

**Unidirectional and Bidirectional Transient Voltage Suppressors****Reverse Voltage 6.8 - 400 Volts  
Power Dissipation - 400 Watts****Features**

- low leakage
- Uni and bidirectional unit
- Excellent clamping capability
- Fast response time

**Mechanical Data**

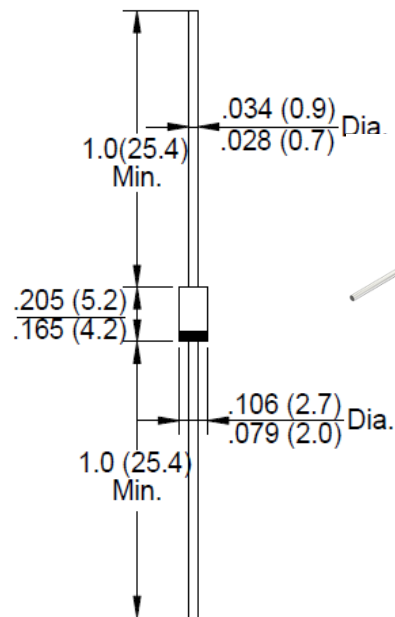
- Case: DO-41 molded plastic

- Polarity: Color band denotes cathode

Note: Products with logo  or  are made by HY Electronic (Cayman) Limited.

**Applications**

- Use in sensitive electronics protection against voltage transients induced by inductive load switching and lighting on ICs, MOSFET.

**DO-41**

Package Outline Dimensions in Inches (Millimeters)

**Maximum Ratings and Electrical Characteristics**

Rating at 25°C ambient temperature unless otherwise specified.

Single phase, half wave, 60Hz, resistive or inductive load.

For capacitive load, derate current by 20%.

Characteristics	Symbol	Value	Unit
Peak Power Dissipation at $T_A=25^\circ\text{C}$ $T_P=1\text{ms}$ (Note 1)	$P_{PK}$	400 (Min)	W
Peak Forward Surge Current, 8.3ms Single Half Sine-Wave, Superimposed on Rated Load (JEDEC Method)	$I_{FSM}$	40	A
Steady State Power Dissipation at $T_L=75^\circ\text{C}$ Lead Lengths 0.375"(9.5mm), See Fig. 6	$P_{M(AV)}$	1	W
Maximum Instantaneous Forward Voltage at 25A for Unidirectional Devices Only (Note 2)	$V_F$	See Note 3	$^\circ\text{C/W}$
Operating Junction Temperature Range	$T_J$	-55 to + 150	$^\circ\text{C}$
Storage Temperature Range	$T_{STG}$	-55 to + 150	$^\circ\text{C}$

Notes: 1. Non-repetitive current pulse, per Fig. 3 and derated above  $T_A=25^\circ\text{C}$  per Fig.

2. 8.3ms single half-wave duty cycle=4 pulses per minutes maximum (uni-directional units only).

3.  $V_F=3.5\text{V}$  on P4KE6.8 thru P4KE200A devices and  $V_F=5.0\text{V}$  on P4KE220A thru P4KE400A devices.



