P4KExx(C)A-T Series

Reverse Voltage 5.8 ~ 509V

Automotive Transient Voltage Suppressor

PROSEMI offers AEC-Q101 qualified Transient Voltage Suppressor is specially designed to protect sensitive electronic devices from lightning and other transient voltage induced voltage transient events.

Features

- Glass passivated chip
- 400 W peak pulse power capability with a 10/1000us waveform, repetitive rate (duty cycle):0.01%
- Excellent clamping capability
- Low reverse leakage
- Very fast response time
- Lead and body according with RoHS standard

DO-204AL(DO-41)
Axial Leaded

Mechanical Characteristics

- Case: DO-41 Molded plastic
- Lead: Solderable per MIL-STD-750, method 2026
- Epoxy: UL 94V-0 rate flame retardant
- Polarity: Color band denotes cathode end except Bipolar
- Mounting position: Any
- System: Accreditation through IATF16969 System
- High reliability grade(AEC-Q101 qualified)

Maximum Ratings & Characteristics

Ratings at 25℃ ambient temperature unless otherwise specified.

Parameter	Symbol	Value	Units
Peak power dissipation with a 10/1000 us waveform(1)	P_{PP}	400	W
Peak pulse current wih a 10/1000 us waveform(1)	I_{PP}	See Next Table	A
Power dissipation on infinite heatsink at TL = 75 °C	P_D	3.0	W
Peak forward surge current, 8.3 ms single half sinewave unidirectional only(2)	I_{FSM}	40	A
Maximum instantaneous forward voltage at 15 A for unidirectional only(3)	V_F	3.5/6.5	V
Operating junction and storage temperature range	T_J ,T_{STG}	-55 to + 150	℃

1) Non-repetitive current pulse per Fig.5 and derated above TA= 25 °C per Fig.1 ;
2) Measured on 8.3 ms single half sine-wave or equivalent square wave, duty cycle = 4 pulses per minute maximum ;
3) VF<3.5V for devices of VBR<200V and VF<6.5V for devices of VBR>201V。

Electrical Characteristics

Part Number		Reverse Stand off Voltage	Breakdown Voltage		Test Current	Maximum Clamping Voltage	Maximum PeakPulse Current	Maximum Reverse Leakage
		V_{RWM} (V)	V_{BR}(V)@I_T		I_T (mA)	V_c@I_{PP} (V)	I_{pp} (A)	I_R@V_{RWM} (μA)
UNI-POLAR	BI-POLAR		MIN	MAX				
P4KE6.8A-T	P4KE6.8CA-T	5.80	6.45	7.14	10	10.5	39.0	1000
P4KE7.5A-T	P4KE7.5CA-T	6.40	7.13	7.88	10	11.3	36.3	500
P4KE8.2A-T	P4KE8.2CA-T	7.00	7.79	8.61	10	12.1	33.9	200
P4KE9.1A -T	P4KE9.1CA-T	7.80	8.65	9.55	1	13.4	30.6	50
P4KE10A -T	P4KE10CA-T	8.60	9.50	10.50	1	14.5	28.3	10
P4KE11A-T	P4KE11CA-T	9.40	10.50	11.60	1	15.6	26.3	5
P4KE12A-T	P4KE12CA-T	10.20	11.40	12.60	1	16.7	24.6	5
P4KE13A-T	P4KE13CA-T	11.10	12.40	13.70	1	18.2	22.5	1
P4KE15A-T	P4KE15CA-T	12.80	14.30	15.80	1	21.2	19.3	1
P4KE16A-T	P4KE16CA-T	13.60	15.20	16.80	1	22.5	18.2	1
P4KE18A-T	P4KE18CA-T	15.30	17.10	18.90	1	25.5	16.1	1
P4KE20A-T	P4KE20CA-T	17.10	19.00	21.00	1	27.7	14.8	1
P4KE22A-T	P4KE22CA-T	18.80	20.90	23.10	1	30.6	13.4	1
P4KE24A-T	P4KE24CA-T	20.50	22.80	25.20	1	33.2	12.3	1
P4KE27A-T	P4KE27CA-T	23.10	25.70	28.40	1	37.5	10.9	1
P4KE30A-T	P4KE30CA-T	25.60	28.50	31.50	1	41.4	9.9	1
P4KE33A-T	P4KE33CA-T	28.20	31.40	34.70	1	45.7	9.0	1
P4KE36A-T	P4KE36CA-T	30.80	34.20	37.80	1	49.9	8.2	1
P4KE39A-T	P4KE39CA-T	33.30	37.10	41.00	1	53.9	7.6	1
P4KE43A-T	P4KE43CA-T	36.80	40.90	45.20	1	59.3	6.9	1
P4KE47A-T	P4KE47CA-T	40.20	44.70	49.40	1	64.8	6.3	1
P4KE51A -T	P4KE51CA-T	43.60	48.50	53.60	1	70.1	5.8	1
P4KE56A-T	P4KE56CA-T	47.80	53.20	58.80	1	77.0	5.3	1
P4KE62A-T	P4KE62CA-T	53.00	58.90	65.10	1	85.0	4.8	1
P4KE68A-T	P4KE68CA-T	58.10	64.60	71.40	1	92.0	4.5	1
P4KE75A-T	P4KE75CA-T	64.10	71.30	78.80	1	103.0	4.0	1
P4KE82A-T	P4KE82CA-T	70.10	77.90	86.10	1	113.0	3.6	1
P4KE91A-T	P4KE91CA-T	77.80	86.50	95.50	1	125.0	3.3	1
P4KE100A-T	P4KE100CA-T	85.50	95.00	105.00	1	137.0	3.0	1
P4KE110A-T	P4KE110CA-T	94.00	105.00	116.00	1	152.0	2.7	1
P4KE120A-T	P4KE120CA-T	102.00	114.00	126.00	1	165.0	2.5	1
P4KE130A-T	P4KE130CA-T	111.00	124.00	137.00	1	179.0	2.3	1

