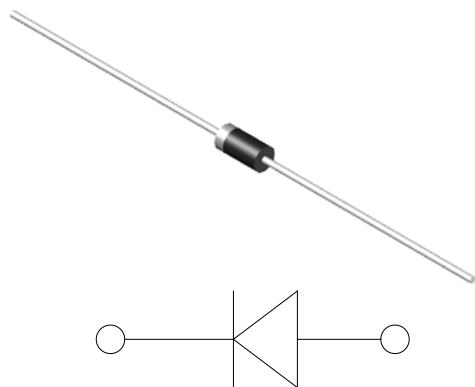


Transient Voltage Suppressor Diodes



Features

- Excellent clamping capability
- Low dynamic impedance
- Solder dip 275 °C max. 7 s, per JESD 22-B106

Mechanical Data

- **Package:** DO-204AL(DO-41)
Molding compound meets UL 94 V-0 flammability rating, RoHS-compliant
- **Terminals:** Tin plated leads, solderable per J-STD-002 and JESD22-B102
- **Polarity:** Color band denotes cathode end

■Maximum Ratings (T_a=25°C Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	Max
Peak power dissipation, with a 10/1000us waveform ⁽¹⁾	P _{PPM}	W	400
Peak pulse current, with a 10/1000us waveform ⁽¹⁾	I _{PPM}	A	See Next Table
Power dissipation, on infinite heat sink at T _L =75°C	P _D	W	1.5
Peak forward surge current, 8.3 ms single half sine-wave unidirectional only ⁽²⁾	I _{FSM}	A	40
Operating junction and storage temperature range	T _J , T _{STG}	°C	-55 to +150

■Electrical Characteristics (T_a=25°C Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	VALUE
Maximum instantaneous forward voltage at 25A for unidirectional only ⁽³⁾	V _{FM}	V	3.5/5.0

■Thermal Characteristics (T_a=25°C Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	Conditions	VALUE
Thermal Resistance(Typical)	R _{θJA}	°C/W	Junction to ambient	100
	R _{θJL}	°C/W	Junction to lead	66

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 pulses per minute maximum.
- (3) VF=3.5V Max for devices of VBR≤220v, and VF=5.0v Max for devices of VBR>220v.

■Ordering Information (Example)

PREFERED P/N	PACKAGE CODE	UNIT WEIGHT(g)	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
P4KE SERIES	D1	Approximate 0.30	5000	5000	50000	Tape
P4KE SERIES	C1	Approximate 0.30	1000	1000	50000	Bulk



P4KE SERIES

■Electrical Characteristics (T_a=25℃ Unless otherwise specified)

