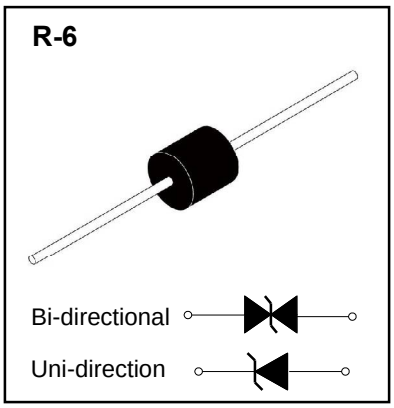
R-6 Plastic-Encapsulate Diodes

Transient Voltage Suppressor Diodes

Features

- P_{PPM} 5000W
- V_{RWM} 5.0V- 440V
- 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

Mechical Data

- Case: JEDEC P-600(R-6) molded plastic
- Molding compound: UL flammability classification rating 94V-0
- Terminals: Axial leads, Solderable per MIL-STD750, Method 2026
- 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	5000
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℃	8.0
Peak forward surge current	I_{FSM}	A	8.3 ms single half sine-wave unidirectional only	500
Operating junction and storage temperature range	T_J,T_{STG}	℃		-55 to +150

Electrical Characteristics（T_a=25℃ Unless otherwise specified）

Item	Symbol	Unit	Conditions	Max
Maximum instantaneous forward Voltage (2)	V_F	V	at 100A for unidirectional only	3.5/5.0
Thermal resistance	$R_{\theta JL}$	℃/W	Between junction and lead	8
	$R_{\theta JA}$	℃/W	Between junction and Ambient	40
	$R_{\theta JC}$	℃/W	Between junction and Case	5

Notes:

(1) Non-repetitive current pulse, per Fig. 3 and derated above T_A= 25℃per Fig.2.

