
10. Typical IR less than 5μA above 12V
11. High temperature soldering guaranteed: 260°C/40 seconds / 0.375”, \(9.5mm) lead length, 5lbs., (2.3kg)tension
12. Plastic package has underwriters laboratory flammability classification 94v-0





Applications

TVS devices are ideal for the protection of I/O interfaces,VCC bus and other vulnerable circuits used in telecom, computer, industrial and consumer electronic applications.

Mechanical Characteristics

Rating	Symbol	Value	Units
Peak Pulse Power Dissipation by 10x1000μs test waveform (Fig.1)(Note 1)	P_{PPM}	15000	Watts
Steady State Power Dissipation on inifinite heat sink at TL=75°C (Fig. 5)	P_D	8	Watts
Peak Forward Surge Current, 8.3ms Single Half Sine Wave Unidirectional only (Note 2)	I_{FSM}	400	Amps
Maximum Instantaneous Forward Voltage at 25A for Unidirectional only (Note 3)	V_F	3.5/5.0	V
Operating junction and Storage Temperature Range.	T_J, T_{STG}	-55°C to 175°C	°C
Typical Thermal Resistance Junction to Lead	R_{uJL}	8.0	°C/W
Typical Thermal Resistance Junction to Ambient	R_{uJA}	40	°C/W

Notes:
1. Non-repetitive current pulse , per Fig. 3 and derated above T_A = 25°C per Fig. 2.
2. Measured on 8.3ms single half sine wave or equivalent square wave, duty cycle=4 perminute maximum.

RUILON
ELECTRONICS

Transient Voltage Suppressors - 15KPA Series

Electriacl Characteristics

Type Number		Reverse Stand-Off Voltage	Breakdown Voltage @I_T	Test Current	Maximum Clamping Voltage @I_{PP}	Peak Pulse Current	Reverse Leakage @V_{RWM}
(UNI)	(BI)	V_{RWM}(V)	$V_{BR\ MIN.}$(V)	I_T(mA)	V_C(V)	I_{PP}(A)	I_R(μA)
15KPA17A	15KPA17CA	17.0	18.99	50	29.3	515.4	5000
15KPA18A	15KPA18CA	18.0	20.11	50	30.9	488.7	5000
15KPA20A	15KPA20CA	20.0	22.34	20	34.3	440.2	1500
15KPA22A	15KPA22CA	22.0	24.57	10	37.1	407.0	500
15KPA24A	15KPA24CA	24.0	26.81	5	40.7	371.0	150
15KPA26A	15KPA26CA	26.0	29.04	5	44.0	343.2	50
15KPA28A	15KPA28CA	28.0	31.28	5	47.5	317.9	25
15KPA30A	15KPA30CA	30.0	33.51	5	50.7	297.8	15
15KPA33A	15KPA33CA	33.0	36.90	5	54.7	276.1	5
15KPA36A	15KPA36CA	36.0	40.20	5	59.8	252.5	5
15KPA40A	15KPA40CA	40.0	44.70	5	65.8	229.5	5
15KPA43A	15KPA43CA	43.0	48.00	5	69.8	216.3	5
15KPA45A	15KPA45CA	45.0	50.30	5	72.8	207.4	5
15KPA48A	15KPA48CA	48.0	53.60	5	77.7	194.3	5
15KPA51A	15KPA51CA	51.0	57.00	5	82.9	182.1	5
15KPA54A	15KPA54CA	54.0	60.30	5	87.7	172.2	5
15KPA58A	15KPA58CA	58.0	64.80	5	93.8	161.0	5
15KPA60A	15KPA60CA	60.0	67.00	5	97.4	155.0	5
15KPA64A	15KPA64CA	64.0	71.50	5	104.2	144.9	5
15KPA70A	15KPA70CA	70.0	78.20	5	113.6	132.9	5
15KPA75A	15KPA75CA	75.0	83.80	5	122.0	123.8	5
15KPA78A	15KPA78CA	78.0	87.10	5	126.1	119.7	5
15KPA85A	15KPA85CA	85.0	94.90	5	137.6	109.7	5
15KPA90A	15KPA90CA	90.0	100.50	5	145.6	103.7	5
15KPA100A	15KPA100CA	100.0	111.70	5	161.3	93.6	5
15KPA110A	15KPA110CA	110.0	122.90	5	178.6	84.5	5
15KPA120A	15KPA120CA	120.0	134.00	5	192.3	78.5	5
15KPA130A	15KPA130CA	130.0	145.20	5	208.3	72.5	5
15KPA150A	15KPA150CA	150.0	167.60	5	241.9	62.4	5
15KPA160A	15KPA160CA	160.0	178.70	5	258.6	58.4	5
15KPA170A	15KPA170CA	170.0	189.90	5	272.7	55.4	5
15KPA180A	15KPA180CA	180.0	201.10	5	288.5	52.3	5
15KPA200A	15KPA200CA	200.0	223.40	5	319.1	47.3	5
15KPA220A	15KPA220CA	220.0	245.70	5	349.4	43.2	5
15KPA240A	15KPA240CA	240.0	268.10	5	384.6	39.3	5
15KPA260A	15KPA260CA	260.0	290.40	5	416.7	36.2	5
15KPA280A	15KPA280CA	280.0	312.80	5	454.5	33.2	5