Part Number (Uni)	Part Number (Bi)	Breakdown Voltage V _{BR} @I _T			Maximum Reverse Leakage I _R @ V _{WM} (μA)	Working Peak Reverse Voltage V _{RWM} (V)	Maximum Reverse Surge Current I _{PP} (A)	Maximum Clamping Voltage V _c @ I _{PP} (V)
		Min (V)	Max (V)	IT (mA)				
P4KE6.8	P4KE6.8C	6.12	7.48	10	1000	5.5	37.0	10.8
P4KE6.8A	P4KE6.8CA	6.45	7.14	10	1000	5.8	38.1	10.5
P4KE7.5	P4KE7.5C	6.75	8.25	10	500	6.1	34.2	11.7
P4KE7.5A	P4KE7.5CA	7.13	7.88	10	500	6.4	35.4	11.3
P4KE8.2	P4KE8.2C	7.38	9.02	10	200	6.6	32.0	12.5
P4KE8.2A	P4KE8.2CA	7.79	8.61	10	200	7.0	33.1	12.1
P4KE9.1	P4KE9.1C	8.29	10.0	1.0	50	7.4	29.0	13.8
P4KE9.1A	P4KE9.1CA	8.65	9.55	1.0	50	7.8	29.9	13.4
P4KE10	P4KE10C	9.00	11.0	1.0	10	8.1	26.7	15.0
P4KE10A	P4KE10CA	9.50	10.5	1.0	10	8.6	27.6	14.5
P4KE11	P4KE11C	9.90	12.1	1.0	5.0	8.9	24.7	16.2
P4KE11A	P4KE11CA	10.5	11.6	1.0	5.0	9.4	25.6	15.6
P4KE12	P4KE12C	10.8	13.2	1.0	5.0	9.7	23.1	17.3
P4KE12A	P4KE12CA	11.4	12.6	1.0	5.0	10.2	24.0	16.7
P4KE13	P4KE13C	11.7	14.3	1.0	5.0	10.5	21.1	19.0
P4KE13A	P4KE13CA	12.4	13.7	1.0	5.0	11.1	22.0	18.2
P4KE15	P4KE15C	13.5	16.5	1.0	5.0	12.1	18.2	22.0
P4KE15A	P4KE15CA	14.3	15.8	1.0	5.0	12.8	18.9	21.2
P4KE16	P4KE16C	14.4	17.6	1.0	5.0	12.9	17.0	23.5
P4KE16A	P4KE16CA	15.2	16.8	1.0	5.0	13.6	17.8	22.5
P4KE18	P4KE18C	16.2	19.8	1.0	5.0	14.5	15.1	26.5
P4KE18A	P4KE18CA	17.1	18.9	1.0	5.0	15.3	15.9	25.2
P4KE20	P4KE20C	18.0	22.0	1.0	5.0	16.2	13.7	29.1
P4KE20A	P4KE20CA	19.0	21.0	1.0	5.0	17.1	14.4	27.7
P4KE22	P4KE22C	19.8	24.2	1.0	5.0	17.8	12.5	31.9
P4KE22A	P4KE22CA	20.9	23.1	1.0	5.0	18.8	13.1	30.6
P4KE24	P4KE24C	21.6	26.4	1.0	5.0	19.4	11.5	34.7
P4KE24A	P4KE24CA	22.8	25.2	1.0	5.0	20.5	12.0	33.2
P4KE27	P4KE27C	24.3	29.7	1.0	5.0	21.8	10.2	39.1
P4KE27A	P4KE27CA	25.7	28.4	1.0	5.0	23.1	10.7	37.5
P4KE30	P4KE30C	27.0	33.0	1.0	5.0	24.3	9.20	43.5
P4KE30A	P4KE30CA	28.5	31.5	1.0	5.0	25.6	9.70	41.4
P4KE33	P4KE33C	29.7	36.3	1.0	5.0	26.8	8.40	47.7
P4KE33A	P4KE33CA	31.4	34.7	1.0	5.0	28.2	8.80	45.7
P4KE36	P4KE36C	32.4	39.6	1.0	5.0	29.1	7.70	52.0
P4KE36A	P4KE36CA	34.2	37.8	1.0	5.0	30.8	8.00	49.9



P4KE SERIES

■Electrical Characteristics (T_a=25℃ Unless otherwise specified)

