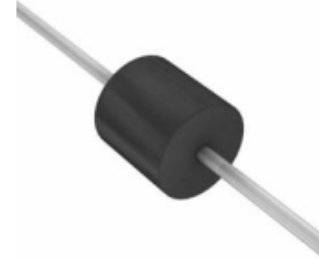


## Features

- Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- Class passivated junction
- 400W peak pulse power capability on 10/1000us Waveform, repetition rate (duty cycle): 0.01%
- Excellent clamping capability
- Low incremental surge resistance
- Very fast response soldering guaranteed: 265°C/10 Seconds, 0.375"(9.5mm) lead length, 5lbs. (2.3kg) tension

EC76P4KE6.8 thru 550



DO-204AL (DO-41)

## Mechanical Data

- Case : JEDEC DO-204AL(DO-41) molded plastic Body over passivated junction
- Terminals: Axial leads, solderable per MIL-STD-750, Method 2026
- Polarity: For unidirectional types the color band denotes the cathode, which is positive with respect to the anode under normal TVS operation
- Mounting Position: Any
- Weight : 0.012oz, 0.3g

## Absolute Maximum Ratings

(Ratings at 25°C ambient temperature unless otherwise specified.)

Parameter	Symbol	Value	Unit
Peak pulse power dissipation with a 10/1000 us waveform <sup>(1,2)</sup> (see Fig. 1)	PPPM	400	W
Peak pulse current with a 10/1000 us waveform <sup>(1)</sup>	IPPM	See Next Table	A
Steady state power dissipation at TL =75°C, lead lengths 0.375" (9.5mm) <sup>(2)</sup>	PM(AV)	1.0	W
Peak forward surge current 8.3ms single half sine-wave uni-directional only <sup>(3)</sup>	IFSM	40	A
Maximum instantaneous forward voltage @ 25A for unidirectional only <sup>(4)</sup>	VF	3.5/5.0	V
Typical thermal resistance, junction to ambient, LLead =10mm	RθJA	100	°C/W
Typical thermal resistance, junction to lead	RθJL	60	°C/W
Operating junction and storage temperature range	TJ,TSTG	-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 1.6 x 1.6" (40 x 40 mm) per Fig. 5.

