

DO-41 Plastic-Encapsulate Diodes

Transient Voltage Suppressor Diodes

Features

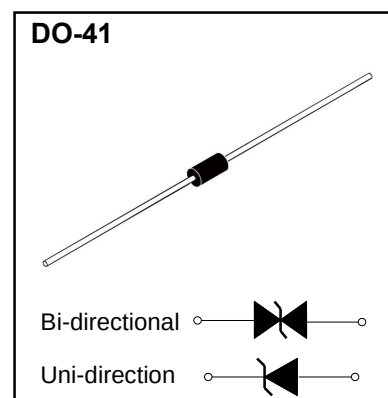
- P_{PPM} 400W
- V_{RWM} 5.8V- 509V
- Low power loss, high efficiency
- Excellent clamping capability

Applications

- Protect sensitive circuit from damage by high voltage transients
- Lighting, ESD transient voltage protection of IC, system
- Inductive switching load protection of IC, system
- Electrical Fast Transient Immunity protection of IC, system

Mechanical Data

- Case: JEDEC DO-41 molded plastic
- Molding compound: UL flammability classification rating 94V-0
- Terminals: Solder plated, solderable per MIL- STD-202, Method 208
- Polarity: Color band denotes cathode end



Limiting Values (Absolute Maximum Rating)

Item	Symbol	Unit	Conditions	Max
Peak pulse power dissipation	P_{PPM}	W	with a 10/1000us waveform	400
Peak pulse current(1)	I_{PPM}	A	with a 10/1000us waveform	See Next Table
Power dissipation	P_D	W	On infinite heat sink at $T_L=75^{\circ}\text{C}$	1.5
Peak forward surge current(2)	I_{FSM}	A	8.3 ms single half sine-wave unidirectional only	40
Operating junction and storage temperature range	T_J, T_{STG}	$^{\circ}\text{C}$		-55 to +150

Electrical Characteristics ($T_A=25^{\circ}\text{C}$ Unless otherwise specified)

Item	Symbol	Unit	Conditions	Max
Maximum instantaneous forward Voltage (3)	V_F	V	at 15A for unidirectional only	3.5/6.5
Thermal resistance	$R_{\theta JL}$	$^{\circ}\text{C}/\text{W}$	Between junction and lead	60
	$R_{\theta JA}$	$^{\circ}\text{C}/\text{W}$	Between junction and Ambient	100
	$R_{\theta JC}$	$^{\circ}\text{C}/\text{W}$	Between junction and Case	20

Notes:

- (1) Non-repetitive current pulse, per Fig. 3 and derated above $T_A=25^{\circ}\text{C}$ per Fig.2.
- (2) Mounted on 0.2 x 0.2" (5.0 x 5.0 mm) copper pads to each terminal
- (3) $V_F < 3.5\text{V}$ for devices of $V_{BR} < 200\text{V}$ and $V_F < 6.5\text{V}$ for devices of $V_{BR} > 201\text{V}$

Electrical Characteristics (T_A=25°C unless otherwise noted)

