400W Transient Voltage Suppressor

Features

DO-41

- Glass passivated junction
- 400W Peak Pulse Power capability on 10/1000μs waveform repetition rate(duty cycle): 0.01%
- Fast response time: typically less than 1.0ps from 0v to V_{BR} for uni-direction and 5.0ns for bi-direction types
- Low incremental surge resistance, excellent clamping capability
- High temperature soldering guaranteed: 265°C/10 seconds, 0.375" (9.5mm) lead length at 5lbs. (2.3kg tension)
- This series is UL recognized under component index. File number E315008
- RoHS Compliant

Mechanical Data

Case:	DO-204AL(DO-41) molded plastic
Epoxy:	Meets UL 94V-0 flammability rating
Terminals:	Plated axial leads, solderable per MIL-STD-750, Method 2026
Polarity:	Cathode indicated by color band except Bi-directional
Weight:	0.012 ounce, 0.3 gram

Maximum Ratings *($T_{Ambient}$=25ºC unless noted otherwise)*

Symbol	Description	Value	Unit	Conditions
V_{WM}	Stand-Off Voltage	6.8 to 440	V	
P_{PPM}	Peak Pulse Power Dissipation on 10/1000μs Waveform(1)	Minimum 400	W	
I_{PPM}	Peak Pulse Current on 10/1000μs Waveform(1)	See Table	A	
I_{FSM}	Peak Forward Surge Current 8.3ms Single Half Sine-wave, Uni-directional only (2)	40	A	
V_F	Maximum Instantaneous Forward Voltage for Uni-directional only	3.5	V	P4KE6.8~P4KE200
		6.5		P4KE220~P4KE440
T_J,T_{STG}	Operating Junction and Storage Temperature Range	-55 to 175	° C	

Notes: (1) Non-repetitive current pulse, per Fig.3 and derated above TA = 25°C per Fig. 2
(2) Mounted on copper pad area of 1.6×1.6" (40×40mm) per Fig. 5.
(3) Measured on 8.3 ms single half sine-wave or equivalent square wave, duty cycle = 4 pulses per minute maximum

Electrical Characteristics *($T_{Ambient}$=25ºC unless noted otherwise)*

P/N (note3)		Stand-Off Voltage	Breakdown Voltage @ Test Current (note1)			Max. Reverse Leakage Current @ V_{WM}	Max. Clamping Voltage @ I_{PPM}	Max. Peak Pulse Current	Max. Temperature coefficient of V BR (%/° C)
			V_{BR}		I_T (mA)				
Uni-Polar	Bi-Polar	V_{WM} (V)	Min.	Max.		I_D (µA) (note2)	V_C (V)	I_{PPM} (A) (note1)	
P4KE6.8A	P4KE6.8CA	5.8	6.45	7.14	10	1000	10.5	38.1	0.057
P4KE7.5A	P4KE7.5CA	6.4	7.13	7.88	10	500	11.3	35.4	0.061
P4KE8.2A	P4KE8.2CA	7.02	7.79	8.61	10	200	12.1	33.1	0.065
P4KE9.1A	P4KE9.1CA	7.78	8.65	9.55	1.0	50	13.4	29.9	0.068
P4KE10A	P4KE10CA	8.55	9.5	10.5	1.0	10	14.5	27.6	0.073
P4KE11A	P4KE11CA	9.40	10.5	11.6	1.0	5.0	15.6	25.6	0.075
P4KE12A	P4KE12CA	10.2	11.4	12.6	1.0	5.0	16.7	24.0	0.078
P4KE13A	P4KE13CA	11.1	12.4	13.7	1.0	1.0	18.2	23	0.081
P4KE15A	P4KE15CA	12.8	14.3	15.8	1.0	1.0	21.2	20	0.084
P4KE16A	P4KE16CA	13.6	15.2	16.8	1.0	1.0	22.5	19	0.086
P4KE18A	P4KE18CA	15.3	17.1	18.9	1.0	1.0	25.5	17	0.088
P4KE20A	P4KE20CA	17.1	19.0	21.0	1.0	1.0	27.7	15	0.090
P4KE22A	P4KE22CA	18.8	20.9	23.1	1.0	1.0	30.6	14	0.092
P4KE24A	P4KE24CA	20.5	22.8	25.2	1.0	1.0	33.2	13	0.094
P4KE27A	P4KE27CA	23.1	25.7	28.4	1.0	1.0	37.5	11.2	0.096
P4KE30A	P4KE30CA	25.6	28.5	31.5	1.0	1.0	41.4	10	0.097
P4KE33A	P4KE33CA	28.2	31.4	34.7	1.0	1.0	45.7	9	0.098
P4KE36A	P4KE36CA	30.8	34.2	37.8	1.0	1.0	49.9	8.4	0.099
P4KE39A	P4KE39CA	33.3	37.1	41.0	1.0	1.0	53.9	7.8	0.100
P4KE43A	P4KE43CA	36.8	40.9	45.2	1.0	1.0	59.3	7.1	0.101
P4KE47A	P4KE47CA	40.2	44.7	49.4	1.0	1.0	64.8	6.5	0.101
P4KE51A	P4KE51CA	43.6	48.5	53.6	1.0	1.0	70.1	6.0	0.102

