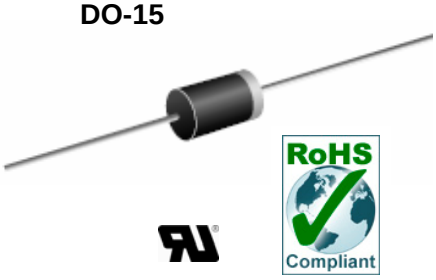
600W Transient Voltage Suppressor

Features

DO-15



- Glass passivated chip junction
- 600W 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 Compliance

Mechanical Data

Case:	DO-204AC (DO-15) 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:	0.015 ounce, 0.4 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 600	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)	100	A	
V_F	Maximum Instantaneous Forward Voltage for Uni-directional only	3.5	V	P6KE6.8~P6KE200
		5.0		P6KE220~P6KE440
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. Clamping Voltage @ I_{PPM}	Max. Peak Pulse Current	Max. Reverse Leakage Current @ V_{WM}	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)	
P6KE6.8A	P6KE6.8CA	5.8	6.45	7.14	10	1000	10.5	57	0.057
P6KE7.5A	P6KE7.5CA	6.4	7.13	7.88	10	500	11.3	53	0.061
P6KE8.2A	P6KE8.2CA	7.02	7.79	8.61	10	200	12.1	50	0.065
P6KE9.1A	P6KE9.1CA	7.78	8.65	9.55	1.0	50	13.4	45	0.068
P6KE10A	P6KE10CA	8.55	9.5	10.5	1.0	10	14.5	41	0.073
P6KE11A	P6KE11CA	9.4	10.5	11.6	1.0	5.0	15.6	38	0.075
P6KE12A	P6KE12CA	10.2	11.4	12.6	1.0	5.0	16.7	36	0.078
P6KE13A	P6KE13CA	11.1	12.4	13.7	1.0	1.0	18.2	33	0.081
P6KE15A	P6KE15CA	12.8	14.3	15.8	1.0	1.0	21.2	28	0.084
P6KE16A	P6KE16CA	13.6	15.2	16.8	1.0	1.0	22.5	27	0.086
P6KE18A	P6KE18CA	15.3	17.1	18.9	1.0	1.0	25.2	24	0.088
P6KE20A	P6KE20CA	17.1	19.0	21.0	1.0	1.0	27.7	22	0.090
P6KE22A	P6KE22CA	18.8	20.9	23.1	1.0	1.0	30.6	20	0.092
P6KE24A	P6KE24CA	20.5	22.8	25.2	1.0	1.0	33.2	18	0.094
P6KE27A	P6KE27CA	23.1	25.7	28.4	1.0	1.0	37.5	16	0.096
P6KE30A	P6KE30CA	25.6	28.5	31.5	1.0	1.0	41.4	14.4	0.097
P6KE33A	P6KE33CA	28.2	31.4	34.7	1.0	1.0	45.7	13.2	0.098
P6KE36A	P6KE36CA	30.8	34.2	37.8	1.0	1.0	49.9	12	0.099
P6KE39A	P6KE39CA	33.3	37.1	41.0	1.0	1.0	53.9	11.2	0.100
P6KE43A	P6KE43CA	36.8	40.9	45.2	1.0	1.0	59.3	10.1	0.101
P6KE47A	P6KE47CA	40.2	44.7	49.4	1.0	1.0	64.8	9.3	0.101
P6KE51A	P6KE51CA	43.6	48.5	53.6	1.0	1.0	70.1	8.6	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}		I_T (mA)				
Uni-Polar	Bi-Polar	V_{WM} (V)	Min.	Max.		I_D (µA) (note2)	V_C (V)	I_{PPM} (A) (note1)	
P6KE56A	P6KE56CA	47.8	53.2	58.8	1.0	1.0	77.0	7.8	0.103
P6KE62A	P6KE62CA	53.0	58.9	65.1	1.0	1.0	85.0	7.1	0.104
P6KE68A	P6KE68CA	58.1	64.6	71.4	1.0	1.0	92.0	6.5	0.104
P6KE75A	P6KE75CA	64.1	71.3	78.8	1.0	1.0	103	5.8	0.105
P6KE82A	P6KE82CA	70.1	77.9	86.1	1.0	1.0	113	5.3	0.105
P6KE91A	P6KE91CA	77.8	86.5	95.5	1.0	1.0	125	4.8	0.106
P6KE100A	P6KE100CA	85.5	95.0	105.0	1.0	1.0	137	4.4	0.106
P6KE110A	P6KE110CA	94.0	105.0	116.0	1.0	1.0	152	4.0	0.107
P6KE120A	P6KE120CA	102.0	114.0	126.0	1.0	1.0	165	3.6	0.107
P6KE130A	P6KE130CA	111.0	124.0	137.0	1.0	1.0	179	3.3	0.107
P6KE150A	P6KE150CA	128.0	143.0	158.0	1.0	1.0	207	2.9	0.108
P6KE160A	P6KE160CA	136.0	152.0	168.0	1.0	1.0	219	2.7	0.108
P6KE170A	P6KE170CA	145.0	162.0	179.0	1.0	1.0	234	2.6	0.108
P6KE180A	P6KE180CA	154.0	171.0	189.0	1.0	1.0	246	2.4	0.108
P6KE200A	P6KE200CA	171.0	190.0	210.0	1.0	1.0	274	2.2	0.108
P6KE220A	P6KE220CA	185.0	209.0	231.0	1.0	1.0	328	1.83	0.108
P6KE250A	P6KE250CA	214.0	237.0	263.0	1.0	1.0	344	1.75	0.110
P6KE300A	P6KE300CA	256.0	285.0	315.0	1.0	1.0	414	1.45	0.110
P6KE350A	P6KE350CA	300.0	332.0	368.0	1.0	1.0	482	1.25	0.110
P6KE400A	P6KE400CA	342.0	380.0	420.0	1.0	1.0	548	1.1	0.110
P6KE440A	P6KE440CA	376.0	418.0	462.0	1.0	1.0	602	1.0	0.110