Part Number (Uni)	Part Number (Bi)	Breakdown Voltage V _{BR} @I _T			Maximum Reverse Leakage I _R @ V _{WM} (μA)	Working Peak Reverse Voltage V _{RWM} (V)	Maximum Reverse Surge Current IPP (A)	Maximum Clamping Voltage Vc @ I _{PP} (V)
		Min (V)	Max (V)	IT (mA)				
P4KE39	P4KE39C	35.1	42.9	1.0	5.0	31.6	7.10	56.4
P4KE39A	P4KE39CA	37.1	41.0	1.0	5.0	33.3	7.40	53.9
P4KE43	P4KE43C	38.7	47.3	1.0	5.0	34.8	6.50	61.9
P4KE43A	P4KE43CA	40.9	45.2	1.0	5.0	36.8	6.70	59.3
P4KE47	P4KE47C	42.3	51.7	1.0	5.0	38.1	5.90	67.8
P4KE47A	P4KE47CA	44.7	49.4	1.0	5.0	40.2	6.20	64.8
P4KE51	P4KE51C	45.9	56.1	1.0	5.0	41.3	5.40	73.5
P4KE51A	P4KE51CA	48.5	53.6	1.0	5.0	43.6	5.70	70.1
P4KE56	P4KE56C	50.4	61.6	1.0	5.0	45.4	5.00	80.5
P4KE56A	P4KE56CA	53.2	58.8	1.0	5.0	47.8	5.20	77.0
P4KE62	P4KE62C	55.8	68.2	1.0	5.0	50.2	4.50	89.0
P4KE62A	P4KE62CA	58.9	65.1	1.0	5.0	53.0	4.70	85.0
P4KE68	P4KE68C	61.2	74.8	1.0	5.0	55.1	4.10	98.0
P4KE68A	P4KE68CA	64.6	71.4	1.0	5.0	58.1	4.30	92.0
P4KE75	P4KE75C	67.5	82.5	1.0	5.0	60.7	3.70	108.0
P4KE75A	P4KE75CA	71.3	78.8	1.0	5.0	64.1	3.90	103.0
P4KE82	P4KE82C	73.8	90.2	1.0	5.0	66.4	3.40	118.0
P4KE82A	P4KE82CA	77.9	86.1	1.0	5.0	70.1	3.50	113.0
P4KE91	P4KE91C	81.9	100	1.0	5.0	73.3	3.10	131.0
P4KE91A	P4KE91CA	86.5	95.5	1.0	5.0	77.8	3.20	125.0
P4KE100	P4KE100C	90	110	1.0	5.0	81.0	2.80	144.0
P4KE100A	P4KE100CA	95	105	1.0	5.0	85.5	2.90	137.0
P4KE110	P4KE110C	99	121	1.0	5.0	89.2	2.50	158.0
P4KE110A	P4KE110CA	105	116	1.0	5.0	94.0	2.60	152.0
P4KE120	P4KE120C	108	132	1.0	5.0	97.2	2.30	173.0
P4KE120A	P4KE120CA	114	126	1.0	5.0	102.0	2.40	165.0
P4KE130	P4KE130C	117	143	1.0	5.0	105.0	2.10	187.0
P4KE130A	P4KE130CA	124	137	1.0	5.0	111.0	2.30	179.0
P4KE150	P4KE150C	135	165	1.0	5.0	121.0	1.90	215.0
P4KE150A	P4KE150CA	143	158	1.0	5.0	128.0	1.90	207.0
P4KE160	P4KE160C	144	176	1.0	5.0	130.0	1.70	230.0
P4KE160A	P4KE160CA	152	168	1.0	5.0	136.0	1.80	219.0
P4KE170	P4KE170C	153	187	1.0	5.0	138.0	1.60	244.0
P4KE170A	P4KE170CA	162	179	1.0	5.0	145.0	1.70	234.0
P4KE180	P4KE180C	162	198	1.0	5.0	146.0	1.60	258.0
P4KE180A	P4KE180CA	171	189	1.0	5.0	154.0	1.60	246.0



P4KE SERIES

■Electrical Characteristics (T_a=25℃ Unless otherwise specified)

Part Number (Uni)	Part Number (Bi)	Breakdown Voltage V _{BR} @I _T			Maximum Reverse Leakage I _R @ V _{WM} (μA)	Working Peak Reverse Voltage V _{RWM} (V)	Maximum Reverse Surge Current IPP (A)	Maximum Clamping Voltage Vc @ I _{PP} (V)
		Min (V)	Max (V)	IT (mA)				
P4KE200	P4KE200C	180	220	1.0	5.0	162.0	1.40	287.0
P4KE200A	P4KE200CA	190	210	1.0	5.0	171.0	1.50	274.0
P4KE220	P4KE220C	198	242	1.0	5.0	175.0	1.20	344.0
P4KE220A	P4KE220CA	209	231	1.0	5.0	185.0	1.20	328.0
P4KE250	P4KE250C	225	275	1.0	5.0	202.0	1.10	360.0
P4KE250A	P4KE250CA	237	263	1.0	5.0	214.0	1.20	344.0
P4KE300	P4KE300C	270	330	1.0	5.0	243.0	0.93	430.0
P4KE300A	P4KE300CA	285	315	1.0	5.0	256.0	1.00	414.0
P4KE350	P4KE350C	315	385	1.0	5.0	284.0	0.79	505.0
P4KE350A	P4KE350CA	333	368	1.0	5.0	300.0	0.83	482.0
P4KE400	P4KE400C	360	440	1.0	5.0	324.0	0.70	574.0
P4KE400A	P4KE400CA	380	420	1.0	5.0	342.0	0.73	548.0
P4KE440	P4KE440C	396	484	1.0	5.0	356.0	0.63	631.0
P4KE440A	P4KE440CA	418	462	1.0	5.0	376.0	0.66	602.0
P4KE500	P4KE500	450	550	1.0	5.0	406.0	0.56	720.0
P4KE500A	P4KE500CA	475	525	1.0	5.0	427.5	0.58	690.0
P4KE520	P4KE520	468	572	1.0	5.0	422.2	0.53	748.8
P4KE520A	P4KE520CA	494	546	1.0	5.0	444.6	0.56	717.6
P4KE550	P4KE550	495	605	1.0	5.0	446.6	0.51	792.0
P4KE550A	P4KE550CA	523	577	1.0	5.0	470.3	0.53	759.0
P4KE600	P4KE600	540	660	1.0	5.0	487.2	0.46	864.0
P4KE600A	P4KE600CA	570	630	1.0	5.0	513.0	0.48	828.0