Fig. 1 - Maximum Non-Repetitive Peak Forward Surge Current

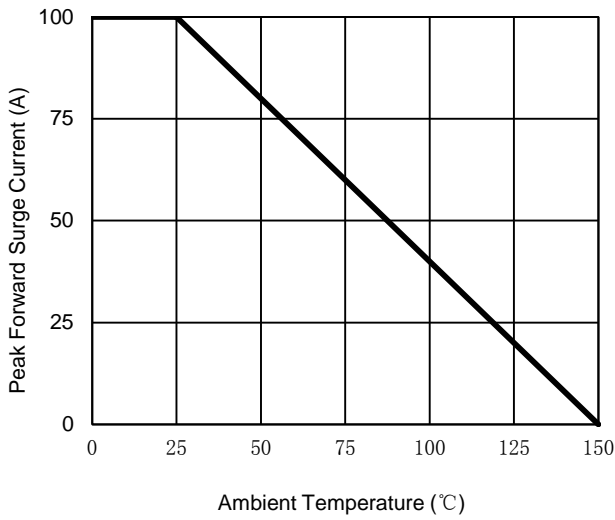


Fig. 2 - Maximum Non-Repetitive Surge Current

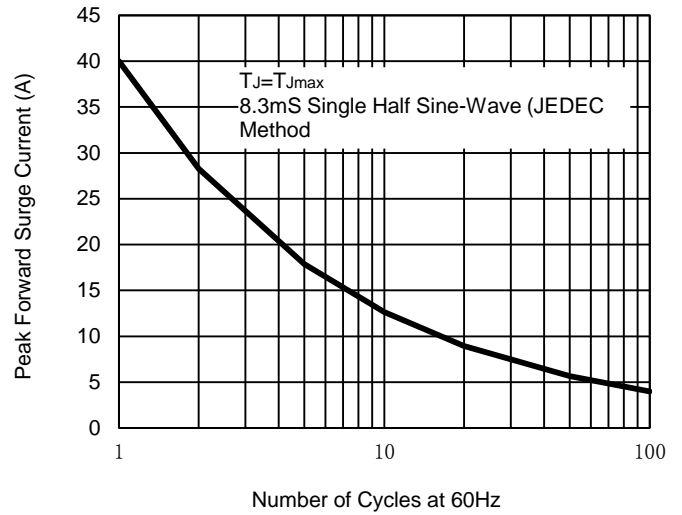


Fig. 3 - Pulse Waveform

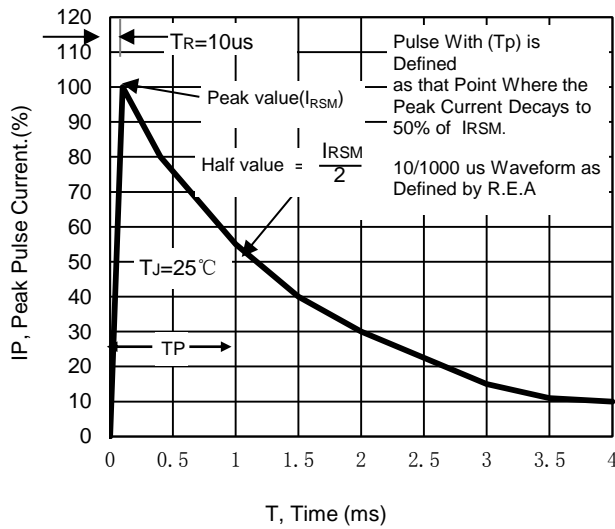