3. Measured on 8.3ms single half sine-wave or equivalent square wave, duty cycle = 4 pulses per minute maximum

4. VF=3.5 V for devices of V(BR) < 220V, and VF=5.0 Volt max. for devices of V(BR)>220V



## Electrical Characteristics

Device type	Breakdown voltage V (BR) (Volts) <sup>(1)</sup>		Test current at I <sub>T</sub> (mA)	Stand-off voltage V <sub>WM</sub> (Volts)	Maximum reverse leakage at V <sub>WM</sub> I <sub>D</sub> <sup>(3)</sup> (uA)	Maximum peak pulse current I <sub>PPM</sub> <sup>(2)</sup> (A)	Maximum clamping voltage at IPPM V <sub>c</sub> (Volts)	Maximum temperature coefficient of V <sub>BR</sub> (% / °C)
	Min.	Max.						
EC76P4KE6.8	6.12	7.48	10	5.50	1000	37.0	10.8	0.057
EC76P4KE6.8A	6.45	7.14	10	5.80	1000	38.1	10.5	0.057
EC76P4KE7.5	6.75	8.25	10	6.05	500	34.2	11.7	0.062
EC76P4KE7.5A	7.13	7.88	10	6.40	500	35.4	11.3	0.061
EC76P4KE8.2	7.38	9.02	10	6.63	200	32.0	12.5	0.065
EC76P4KE8.2A	7.79	8.61	10	7.02	200	33.1	12.1	0.065
EC76P4KE9.1	8.19	10.0	1.0	7.37	50	29.0	13.8	0.068
EC76P4KE9.1A	8.65	9.55	1.0	7.78	50	29.9	13.4	0.068
EC76P4KE10	9.00	11.0	1.0	8.10	10	26.7	15.0	0.073
EC76P4KE10A	9.50	10.5	1.0	8.55	10	27.6	14.5	0.073
EC76P4KE11	9.90	12.1	1.0	8.92	5.0	24.7	16.2	0.075
EC76P4KE11A	10.5	11.6	1.0	9.40	5.0	25.6	15.6	0.075
EC76P4KE12	10.8	13.2	1.0	9.72	1.0	23.1	17.3	0.076
EC76P4KE12A	11.4	12.6	1.0	10.2	1.0	24.0	16.7	0.078
EC76P4KE13	11.7	14.3	1.0	10.5	1.0	21.1	19.0	0.081
EC76P4KE13A	12.4	13.7	1.0	11.1	1.0	22.0	18.2	0.081
EC76P4KE15	13.5	16.5	1.0	12.1	1.0	18.2	22.0	0.084
EC76P4KE15A	14.3	15.8	1.0	12.8	1.0	18.9	21.2	0.084
EC76P4KE16	14.4	17.6	1.0	12.9	1.0	17.0	23.5	0.086
EC76P4KE16A	15.2	16.8	1.0	13.6	1.0	17.8	22.5	0.086
EC76P4KE18	16.2	19.8	1.0	14.5	1.0	15.1	26.5	0.088
EC76P4KE18A	17.1	18.9	1.0	15.3	1.0	15.9	25.2	0.088
EC76P4KE20	18.0	22.0	1.0	16.2	1.0	13.7	29.1	0.090
EC76P4KE20A	19.0	21.0	1.0	17.1	1.0	14.4	27.7	0.090
EC76P4KE22	19.8	24.2	1.0	17.8	1.0	12.5	31.9	0.092
EC76P4KE22A	20.9	23.1	1.0	18.8	1.0	13.1	30.6	0.092
EC76P4KE24	21.6	26.4	1.0	19.4	1.0	11.5	34.7	0.094
EC76P4KE24A	22.8	25.2	1.0	20.5	1.0	12.0	33.2	0.094
EC76P4KE27	24.3	29.7	1.0	21.8	1.0	10.2	39.1	0.096
EC76P4KE27A	25.7	28.4	1.0	23.1	1.0	10.7	37.5	0.096
EC76P4KE30	27.0	33.0	1.0	24.3	1.0	9.2	43.5	0.097
EC76P4KE30A	28.5	31.5	1.0	25.6	1.0	9.7	41.4	0.097
EC76P4KE33	29.7	36.3	1.0	26.8	1.0	8.4	47.7	0.098
EC76P4KE33A	31.4	34.7	1.0	28.2	1.0	8.8	45.7	0.098
EC76P4KE36	32.4	39.6	1.0	29.1	1.0	7.7	52.0	0.099
EC76P4KE36A	34.2	37.8	1.0	30.8	1.0	8.0	49.9	0.099
EC76P4KE39	35.1	42.9	1.0	31.6	1.0	7.1	56.4	0.100
EC76P4KE39A	37.1	41.0	1.0	33.3	1.0	7.4	53.9	0.100
EC76P4KE43	38.7	47.3	1.0	34.8	1.0	6.5	61.9	0.101
EC76P4KE43A	40.9	45.2	1.0	36.8	1.0	6.7	59.3	0.101
EC76P4KE47	42.3	51.7	1.0	38.1	1.0	5.9	67.8	0.101
EC76P4KE47A	44.7	49.4	1.0	40.2	1.0	6.2	64.8	0.101