Note:

For bi-directional types having VWM of 10 V and less, the I_R limit is doubled



■ Characteristics (Typical)

FIG1: Peak Pulse Power Rating Curve

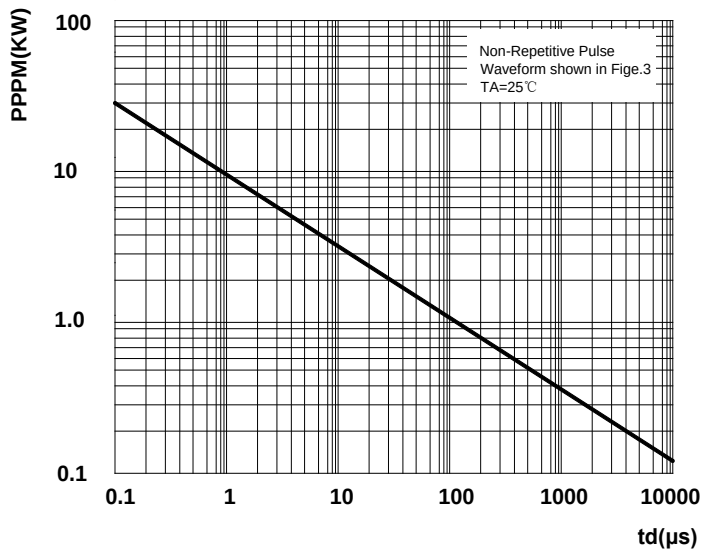


FIG4: Pulse Power or Current vs Initial Junction Temperature

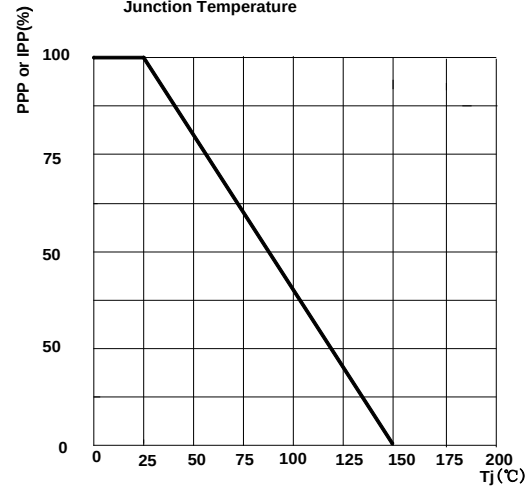


FIG3: Pulse Waveform

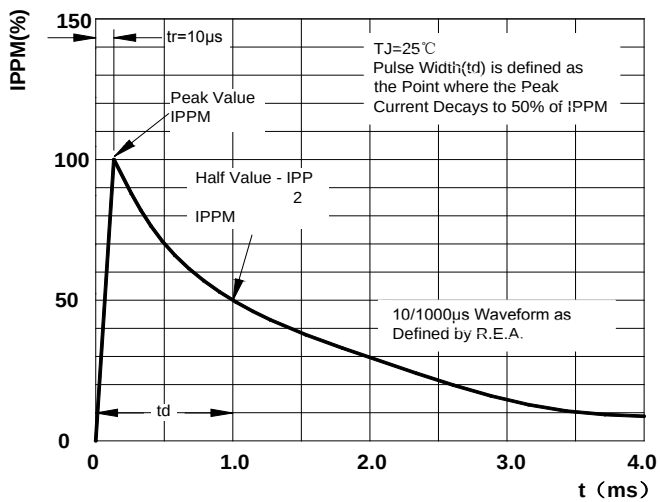


FIG4: Power Derating Curve