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

Typical Characteristics Curves

Fig.1- Peak Pulse Power Rating Curve

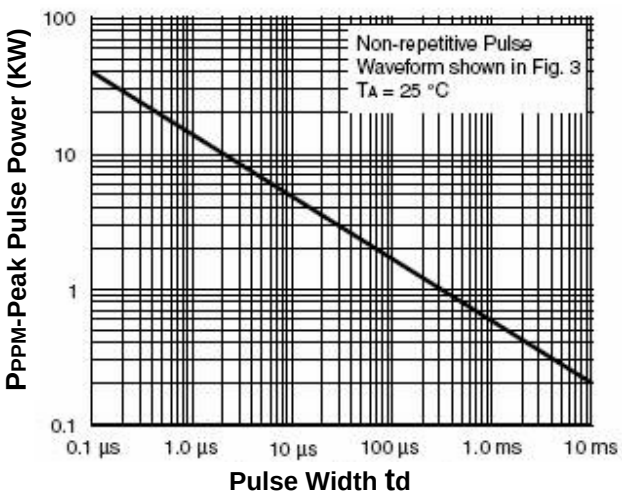


Fig.2- Pulse Derating Curve

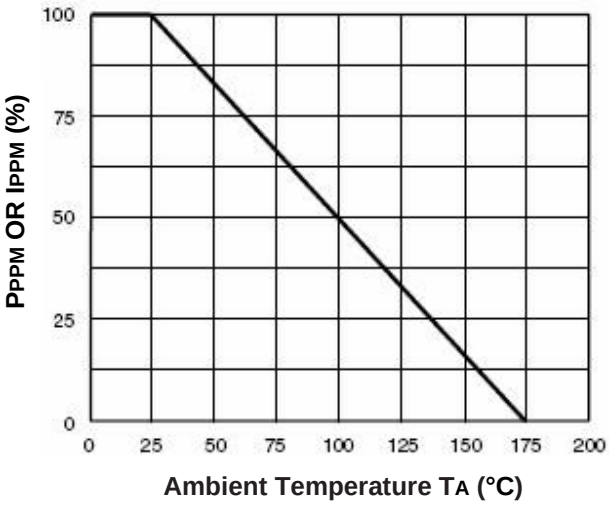


Fig.3- Pulse Waveform

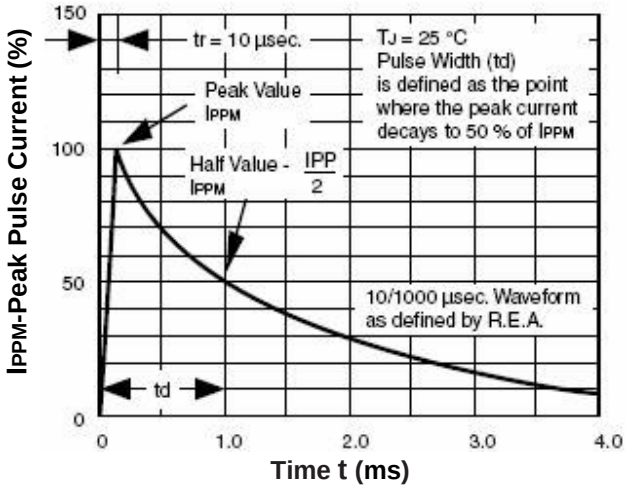