Peak Pulse 400W  
Stand-off Voltage 6.8 to 550V

EC76P4KEXXX

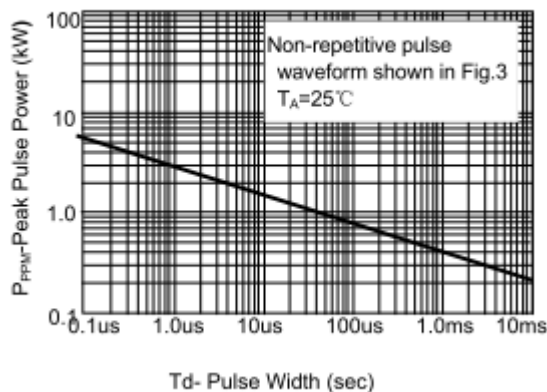
Device type	Breakdown voltage V (BR) (Volts) <sup>(1)</sup>		Test current at I <sub>T</sub> (mA)	Stand-off voltage V <sub>WM</sub> (Volts)	Maximum reverse leakage at V <sub>WM</sub> I <sub>D</sub> <sup>(3)</sup> (uA)	Maximum peak pulse current I <sub>PPM</sub> <sup>(2)</sup> (A)	Maximum clamping voltage at IPPM V <sub>c</sub> (Volts)	Maximum temperature coefficient of V <sub>BR</sub> (% /°C)
	Min.	Max.						
EC76P4KE51	45.9	56.1	1.0	41.3	1.0	5.4	73.5	0.102
EC76P4KE51A	48.5	53.6	1.0	43.6	1.0	5.7	70.1	0.102
EC76P4KE56	50.4	61.6	1.0	45.4	1.0	5.0	80.5	0.103
EC76P4KE56A	53.2	58.8	1.0	47.8	1.0	5.2	77.0	0.103
EC76P4KE62	55.8	68.2	1.0	50.2	1.0	4.5	89.0	0.104
EC76P4KE62A	58.9	65.1	1.0	53.0	1.0	4.7	85.0	0.104
EC76P4KE68	61.2	74.8	1.0	55.1	1.0	4.1	98.0	0.104
EC76P4KE68A	64.6	71.4	1.0	58.1	1.0	4.3	92.0	0.104
EC76P4KE75	67.5	82.5	1.0	60.7	1.0	3.7	108	0.105
EC76P4KE75A	71.3	78.8	1.0	64.1	1.0	3.9	103	0.105
EC76P4KE82	73.8	90.2	1.0	66.4	1.0	3.4	118	0.105
EC76P4KE82A	77.9	86.1	1.0	70.1	1.0	3.5	113	0.105
EC76P4KE91	81.9	100	1.0	73.7	1.0	3.1	131	0.106
EC76P4KE91A	86.5	95.5	1.0	77.8	1.0	3.2	125	0.106
EC76P4KE100	90.0	110	1.0	81.0	1.0	2.8	144	0.106
EC76P4KE100A	95.0	105	1.0	85.5	1.0	2.9	137	0.106
EC76P4KE110	99.0	121	1.0	89.2	1.0	2.5	158	0.107
EC76P4KE110A	105	116	1.0	94.0	1.0	2.6	152	0.107
EC76P4KE120	108	132	1.0	97.2	1.0	2.3	173	0.107
EC76P4KE120A	114	126	1.0	102	1.0	2.4	165	0.107
EC76P4KE130	117	143	1.0	105	1.0	2.1	187	0.107
EC76P4KE130A	124	137	1.0	111	1.0	2.2	179	0.107
EC76P4KE150	135	165	1.0	121	1.0	1.9	215	0.108
EC76P4KE150A	143	158	1.0	128	1.0	1.9	207	0.108
EC76P4KE160	144	176	1.0	130	1.0	1.7	230	0.108
EC76P4KE160A	152	168	1.0	136	1.0	1.8	219	0.108
EC76P4KE170	153	187	1.0	138	1.0	1.6	244	0.108
EC76P4KE170A	162	179	1.0	145	1.0	1.7	234	0.108
EC76P4KE180	162	198	1.0	146	1.0	1.6	258	0.108
EC76P4KE180A	171	189	1.0	154	1.0	1.6	246	0.108
EC76P4KE200	180	220	1.0	162	1.0	1.4	287	0.108
EC76P4KE200A	190	210	1.0	171	1.0	1.5	274	0.108
EC76P4KE220	198	242	1.0	175	1.0	1.2	344	0.108
EC76P4KE220A	209	231	1.0	185	1.0	1.2	328	0.108
EC76P4KE250	225	275	1.0	202	1.0	1.1	360	0.110
EC76P4KE250A	237	263	1.0	214	1.0	1.2	344	0.110
EC76P4KE300	270	330	1.0	243	1.0	0.93	430	0.110
EC76P4KE300A	285	315	1.0	256	1.0	1.0	414	0.110
EC76P4KE350	315	385	1.0	284	1.0	0.79	504	0.110
EC76P4KE350A	333	368	1.0	300	1.0	0.83	482	0.110
EC76P4KE400	360	440	1.0	324	1.0	0.70	574	0.110
EC76P4KE400A	380	420	1.0	342	1.0	0.73	548	0.110