Fig.4- Typical Junction Capacitance

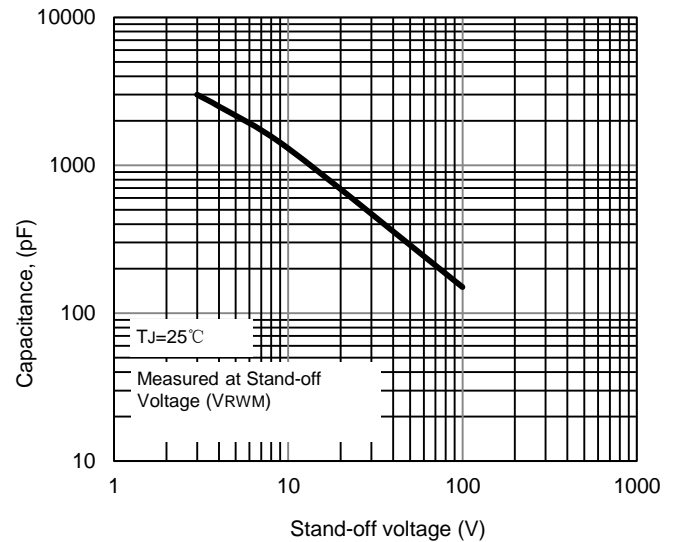


Fig. 5 - Pulse Rating Curve

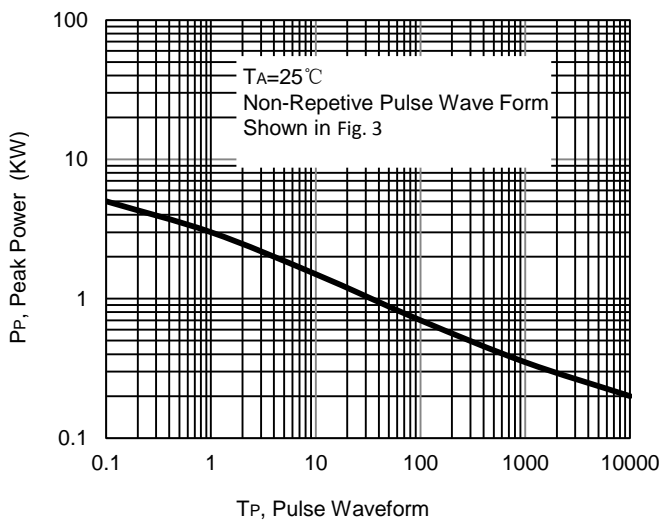
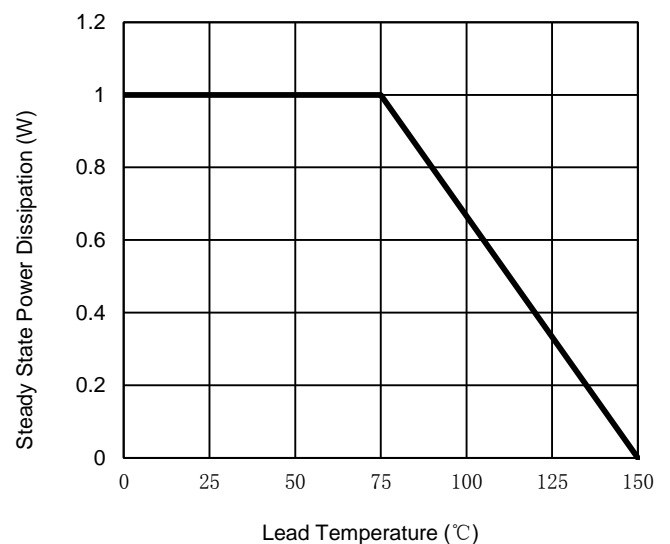


Fig. 6 - Steady State Power Derating Curve



The curve above is for reference only.