(2) VF<3.5V for devices of VBR<200V and VF<5.0V for devices of VBR>201V

Electrical Characteristics (T_A=25℃ 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)
5KP5.0A	5KP5.0CA	5.0	6.40	7.00	10	9.2	543.5	800
5KP6.0A	5KP6.0CA	6.0	6.67	7.37	10	10.3	485.5	800
5KP6.5A	5KP6.5CA	6.5	7.22	7.98	10	11.2	446.5	500
5KP7.0A	5KP7.0CA	7.0	7.78	8.60	10	12.0	416.7	200
5KP7.5A	5KP7.5CA	7.5	8.33	9.21	1	12.9	387.7	100
5KP8.0A	5KP8.0CA	8.0	8.89	9.83	1	13.6	367.7	50
5KP8.5A	5KP8.5CA	8.5	9.44	10.40	1	14.4	347.2	20
5KP9.0A	5KP9.0CA	9.0	10.00	11.10	1	15.4	324.7	10
5KP10A	5KP10CA	10.0	11.10	12.30	1	17.0	294.2	800
5KP11A	5KP11CA	11.0	12.20	13.50	1	18.2	274.7	800
5KP12A	5KP12CA	12.0	13.30	14.70	1	19.9	251.3	500
5KP13A	5KP13CA	13.0	14.40	15.90	1	21.5	232.5	200
5KP14A	5KP14CA	14.0	15.60	17.20	1	23.2	215.5	100
5KP15A	5KP15CA	15.0	16.70	18.50	1	24.4	205.0	50
5KP16A	5KP16CA	16.0	17.80	19.70	1	26.0	192.3	20
5KP17A	5KP17CA	17.0	18.90	20.90	1	27.6	181.2	10
5KP18A	5KP18CA	18.0	20.00	22.10	1	29.2	171.2	5
5KP20A	5KP20CA	20.0	22.20	24.50	1	32.4	154.3	5
5KP22A	5KP22CA	22.0	24.40	26.90	1	35.5	140.8	5
5KP24A	5KP24CA	24.0	26.70	29.50	1	38.9	128.5	5
5KP26A	5KP26CA	26.0	28.90	31.90	1	42.1	118.8	5
5KP28A	5KP28CA	28.0	31.10	34.40	1	45.4	110.2	5
5KP30A	5KP30CA	30.0	33.50	36.80	1	48.4	103.3	5
5KP33A	5KP33CA	33.0	36.70	40.60	1	53.3	93.8	5
5KP36A	5KP36CA	36.0	40.00	44.20	1	58.1	86.0	5
5KP40A	5KP40CA	40.0	44.40	49.10	1	64.5	77.5	5
5KP43A	5KP43CA	43.0	47.80	52.80	1	69.4	72.0	5
5KP45A	5KP45CA	45.0	50.00	55.30	1	72.7	68.8	5
5KP48A	5KP48CA	48.0	53.30	58.90	1	77.4	64.7	5
5KP51A	5KP51CA	51.0	56.70	62.70	1	82.4	60.7	5
5KP54A	5KP54CA	54.0	60.00	66.30	1	87.1	57.3	5
5KP58A	5KP58CA	58.0	64.40	71.20	1	93.6	53.5	5
5KP60A	5KP60CA	60.0	66.70	73.70	1	96.8	51.7	5
5KP64A	5KP64CA	64.0	71.10	78.60	1	103.0	48.5	5
5KP70A	5KP70CA	70.0	77.80	86.00	1	113.0	44.2	5
5KP75A	5KP75CA	75.0	83.30	92.10	1	121.0	41.3	5
5KP78A	5KP78CA	78.0	86.70	95.80	1	126.0	39.7	5
5KP85A	5KP85CA	85.0	94.40	104.00	1	137.0	36.5	5
5KP90A	5KP90CA	90.0	100.0	111.0	1	146.0	34.2	5
5KP100A	5KP100CA	100.0	111.0	123.0	1	162.0	30.8	5
5KP110A	5KP110CA	110.0	122.0	135.0	1	177.0	28.2	5
5KP120A	5KP120CA	120.0	133.0	147.0	1	193.0	25.8	5
5KP130A	5KP130CA	130.0	144.0	159.0	1	209.0	24.0	5
5KP150A	5KP150CA	150.0	167.0	185.0	1	243.0	20.5	5
5KP160A	5KP160CA	160.0	178.0	197.0	1	259.0	19.3	5
5KP170A	5KP170CA	170.0	189.0	209.0	1	275.0	18.2	5
5KP180A	5KP180CA	180.0	201.0	222.0	1	292.0	17.2	5
5KP190A	5KP190CA	190.0	209.0	243.0	1	308.0	16.2	5
5KP200A	5KP200CA	200.0	224.0	247.0	1	324.0	15.5	5
5KP210A	5KP210CA	210.0	231.0	268.0	1	340.0	14.7	5
5KP220A	5KP220CA	220.0	246.0	272.0	1	356.0	14.0	5
5KP250A	5KP250CA	250.0	279.0	309.0	1	405.0	12.3	5
5KP300A	5KP300CA	300.0	335.0	371.0	1	486.0	10.3	5
5KP350A	5KP350CA	350.0	391.0	432.0	1	567.0	8.8	5
5KP400A	5KP400CA	400.0	447.0	494.0	1	648.0	7.7	5
5KP440A	5KP440CA	440.0	492.0	543.0	1	713.0	7.0	5

