

DO-27 Plastic-Encapsulate Diodes

Transient Voltage Suppressor Diodes

Features

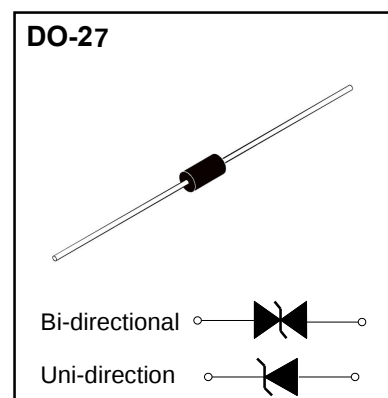
- P_{PPM} 1500W
- V_{RWM} 5.8V- 509V
- Low power loss, high efficiency
- Excellent clamping capability

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-201AD (DO-27) 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	1500
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 $T_L=75^{\circ}\text{C}$	5.0
Peak forward surge current(2)	I_{FSM}	A	8.3 ms single half sine-wave unidirectional only	200
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 50A for unidirectional only	3.5/6.5
Thermal resistance	$R_{\theta JL}$	$^{\circ}\text{C}/\text{W}$	Between junction and lead	15.4
	$R_{\theta JA}$	$^{\circ}\text{C}/\text{W}$	Between junction and Ambient	75
	$R_{\theta JC}$	$^{\circ}\text{C}/\text{W}$	Between junction and Case	10

Notes:

- (1) Non-repetitive current pulse, per Fig. 3 and derated above $T_A=25^{\circ}\text{C}$ per Fig.2.
- (2) Measured on 8.3ms single half sine-wave or equivalent square wave, duty cycle=4 pulses per minute maximum.
- (3) $V_F<3.5\text{V}$ 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 (μA)
1.5KE6.8A	1.5KE6.8CA	5.8	6.45	7.14	10	10.5	144.8	1000
1.5KE7.5A	1.5KE7.5CA	6.4	7.13	7.88	10	11.3	134.5	500
1.5KE8.2A	1.5KE8.2CA	7.0	7.79	8.61	10	12.1	125.6	200
1.5KE9.1A	1.5KE9.1CA	7.8	8.65	9.55	1	13.4	113.4	50
1.5KE10A	1.5KE10CA	8.6	9.50	10.50	1	14.5	104.8	10
1.5KE11A	1.5KE11CA	9.4	10.50	11.60	1	15.6	97.4	5
1.5KE12A	1.5KE12CA	10.2	11.40	12.60	1	16.7	91.0	5
1.5KE13A	1.5KE13CA	11.1	12.40	13.70	1	18.2	83.5	1
1.5KE15A	1.5KE15CA	12.8	14.30	15.80	1	21.2	71.7	1
1.5KE16A	1.5KE16CA	13.6	15.20	16.80	1	22.5	67.6	1
1.5KE18A	1.5KE18CA	15.3	17.10	18.90	1	25.5	60.3	1
1.5KE20A	1.5KE20CA	17.1	19.00	21.00	1	27.7	54.9	1
1.5KE22A	1.5KE22CA	18.8	20.90	23.10	1	30.6	49.7	1
1.5KE24A	1.5KE24CA	20.5	22.80	25.20	1	33.2	45.8	1
1.5KE27A	1.5KE27CA	23.1	25.70	28.40	1	37.5	40.5	1
1.5KE30A	1.5KE30CA	25.6	28.50	31.50	1	41.4	36.7	1
1.5KE33A	1.5KE33CA	28.2	31.40	34.70	1	45.7	33.3	1
1.5KE36A	1.5KE36CA	30.8	34.20	37.80	1	49.9	30.5	1
1.5KE39A	1.5KE39CA	33.3	37.10	41.00	1	53.9	28.2	1
1.5KE43A	1.5KE43CA	36.8	40.90	45.20	1	59.3	25.6	1
1.5KE47A	1.5KE47CA	40.2	44.70	49.40	1	64.8	23.5	1
1.5KE51A	1.5KE51CA	43.6	48.50	53.60	1	70.1	21.7	1
1.5KE56A	1.5KE56CA	47.8	53.20	58.80	1	77.0	19.7	1
1.5KE62A	1.5KE62CA	53.0	58.90	65.10	1	85.0	17.9	1
1.5KE68A	1.5KE68CA	58.1	64.60	71.40	1	92.0	16.5	1
1.5KE75A	1.5KE75CA	64.1	71.30	78.80	1	103.0	14.8	1
1.5KE82A	1.5KE82CA	70.1	77.90	86.10	1	113.0	13.5	1
1.5KE91A	1.5KE91CA	77.8	86.50	95.50	1	125.0	12.2	1
1.5KE100A	1.5KE100CA	85.5	95.0	105.0	1	137.0	11.1	1
1.5KE110A	1.5KE110CA	94.0	105.0	116.0	1	152.0	10.0	1
1.5KE120A	1.5KE120CA	102.0	114.0	126.0	1	165.0	9.2	1
1.5KE130A	1.5KE130CA	111.0	124.0	137.0	1	179.0	8.5	1
1.5KE150A	1.5KE150CA	128.0	143.0	158.0	1	207.0	7.3	1
1.5KE160A	1.5KE160CA	136.0	152.0	168.0	1	219.0	6.9	1
1.5KE170A	1.5KE170CA	145.0	162.0	179.0	1	234.0	6.5	1
1.5KE180A	1.5KE180CA	154.0	171.0	189.0	1	246.0	6.2	1
1.5KE200A	1.5KE200CA	171.0	190.0	210.0	1	274.0	5.5	1
1.5KE220A	1.5KE220CA	185.0	209.0	231.0	1	328.0	4.6	1
1.5KE250A	1.5KE250CA	214.0	237.0	263.0	1	344.0	4.4	1
1.5KE300A	1.5KE300CA	256.0	285.0	315.0	1	414.0	3.7	1
1.5KE350A	1.5KE350CA	300.0	332.0	368.0	1	482.0	3.2	1
1.5KE400A	1.5KE400CA	342.0	380.0	420.0	1	548.0	2.8	1
1.5KE440A	1.5KE440CA	376.0	418.0	462.0	1	602.0	2.5	1
1.5KE480A	1.5KE480CA	408.0	456.0	504.0	1	658.0	2.3	1
1.5KE510A	1.5KE510CA	434.0	485.0	535.0	1	698.0	2.1	1
1.5KE530A	1.5KE530CA	450.0	503.0	556.0	1	725.0	2.1	1
1.5KE540A	1.5KE540CA	459.0	513.0	567.0	1	740.0	2.0	1
1.5KE550A	1.5KE550CA	467.0	522.5	577.5	1	760.0	2.0	1
1.5KE600A	1.5KE600CA	509.0	570.0	630.0	1	780.0	1.8	1