Device type	Breakdown voltage V (BR) (Volts) <sup>(1)</sup>		Test current at I <sub>T</sub> (mA)	Stand-off voltage V <sub>WM</sub> (Volts)	Maximum reverse leakage at V <sub>WM</sub> I <sub>D</sub> <sup>(3)</sup> (uA)	Maximum peak pulse current I <sub>PPM</sub> <sup>(2)</sup> (A)	Maximum clamping voltage at I <sub>PPM</sub> V <sub>c</sub> (Volts)	Maximum temperature coefficient of V <sub>BR</sub> (% / °C)
	Min.	Max.						
EC76P4KE480A	456	504	1.0	408	1.0	0.61	658	0.110
EC76P4KE510A	485	535	1.0	434	1.0	0.57	698	0.110
EC76P4KE530A	503.5	556.5	1.0	450	1.0	0.55	725	0.110
EC76P4KE540A	513	567	1.0	459	1.0	0.54	740	0.110
EC76P4KE550A	522.5	577.5	1.0	467	1.0	0.52	760	0.110
EC76P4KE480A	456	504	1.0	408	1.0	0.61	658	0.110
EC76P4KE510A	485	535	1.0	434	1.0	0.57	698	0.110
EC76P4KE530A	503.5	556.5	1.0	450	1.0	0.55	725	0.110
EC76P4KE540A	513	567	1.0	459	1.0	0.54	740	0.110
EC76P4KE550A	522.5	577.5	1.0	467	1.0	0.52	760	0.110
EC76P4KE480A	456	504	1.0	408	1.0	0.61	658	0.110
EC76P4KE510A	485	535	1.0	434	1.0	0.57	698	0.110
EC76P4KE530A	503.5	556.5	1.0	450	1.0	0.55	725	0.110
EC76P4KE540A	513	567	1.0	459	1.0	0.54	740	0.110
EC76P4KE550A	522.5	577.5	1.0	467	1.0	0.52	760	0.110

- Notes: 1. V(BR) measured after I<sub>T</sub> applied for 300us square wave pulse or equivalent  
 2. Surge current waveform per Fig. 3 and derate per Fig. 2  
 3. For bi-directional types having V<sub>WM</sub> of 10 Volts and less, the I<sub>D</sub> limit is doubled  
 4. All terms and symbols are consistent with ANSI/IEEE C62.35  
 5. For parts without A, the V<sub>BR</sub> is +10%