Electrical Characteristics *(T Ambient=25ºC unless noted otherwise)*

P/N (note3)		Stand-Off Voltage	Breakdown Voltage @ Test Current (note1)			Max. Reverse Leakage Current @ V WM	Max. Clamping Voltage @ I PPM	Max. Peak Pulse Current	Max. Temperature coefficient of V BR (%/° C)
			V BR		IT (mA)				
Uni-Polar	Bi-Polar	V WM (V)	Min.	Max.		ID (μA) (note2)	VC (V)	IPPM (A) (note1)	
P4KE56A	P4KE56CA	47.8	53.2	58.8	1.0	1.0	77.0	5.5	0.103
P4KE62A	P4KE62CA	53.0	58.9	65.1	1.0	1.0	85.0	5.0	0.104
P4KE68A	P4KE68CA	58.1	64.6	71.4	1.0	1.0	92.0	4.6	0.104
P4KE75A	P4KE75CA	64.1	71.3	78.8	1.0	1.0	103	4.1	0.105
P4KE82A	P4KE82CA	70.1	77.9	86.1	1.0	1.0	113	3.7	0.105
P4KE91A	P4KE91CA	77.8	86.5	95.5	1.0	1.0	125	3.4	0.106
P4KE100A	P4KE100CA	85.5	95.0	105.0	1.0	1.0	137	3.1	0.106
P4KE110A	P4KE110CA	94.0	105.0	116.0	1.0	1.0	152	2.8	0.107
P4KE120A	P4KE120CA	102.0	114.0	126.0	1.0	1.0	165	2.5	0.107
P4KE130A	P4KE130CA	111.0	124.0	137.0	1.0	1.0	179	2.3	0.107
P4KE150A	P4KE150CA	128.0	143.0	158.0	1.0	1.0	207	2.0	0.108
P4KE160A	P4KE160CA	136.0	152.0	168.0	1.0	1.0	219	1.9	0.108
P4KE170A	P4KE170CA	145.0	162.0	179.0	1.0	1.0	234	1.8	0.108
P4KE180A	P4KE180CA	154.0	171.0	189.0	1.0	1.0	246	1.7	0.108
P4KE200A	P4KE200CA	171.0	190.0	210.0	1.0	1.0	274	1.53	0.108
P4KE220A	P4KE220CA	185.0	209.0	231.0	1.0	1.0	328	1.22	0.108
P4KE250A	P4KE250CA	214.0	237.0	263.0	1.0	1.0	344	1.16	0.110
P4KE300A	P4KE300CA	256.0	285.0	315.0	1.0	1.0	414	0.97	0.110
P4KE350A	P4KE350CA	300.0	332.0	368.0	1.0	1.0	482	0.83	0.110
P4KE400A	P4KE400CA	342.0	380.0	420.0	1.0	1.0	548	0.73	0.110
P4KE440A	P4KE440CA	376.0	418.0	462.0	1.0	1.0	602	0.67	0.110

Note: 1. Surge current waveform per Fig. 3 and derated per Fig. 2
2. For Bi-directional types with VWM of 10 volts and less, the ID limit is doubled.
3. C suffix for Bidirectional use, A suffix for 5% tolerance.