Fig.4- Maximum Non-repetitive Forward Surge Current Unidirectional

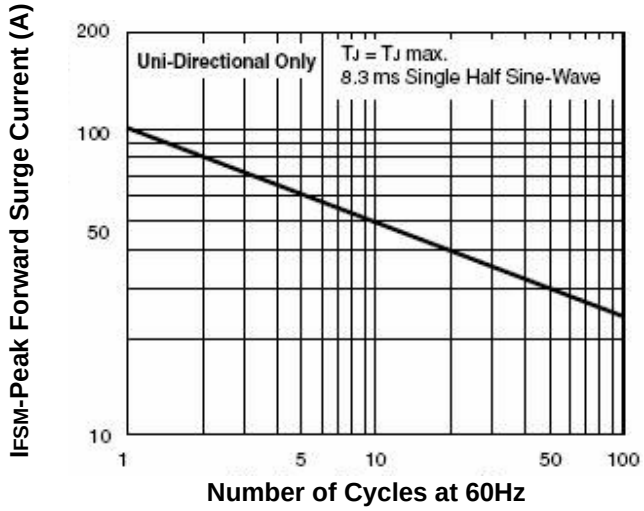
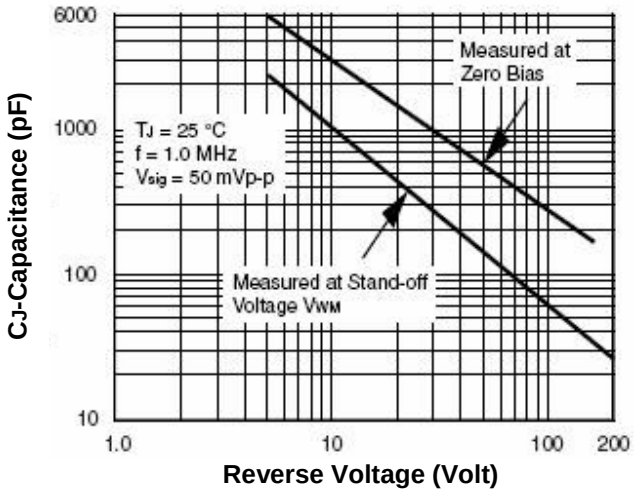
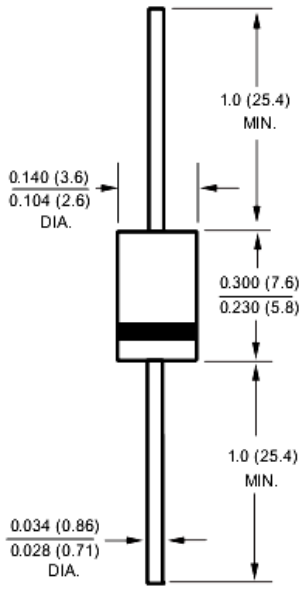


Fig.5- Typical Reverse Leakage Characteristics



Dimensions in Inches (mm)

Case: DO-15



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