Electrical Characteristics (continued)

Part Number		Reverse Stand off Voltage	Breakdown Voltage		Test Current	Maximum Clamping Voltage	Maximum PeakPulse Current	Maximum Reverse Leakage
		V_{RWM} (V)	V_{BR}(V)@I_T		I_T (mA)	V_c@I_{PP} (V)	I_{pp} (A)	I_R@V_{RWM} (μA)
UNI-POLAR	BI-POLAR		MIN	MAX				
P4KE150A-T	P4KE150CA-T	128.00	143.00	158.00	1	207.0	2.0	1
P4KE160A-T	P4KE160CA-T	136.00	152.00	168.00	1	219.0	1.9	1
P4KE170A-T	P4KE170CA-T	145.00	162.00	179.00	1	234.0	1.8	1
P4KE180A-T	P4KE180CA-T	154.00	171.00	189.00	1	246.0	1.7	1
P4KE200A-T	P4KE200CA-T	171.00	190.00	210.00	1	274.0	1.5	1
P4KE220A-T	P4KE220CA-T	185.00	209.00	231.00	1	328.0	1.3	1
P4KE250A-T	P4KE250CA-T	214.00	237.00	263.00	1	344.0	1.2	1
P4KE300A-T	P4KE300CA-T	256.00	285.00	315.00	1	414.0	1.0	1
P4KE350A-T	P4KE350CA-T	300.00	332.00	368.00	1	482.0	0.9	1
P4KE400A-T	P4KE400CA-T	342.00	380.00	420.00	1	548.0	0.8	1
P4KE440A-T	P4KE440CA-T	376.00	418.00	462.00	1	602.0	0.7	1
P4KE480A-T	P4KE480CA-T	408.00	456.00	504.00	1	658.0	0.6	1
P4KE510A-T	P4KE510CA-T	434.00	485.00	535.00	1	698.0	0.6	1
P4KE530A-T	P4KE530CA-T	450.00	503.00	556.00	1	725.0	0.6	1
P4KE540A-T	P4KE540CA-T	459.00	513.00	567.00	1	740.0	0.5	1
P4KE550A-T	P4KE550CA-T	467.00	522.50	577.50	1	760.0	0.5	1
P4KE600A-T	P4KE600CA-T	509.00	570.00	630.00	1	780.0	0.5	1

Ratings and Characteristics Curves (TA=25°C unless otherwise noted)