Typical Characteristics

FIG1: Peak Pulse Power Rating Curve

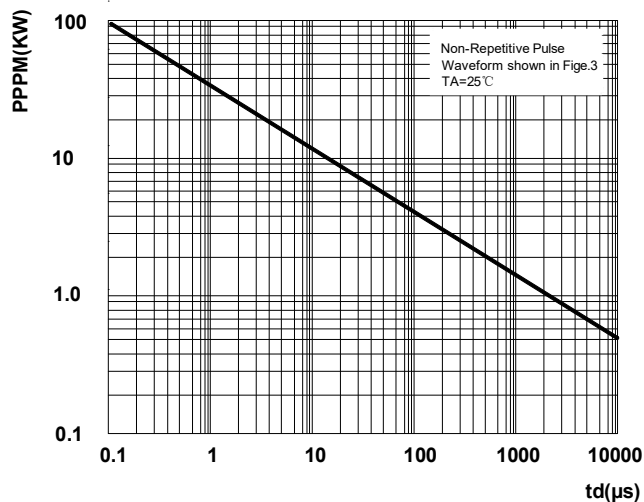


FIG2: Pulse Power or Current vs Initial Junction Temperature

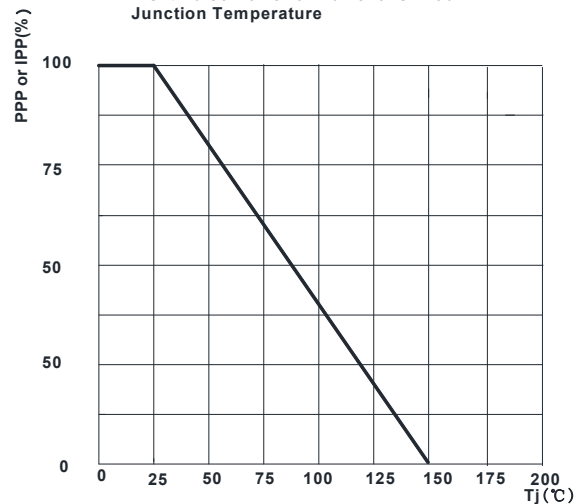


FIG3: Pulse Waveform

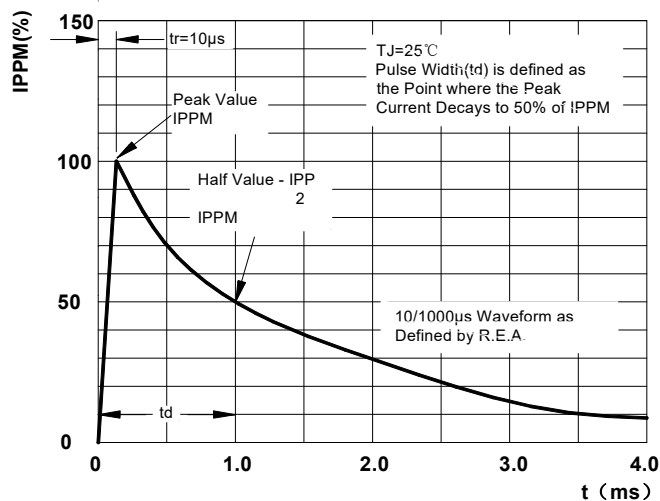


FIG4: Power Derating Curve