Part Number		Reverse Stand-off Voltage	Breakdown Voltage V _{BR} @ I _T		Test Current	Max. Clamping Voltage @ I _{PP}	Max. Peak Pulse Current	Max. Reverse Leakage @ V _{RWM}
UNI-POLAR	BI-POLAR	V _{RWM} (V)	Min.(V)	Max.(V)	I _T (mA)	V _{C MAX.} (V)	I _{PP} (A)	I _R (uA)
P4KE6.8A	P4KE6.8CA	5.8	6.45	7.14	10	10.5	39.0	1000
P4KE7.5A	P4KE7.5CA	6.4	7.13	7.88	10	11.3	36.3	500
P4KE8.2A	P4KE8.2CA	7.0	7.79	8.61	10	12.1	33.9	200
P4KE9.1A	P4KE9.1CA	7.8	8.65	9.55	1	13.4	30.6	50
P4KE10A	P4KE10CA	8.6	9.50	10.50	1	14.5	28.3	10
P4KE11A	P4KE11CA	9.4	10.50	11.60	1	15.6	26.3	5
P4KE12A	P4KE12CA	10.2	11.40	12.60	1	16.7	24.6	5
P4KE13A	P4KE13CA	11.1	12.40	13.70	1	18.2	22.5	1
P4KE15A	P4KE15CA	12.8	14.30	15.80	1	21.2	19.3	1
P4KE16A	P4KE16CA	13.6	15.20	16.80	1	22.5	18.2	1
P4KE18A	P4KE18CA	15.3	17.10	18.90	1	25.5	16.1	1
P4KE20A	P4KE20CA	17.1	19.00	21.00	1	27.7	14.8	1
P4KE22A	P4KE22CA	18.8	20.90	23.10	1	30.6	13.4	1
P4KE24A	P4KE24CA	20.5	22.80	25.20	1	33.2	12.3	1
P4KE27A	P4KE27CA	23.1	25.70	28.40	1	37.5	10.9	1
P4KE30A	P4KE30CA	25.6	28.50	31.50	1	41.4	9.9	1
P4KE33A	P4KE33CA	28.2	31.40	34.70	1	45.7	9.0	1
P4KE36A	P4KE36CA	30.8	34.20	37.80	1	49.9	8.2	1
P4KE39A	P4KE39CA	33.3	37.10	41.00	1	53.9	7.6	1
P4KE43A	P4KE43CA	36.8	40.90	45.20	1	59.3	6.9	1
P4KE47A	P4KE47CA	40.2	44.70	49.40	1	64.8	6.3	1
P4KE51A	P4KE51CA	43.6	48.50	53.60	1	70.1	5.8	1
P4KE56A	P4KE56CA	47.8	53.20	58.80	1	77.0	5.3	1
P4KE62A	P4KE62CA	53.0	58.90	65.10	1	85.0	4.8	1
P4KE68A	P4KE68CA	58.1	64.60	71.40	1	92.0	4.5	1
P4KE75A	P4KE75CA	64.1	71.30	78.80	1	103.0	4.0	1
P4KE82A	P4KE82CA	70.1	77.90	86.10	1	113.0	3.6	1
P4KE91A	P4KE91CA	77.8	86.50	95.50	1	125.0	3.3	1
P4KE100A	P4KE100CA	85.5	95.0	105.0	1	137.0	3.0	1
P4KE110A	P4KE110CA	94.0	105.0	116.0	1	152.0	2.7	1
P4KE120A	P4KE120CA	102.0	114.0	126.0	1	165.0	2.5	1
P4KE130A	P4KE130CA	111.0	124.0	137.0	1	179.0	2.3	1
P4KE150A	P4KE150CA	128.0	143.0	158.0	1	207.0	2.0	1
P4KE160A	P4KE160CA	136.0	152.0	168.0	1	219.0	1.9	1
P4KE170A	P4KE170CA	145.0	162.0	179.0	1	234.0	1.8	1
P4KE180A	P4KE180CA	154.0	171.0	189.0	1	246.0	1.7	1
P4KE200A	P4KE200CA	171.0	190.0	210.0	1	274.0	1.5	1
P4KE220A	P4KE220CA	185.0	209.0	231.0	1	328.0	1.3	1
P4KE250A	P4KE250CA	214.0	237.0	263.0	1	344.0	1.2	1
P4KE300A	P4KE300CA	256.0	285.0	315.0	1	414.0	1.0	1
P4KE350A	P4KE350CA	300.0	332.0	368.0	1	482.0	0.9	1
P4KE400A	P4KE400CA	342.0	380.0	420.0	1	548.0	0.8	1
P4KE440A	P4KE440CA	376.0	418.0	462.0	1	602.0	0.7	1
P4KE480A	P4KE480CA	408.0	456.0	504.0	1	658.0	0.6	1
P4KE510A	P4KE510CA	434.0	485.0	535.0	1	698.0	0.6	1
P4KE530A	P4KE530CA	450.0	503.0	556.0	1	725.0	0.6	1
P4KE540A	P4KE540CA	459.0	513.0	567.0	1	740.0	0.5	1
P4KE550A	P4KE550CA	467.0	522.5	577.5	1	760.0	0.5	1
P4KE600A	P4KE600CA	509.0	570.0	630.0	1	780.0	0.5	1