# P4KEG SERIES

Device Uni-directional	Device Bi-directional	Reverse Stand off Voltage	Breakdown Voltage at IT2 V(BR) (V)			Maximum Reverse Leakage at VR	Maximum Clamping Voltage at IPPM	Maximum Peak Pulse Surge Current <sup>(3)</sup>	Max. Voltage Temp.
			Min(V)	Max(V)	It(mA)				
(UNI)	(BI)	VR(V)	Min(V)	Max(V)	It(mA)	IR(μA)	Vc(V)	Ipp(A)	mV/°C
P4KEG6.8A	P4KEG6.8CA	5.80	6.45	7.14	10	1000	10.5	40.00	0.057
P4KEG7.5A	P4KEG7.5CA	6.40	7.13	7.88	10	500	11.3	37.00	0.061
P4KEG8.2A	P4KEG8.2CA	7.02	7.79	8.61	10	200	12.1	35.00	0.065
P4KEG9.1A	P4KEG9.1CA	7.78	8.65	9.55	1	50	13.4	31.00	0.068
P4KEG10A	P4KEG10CA	8.55	9.50	10.50	1	10	14.5	29.00	0.073
P4KEG11A	P4KEG11CA	9.40	10.50	11.60	1	5	15.6	27.00	0.076
P4KEG12A	P4KEG12CA	10.20	11.40	12.60	1	5	16.7	25.00	0.078
P4KEG13A	P4KEG13CA	11.10	12.40	13.70	1	5	18.2	23.00	0.081
P4KEG15A	P4KEG15CA	12.80	14.30	15.80	1	5	21.2	20.00	0.084
P4KEG16A	P4KEG16CA	13.60	15.20	16.80	1	5	22.5	19.00	0.086
P4KEG18A	P4KEG18CA	15.30	17.10	18.90	1	5	25.2	17.00	0.088
P4KEG20A	P4KEG20CA	17.10	19.00	21.00	1	5	27.7	15.00	0.090
P4KEG22A	P4KEG22CA	18.80	20.90	23.10	1	5	30.6	14.00	0.092
P4KEG24A	P4KEG24CA	20.50	22.80	25.20	1	5	33.2	13.00	0.094
P4KEG27A	P4KEG27CA	23.10	25.70	28.40	1	5	37.5	11.20	0.096
P4KEG30A	P4KEG30CA	25.60	28.50	31.50	1	5	41.4	10.00	0.097
P4KEG33A	P4KEG33CA	28.20	31.40	34.70	1	5	45.7	9.00	0.098
P4KEG36A	P4KEG36CA	30.80	34.20	37.80	1	5	49.9	8.40	0.099
P4KEG39A	P4KEG39CA	33.30	37.10	41.00	1	5	53.9	7.80	0.100
P4KEG43A	P4KEG43CA	36.80	40.90	45.20	1	5	59.3	7.10	0.101
P4KEG47A	P4KEG47CA	40.20	44.70	49.40	1	5	64.8	6.50	0.101
P4KEG51A	P4KEG51CA	43.60	48.50	53.60	1	5	70.1	6.00	0.102
P4KEG56A	P4KEG56CA	47.80	53.20	58.80	1	5	77.0	5.50	0.103
P4KEG62A	P4KEG62CA	53.0	58.9	65.1	1	5	85.0	5.00	0.104
P4KEG68A	P4KEG68CA	58.1	64.6	71.4	1	5	92.0	4.60	0.104
P4KEG75A	P4KEG75CA	64.7	71.3	78.8	1	5	103.0	4.10	0.105
P4KEG82A	P4KEG82CA	70.1	77.9	86.1	1	5	112.0	3.70	0.105
P4KEG91A	P4KEG91CA	77.8	86.5	95.5	1	5	125.0	3.40	0.106
P4KEG100A	P4KEG100CA	85.5	95.0	105.0	1	5	137.0	3.10	0.106
P4KEG110A	P4KEG110CA	94.0	105.0	116.0	1	5	152.0	2.80	0.107
P4KEG120A	P4KEG120CA	102.0	114.0	126.0	1	5	165.0	2.50	0.107
P4KEG130A	P4KEG130CA	111.0	124.0	137.0	1	5	179.0	2.30	0.107
P4KEG150A	P4KEG150CA	128.0	143.0	158.0	1	5	207.0	2.00	0.108
P4KEG160A	P4KEG160CA	136.0	152.0	168.0	1	5	219.0	2.00	0.108
P4KEG170A	P4KEG170CA	145.0	162.0	179.0	1	5	234.0	1.80	0.108
P4KEG180A	P4KEG180CA	154.0	171.0	189.0	1	5	246.0	1.70	0.108
P4KEG200A	P4KEG200CA	171.0	190.0	210.0	1	5	274.0	1.53	0.108
P4KEG220A	P4KEG220CA	185.0	209.0	231.0	1	5	328.0	1.22	0.108
P4KEG250A	P4KEG250CA	214.0	237.0	263.0	1	5	344.4	1.16	0.110
P4KEG300A	P4KEG300CA	256.0	285.0	315.0	1	5	414.0	0.97	0.110
P4KEG350A	P4KEG350CA	300.0	332.0	368.0	1	5	482.0	0.83	0.110
P4KEG400A	P4KEG400CA	342.0	380.0	420.0	1	5	548.0	0.73	0.110

Notes: 1. Suffix 'C' denotes bidirectional device . Suffix 'A' denotes 5% tolerance device  
 2. For bidirectional devices having VR of 10volts and under ,the IR limit is doubled .



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