## Typical Performance Curves

**Fig.1 Peak Pulse Power Rating Curve**



**Fig.2 Maximum Non-Repetitive Surge Current**

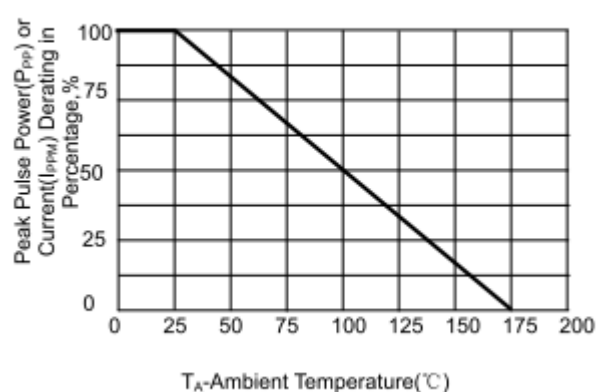


Fig.3 Typical Forward Characteristics

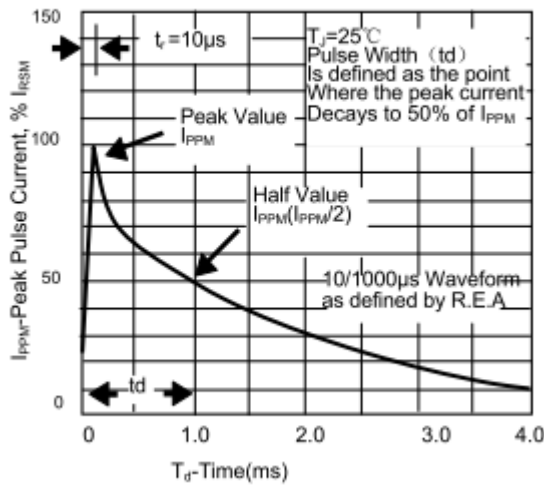


Fig.4 Typ. Junction Capacitance Uni-Directional

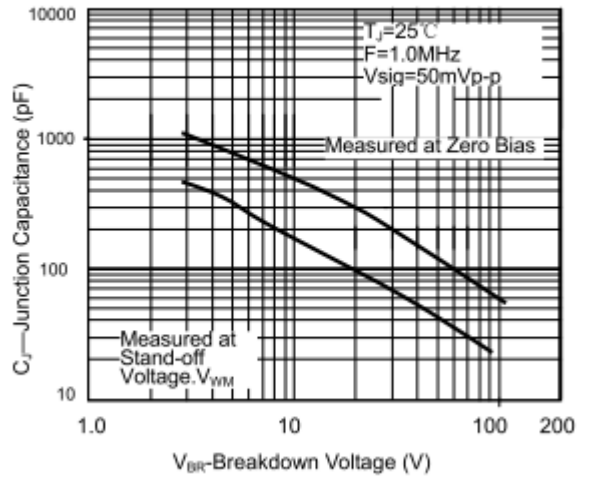


Fig.5 Steady State Power Derating Curve

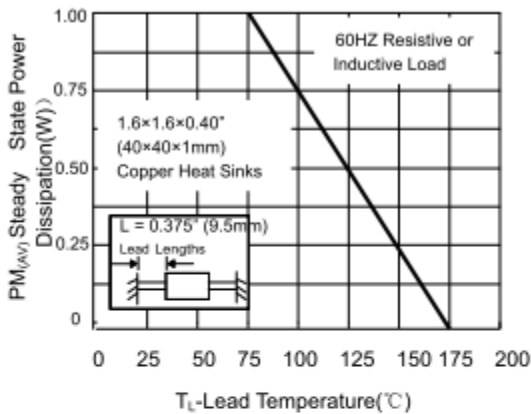


Fig.6 Max. Non-Repetitive Forward Surge Current Uni-Directional Only

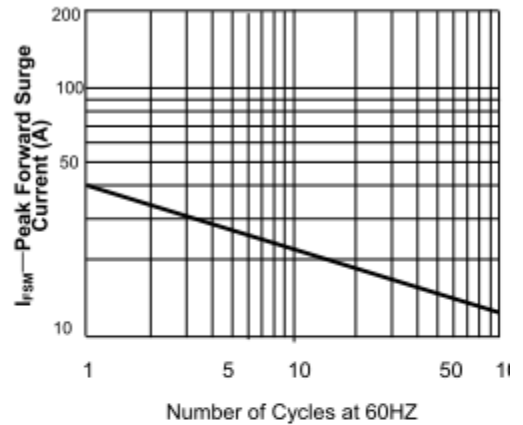


Fig.7 Typical Reverse Leakage Characteristics

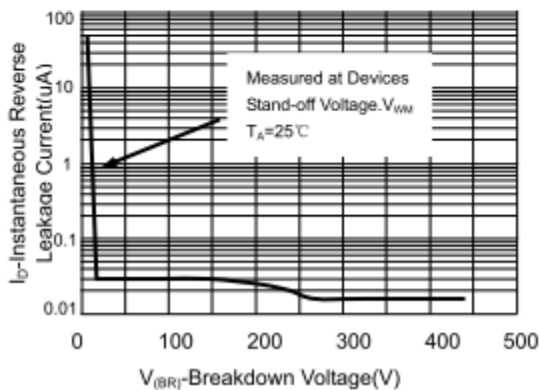
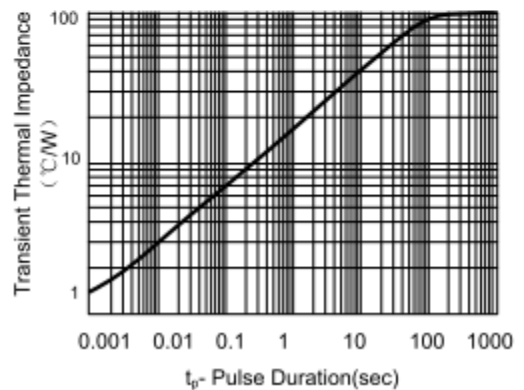


Fig.8 Typ. Transient Thermal Impedance



Order Information

EC76P4KE xxx C A

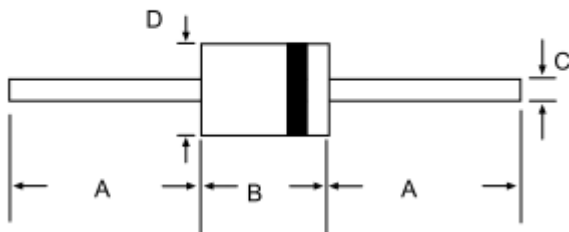
Stand off Voltage

5% Voltage Tolerance (without A, 5% Voltage tolerance)

Bi-directional (without C, Uni-direction)

Device	Package	Net Weight	Carrier	Quantity	HSF Status
EC76P4KEXXXA	DO-204AL(DO-41)	0.300g	Tape & Box	3000pcs/reel	RoHS compliant

Product Dimension



Dimensions	Milimeters	
	Min	Max
A	25.4	-
B	8.6	9.1
C	1.2	1.3
D	8.6	9.1