Typical Characteristics

FIG1: Peak Pulse Power Rating Curve

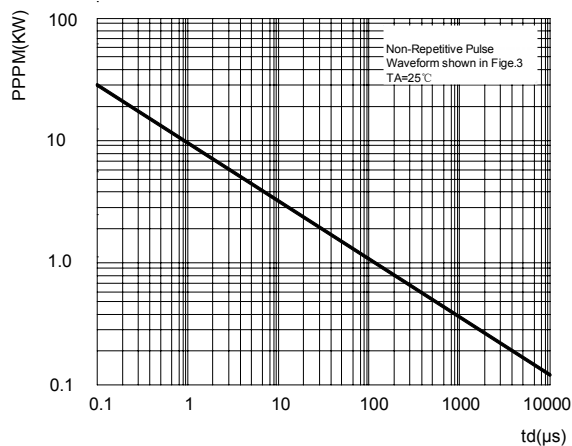


FIG2: Pulse Power or Current vs. Initial Junction Temperature

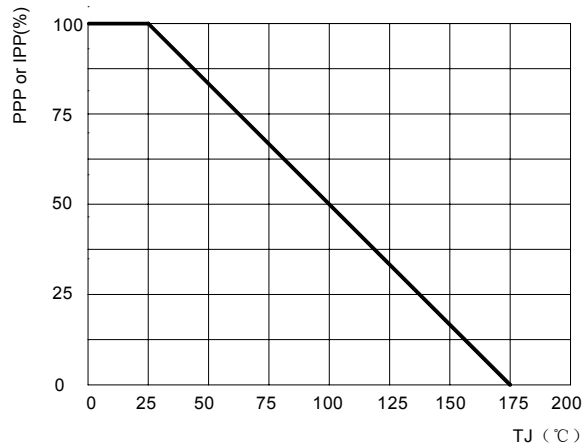


FIG3: Pulse Waveform

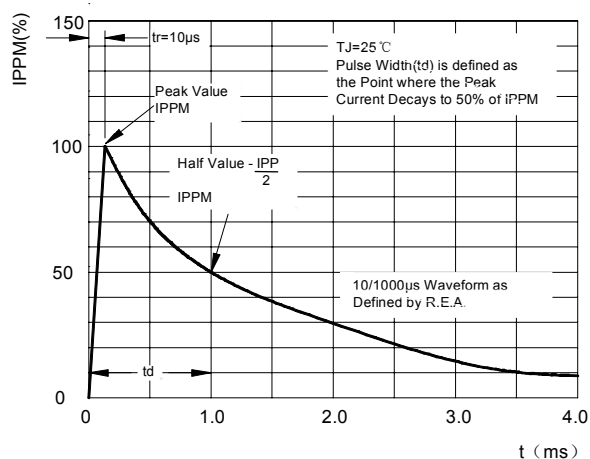


FIG4: Power Derating Curve