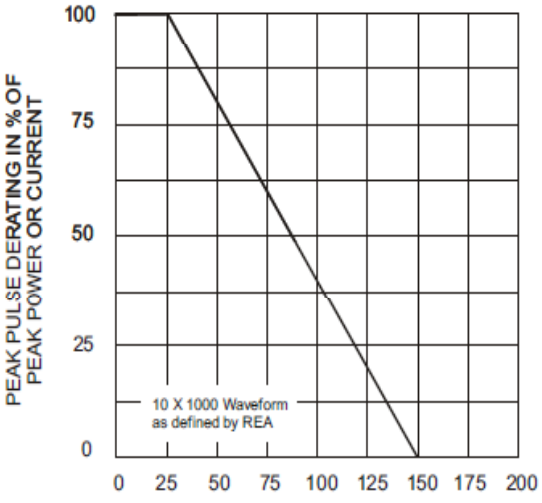


Fig. 1 - Pulse Derating Curve

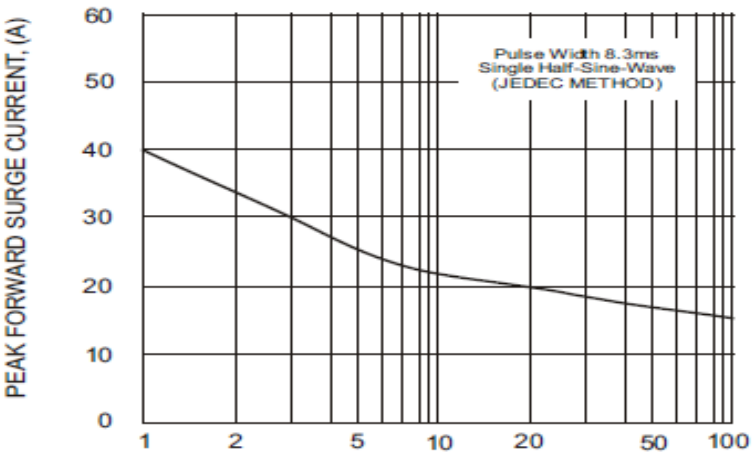


Fig. 2 - Maximum Non-Repetitive Surge Current

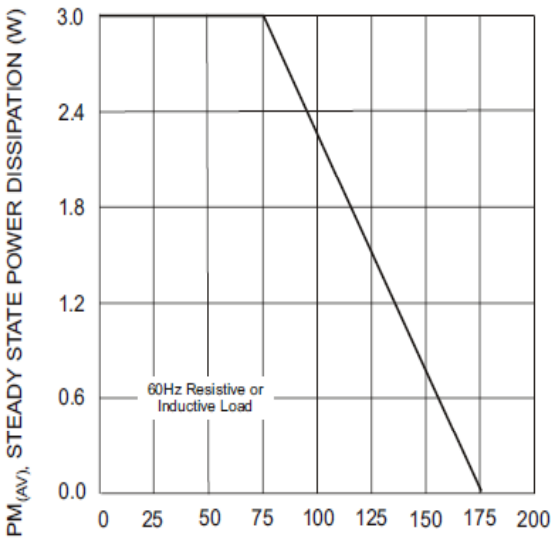


Fig. 3 - Steady State Power Derating Curve

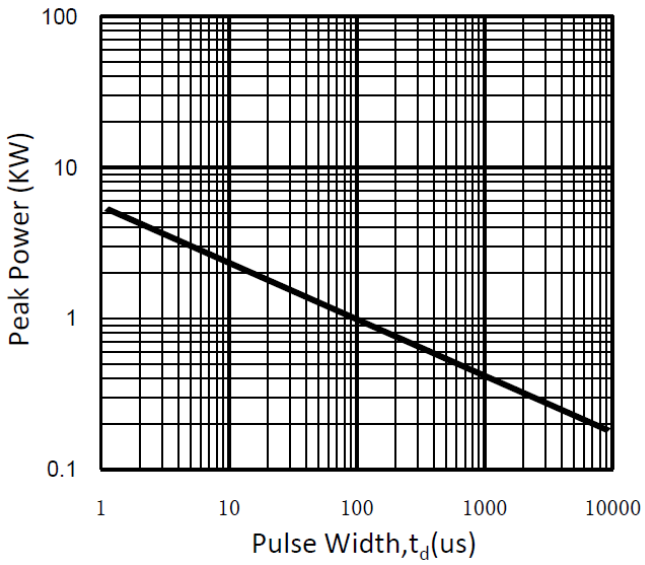


Fig. 4 - Peak Pulse Power Rating Curve

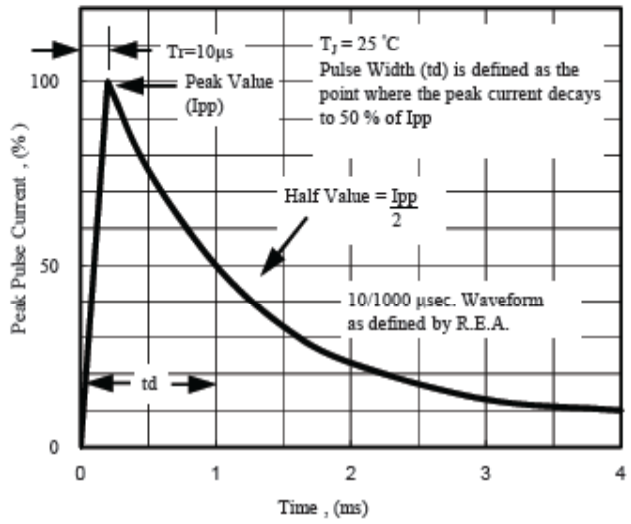


Fig. 5 - Pulse Waveform

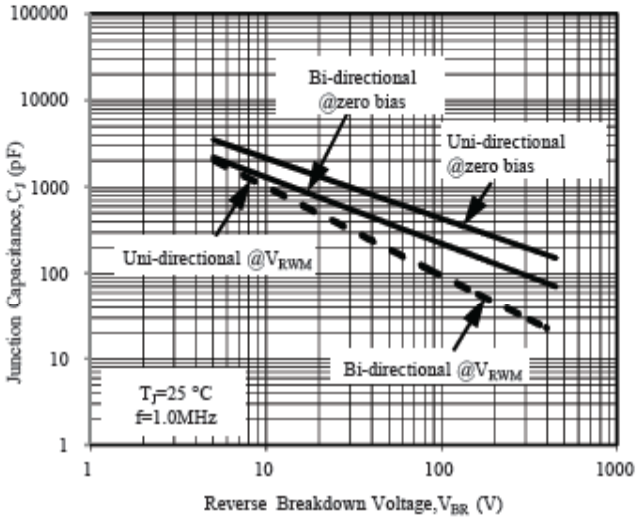