Typical Characteristics

FIG1:Peak Pulse Power Rating Curve

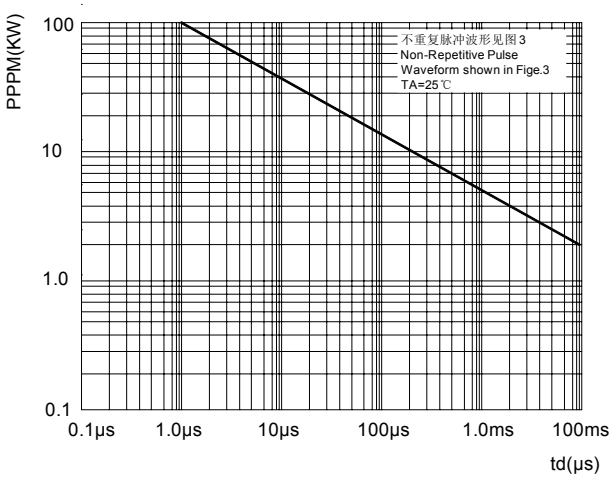


FIG2: Pulse Power or Current vs. Initial Junction Temperature

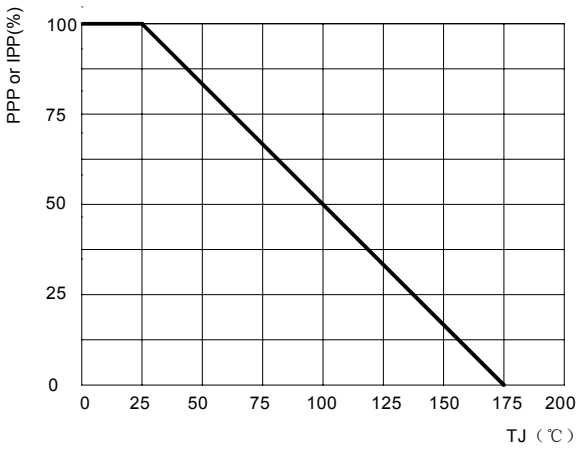


FIG3: Pulse Waveform

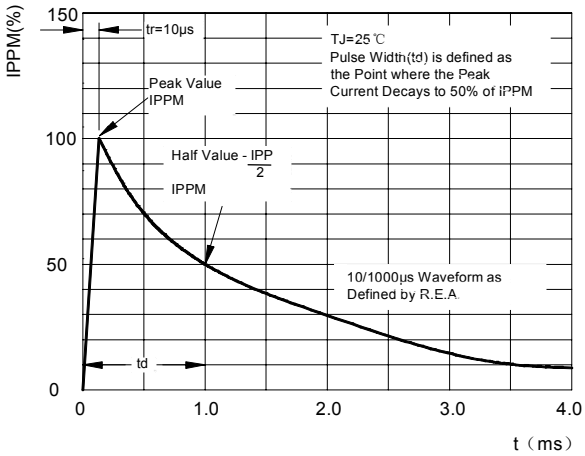


FIG4: Power Derating Curve

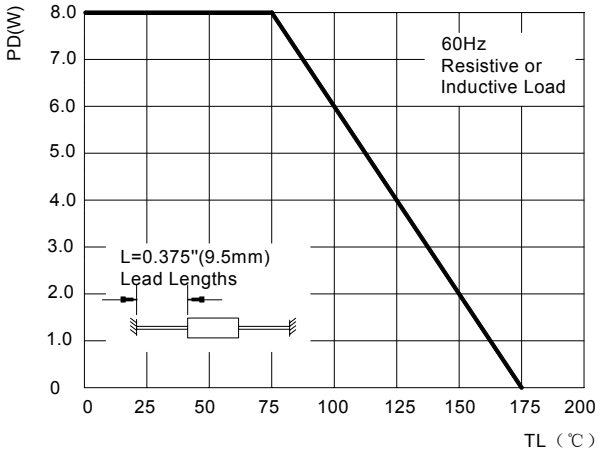
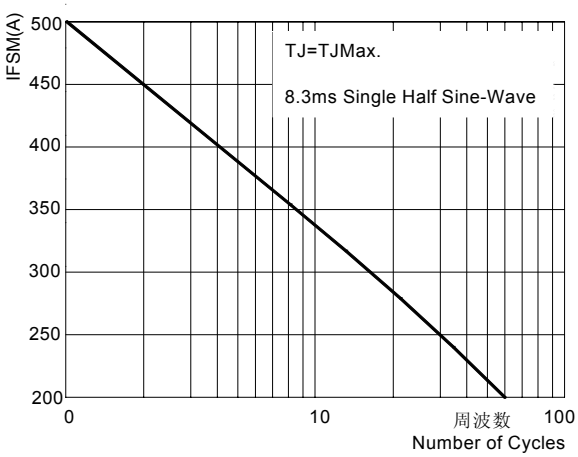
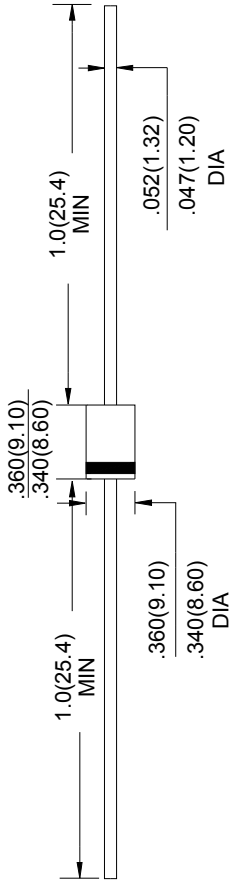