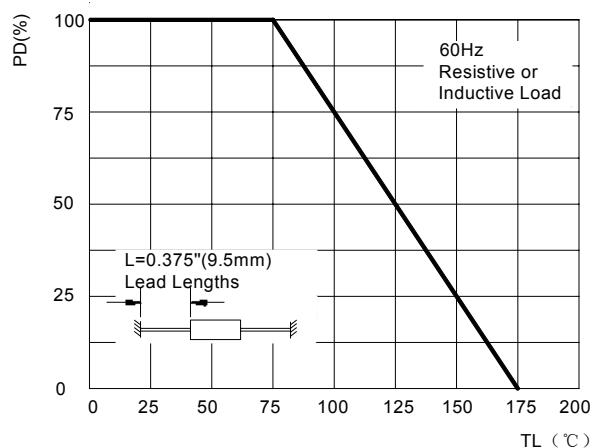


FIG5: Maximum Non-Repetitive Surge Current

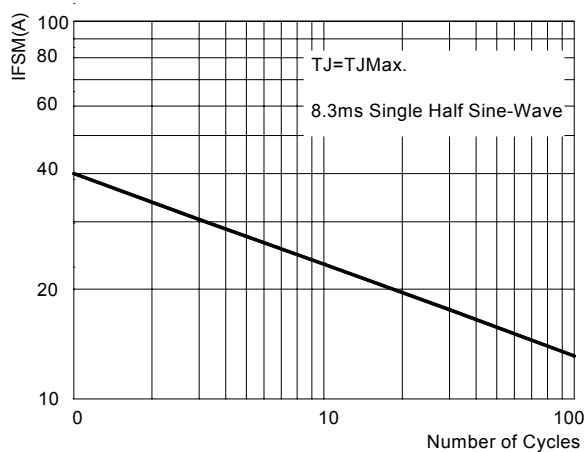
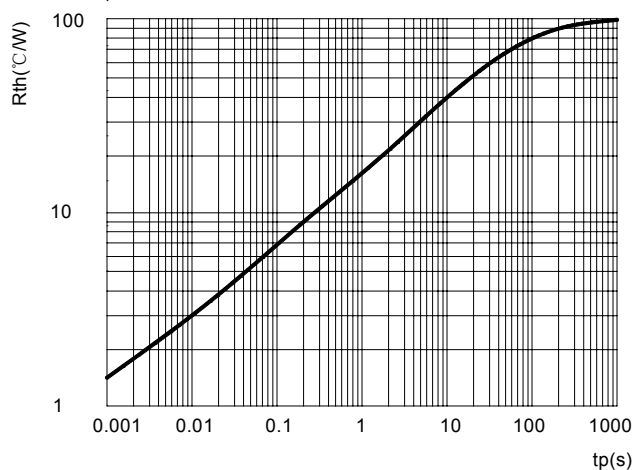
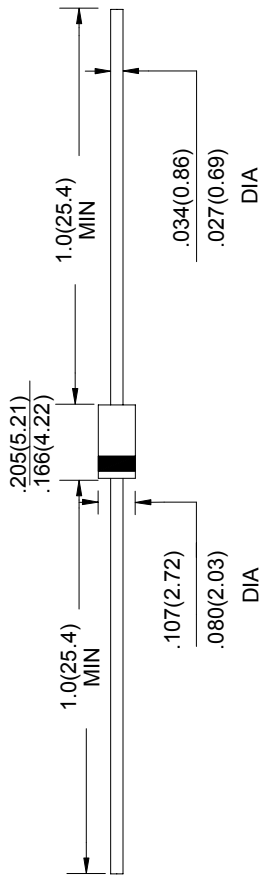


FIG6: Typical Transient Thermal Impedance



DO-41 Package Outline Dimensions



Unit: in inches (millimeters)