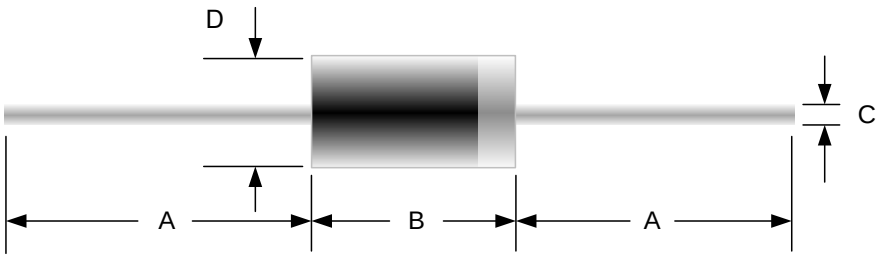


Fig. 6 - Typical Junction Capacitance

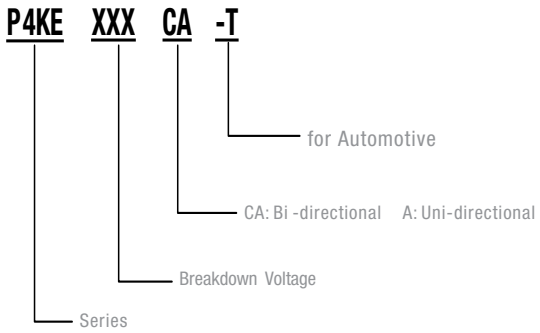
PACKAGE OUTLINE DIMENSION



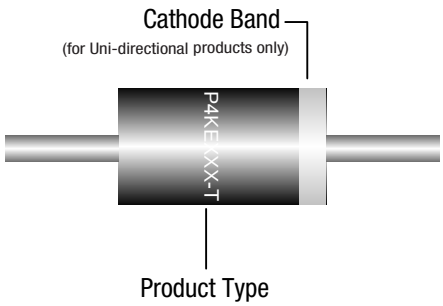
DO-204AL(DO-41)

Ref.（mm）	Inches		Millimeters	
	Min.	Max.	Min.	Max.
A	1.000	-	25.40	-
B	0.166	0.205	4.20	5.20
C	0.028	0.034	0.70	0.90
D	0.080	0.107	2.00	2.70

Part Numbering System



Part Marking System



Package Information

Qty：5,000 /Tape and reel

500 /Bulk