FIG5: Maximum Non-Repetitive Surge Current



R-6 Package Outline Dimensions



Unit: in inches (millimeters)

Ordering Information

Part Number	Package	Shipping Quantity
5KP5.0(C)A- 5KP440(C)A	R-6	300/BOX

Marking Diagram

Uni-direction

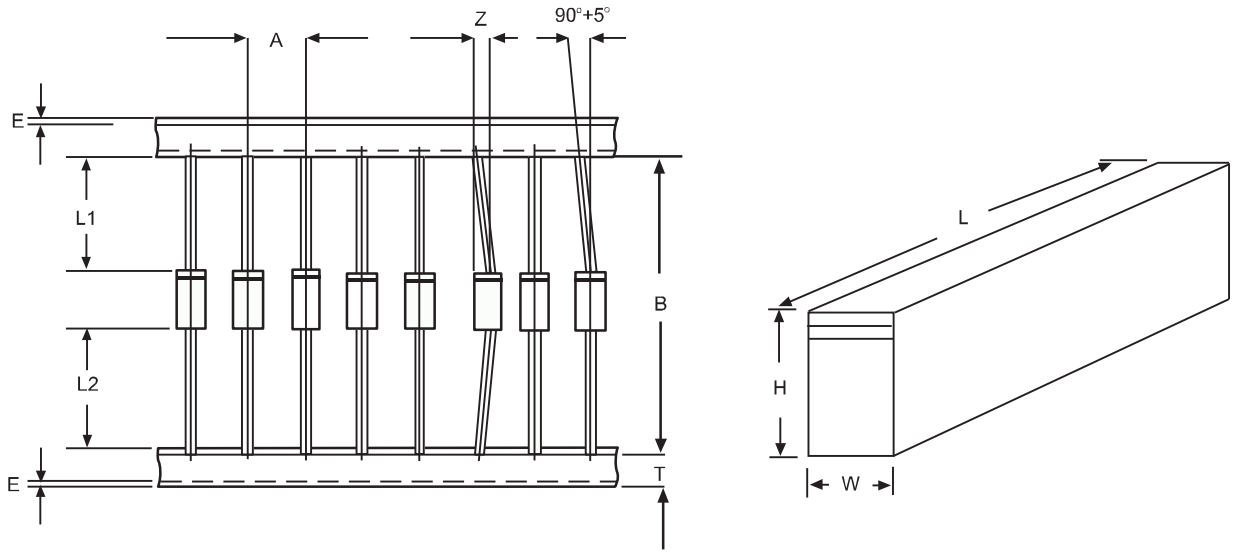
Bi-directional

XX: From 5.0 To 440

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	|L1-L2|	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``)