Ordering Information

Part Number	Package	Shipping Quantity
P4KE6.8(C)A- P4KE600(C)A	DO-41	5000/Box

Marking Diagram

Uni-direction



Bi-directional

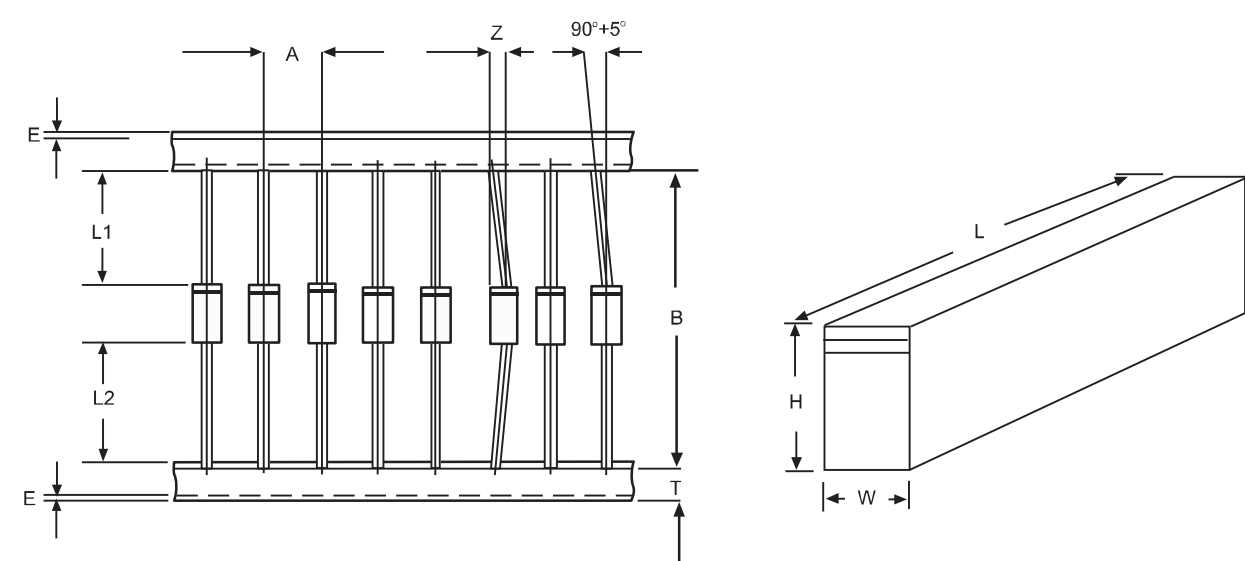


XX: From 6.8 To 600

Ammo Box Packaging Specifications For Axial Lead Rectifiers

Axial lead devices are packed in accordance with EIA standard RS-296-D and specifications given below

COMPONENT OUTLINE	COMPONENT PITCH A	INNER TAPE PITCH B	CUMULATIVE PITCH TOLERANCE
	±0.5mm(.020``)	+0.5mm(.020``)	
R-1	5.0mm	26.0mm	2.0mm/20pitch
R-1	5.0mm	52.4mm	2.0mm/10pitch
A-405	5.0mm	26.0mm	2.0mm/20pitch
A-405	5.0mm	52.4mm	2.0mm/10pitch
DO-34/DO-35	5.0mm	26.0mm	2.0mm/20pitch
DO-34/DO-35	5.0mm	52.4mm	2.0mm/10pitch
DO-41	5.0mm	26.0mm	2.0mm/20pitch
DO-41	5.0mm	52.4mm	2.0mm/10pitch
DO-15	5.0mm	52.4mm	2.0mm/10pitch
DO-27	10.0mm	52.4mm	2.0mm/10pitch
R-6	10.0mm	52.4mm	2.0mm/10pitch



ITEM	SYMBOL	SPECIFICATIONS(mm)	SPECIFICATIONS(inch)
Component alignment	Z	1.2max	0.048max
Tape width	T	6.0±0.4	0.236±0.016
Exposed adhesive	E	0.8max	0.032max
Body eccentricity	IL1-L2I	1.0max	0.040max
Box length	L	255.0±5.0	10.04±0.197
Box width	W	78.0±5.0	3.07±0.197
Box height	H	150.0±5.0	5.91±0.197

NOTE:Each component lead shall be sandwiched between tapes for A minimum of 3.2mm(0.126``)