Transient Voltage Suppressors - 15KPA Series

Ratings and Characteristic Curves

Figure 1 - Peak Pulse Power Rating Curve

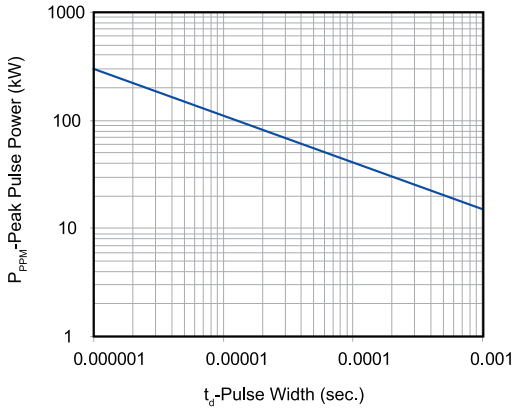


Figure 2 - Pulse Derating Curve

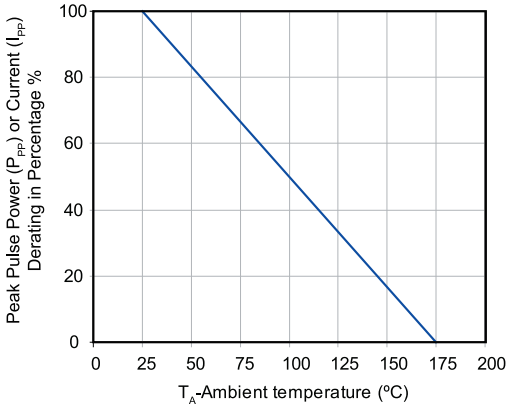


Figure 3 - Pulse Waveform

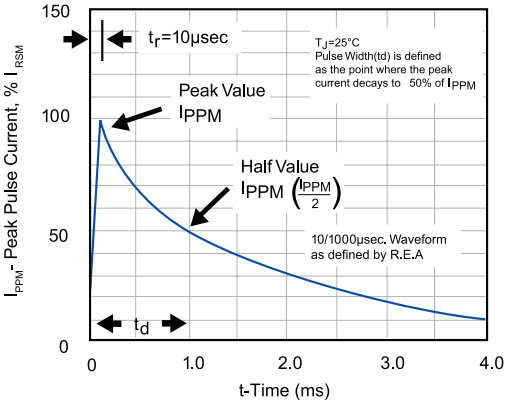


Figure 4 - Typical Junction Capacitance

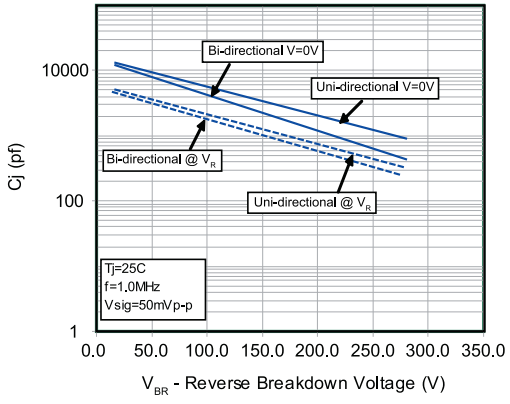


Figure 5 - Steady State Power Derating Curve

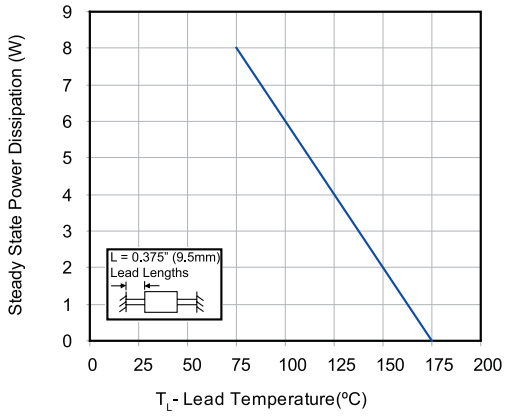
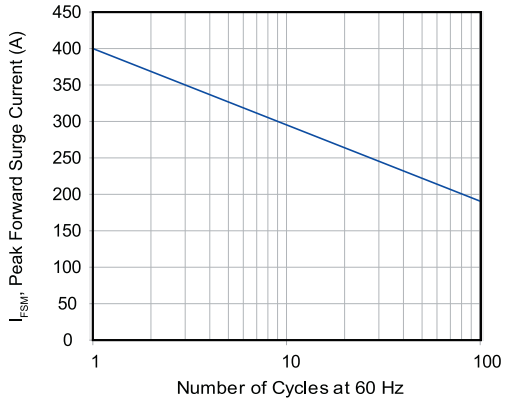