Typical Characteristics Curves

Fig.1- Peak Pulse Power Rating Curve

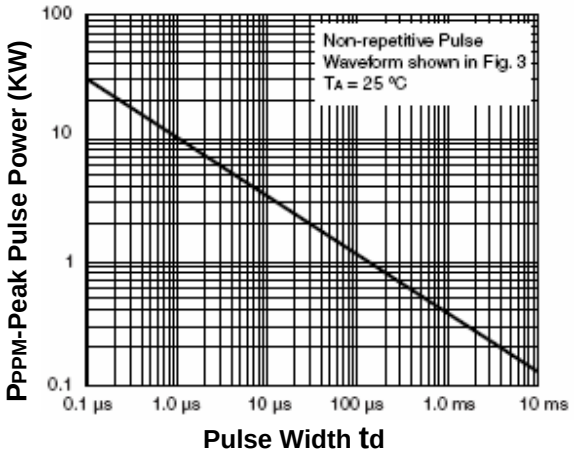


Fig.2- Pulse Derating Curve

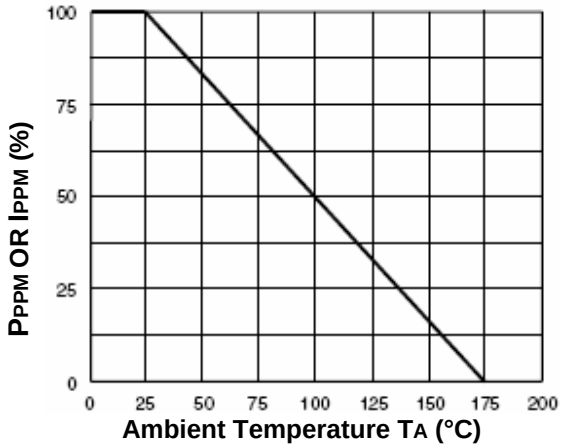


Fig.3- Pulse Waveform

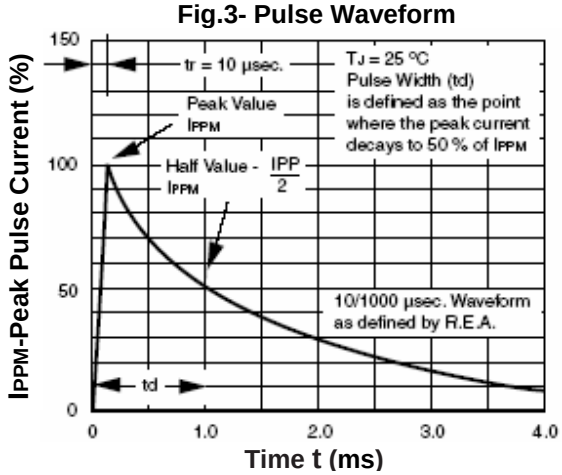


Fig.4- Max. Non-Repetitive Forward Surge Current Uni-directional only

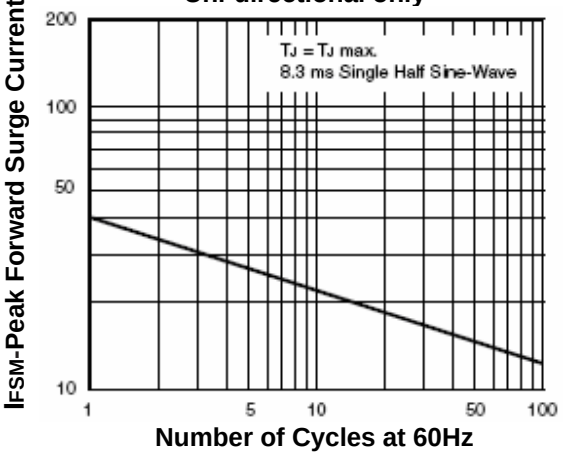
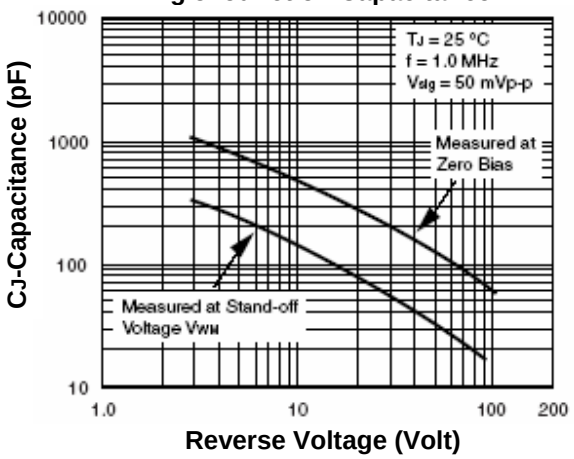
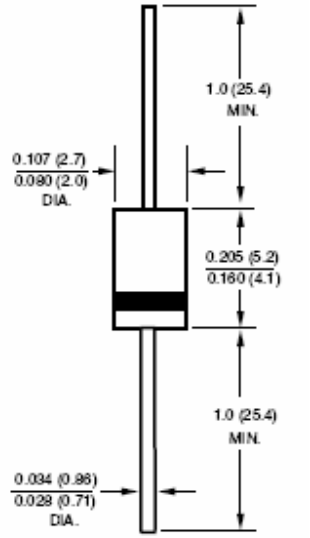


Fig.5- Junction Capacitance



Dimensions in inches (mm)

DO-204AL (DO-41)



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