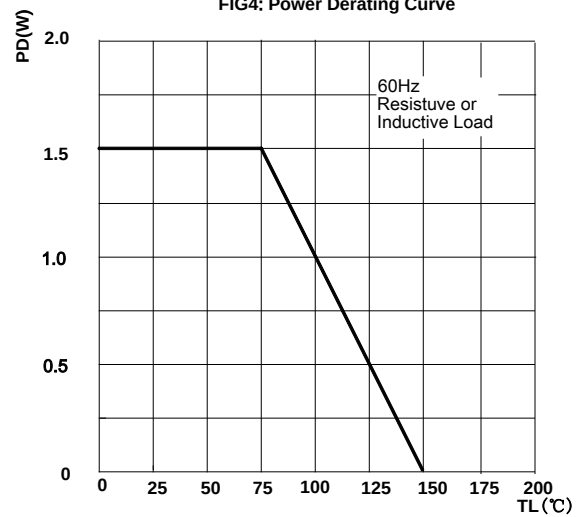


FIG5: Maximum Non-Repetitive Surge Current

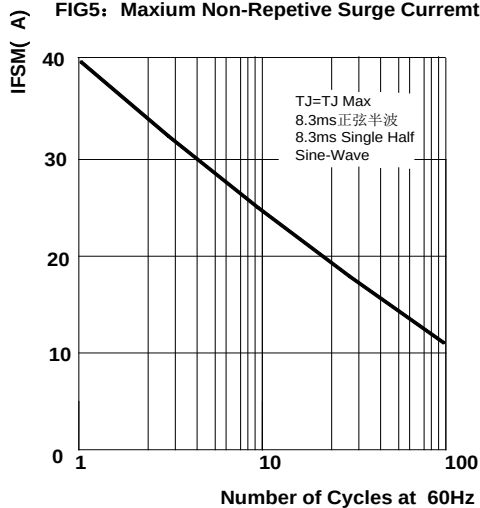
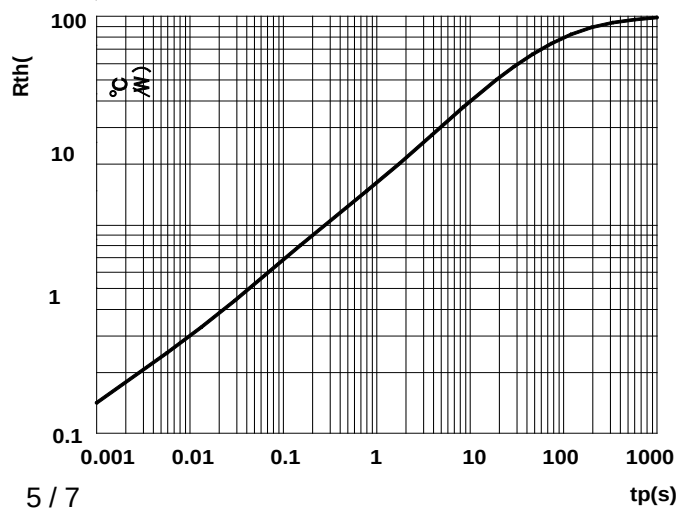
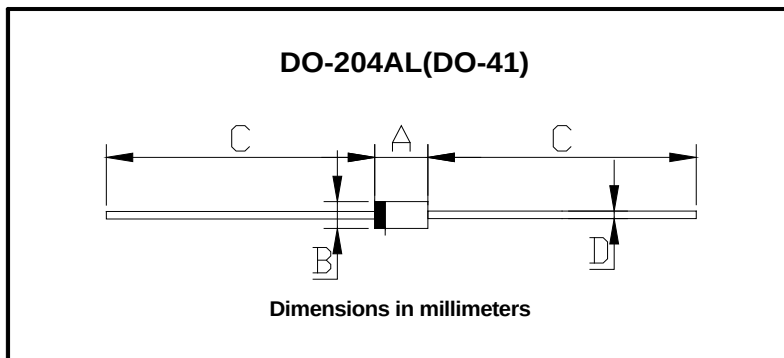


FIG6: Typical Transient Thermal Impedance





■ Outline Dimensions



DO-204AL(DO-41)		
Dim	Min	Max
A	4.22	5.21
B	2.03	2.72
C	25.4	/
D	0.69	0.86



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