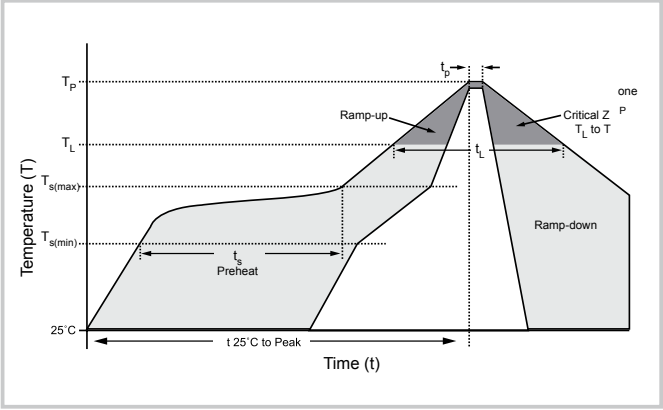
Figure 6 - Maximum Non-Repetitive Peak Forward Surge Current



Transient Voltage Suppressors - 15KPA Series

Soldering Parameters

Feflow Condition		Lead-free assembly
Pre Heat	- Temperature Min ($T_{s(min)}$)	150°C
	- Temperature Max ($T_{s(min)}$)	200°C
	- Time (min to max) (t_s)	60-180 secs
Average ramp up rate (Liquidus Temp (T_L) to peak		3°C/second max
$T_{S(max)}$ to T_L - Ramp-up Rate		3°C/second max
Reflow	- Temperature (T_L) (Liquidus)	217°C
	- Time (min to max) (t_s)	60-150 seconds
Peak Temperature (T_P)		$260^{+0/-5}$ °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 (T_P)		8 minutes Max.
Do not exceed		280°C



Physical Specifications

Weight	0.045oz., 1.2g
Case	JEDEC DO-201 molded plastic body over passivated junction.
Polarity	Color band denotes the cathode except Bipolar.
Termina	Matte Tin axial leads, solderable per JESD22-B102D.

Flow/Wave Soldering

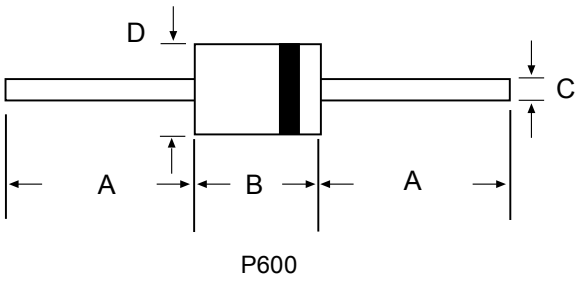
Peak Temperature :	265°C
Dipping Time :	10 seconds
Soldering :	1 time

Environmental Specifications

Temperature Cycle	JESD22-A104
Pressure Cooker	JESD 22-A102
High Temp. Storage	JESD22-A103
HTRB	JESD22-A108
Thermal Shock	JESD22-A106

Transient Voltage Suppressors - 15KPA Series

Dimensions

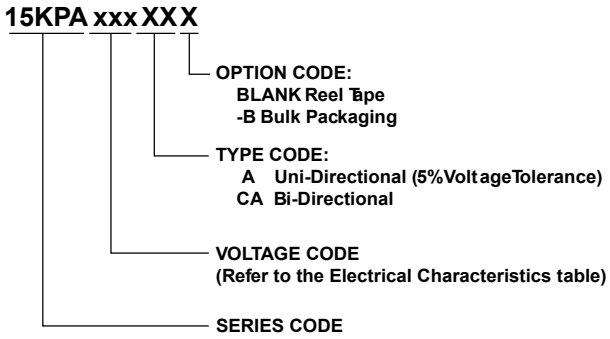


P600

Unit:mm

DIM	Inches		Millimeters	
	Min	Max	Min	Max
A	1.000	-	25.40	-
B	0.340	0.360	8.60	9.10
C	0.048	0.052	1.22	1.32
D	0.340	0.360	8.60	9.10

Part Numbering System



Packaging

Part Number	Component Package	Quantity	Packaging Option	Packaging Specification
15KPAxxxXX	P600	400	Tape & Reel	ELA STD RS-296E
15KPAxxxXX-B	P600	100	BULK	Concord Packing Spec

Warehouse Storage Conditions of Products

- Storage Conditions:

1. Storage Temperature: -10°C~+40°C
2. Relative Humidity:≤75%RH
3. Keep away from corrosive atmosphere and sunlight.

- Period of Storage: 1 year

RuiLongYuan Electronics Co., Ltd.

Tel: +86-755-8290 8296 **Fax: +86-755-8290 8002** **E-mail: jack@ruilon.com**