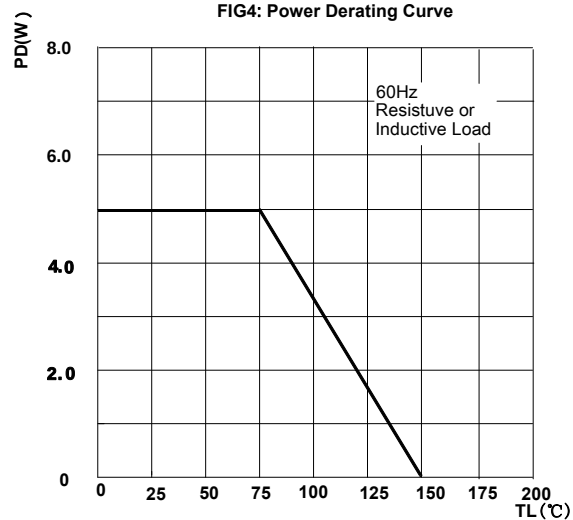


FIG5: Maximum Non-Repetitive Surge Current

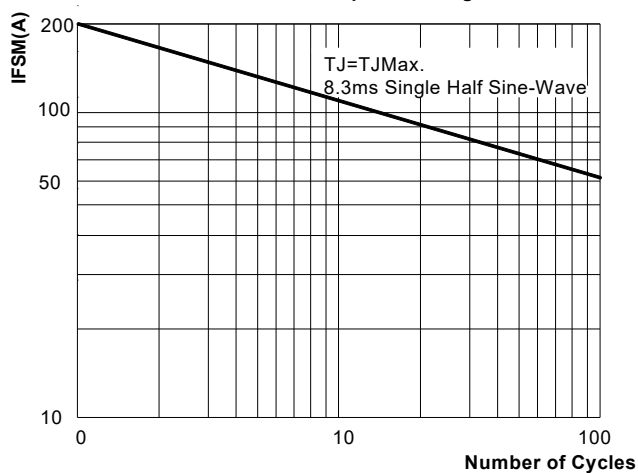
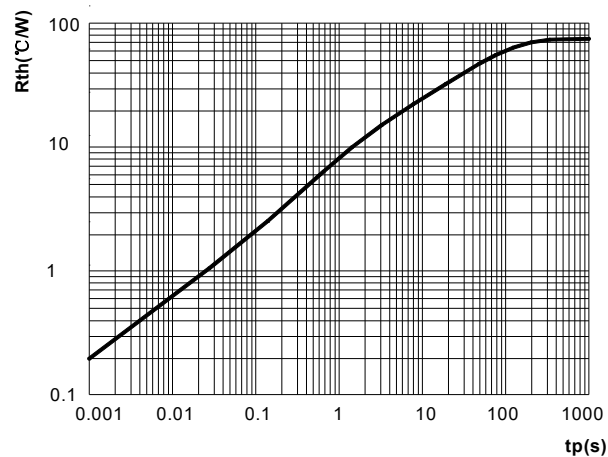
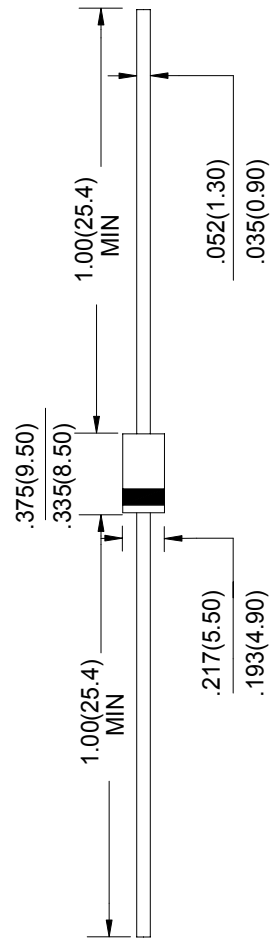


FIG6: Typical Transient Thermal Impedance



DO-27 Package Outline Dimensions



Unit: in inches (millimeters)

Ordering Information

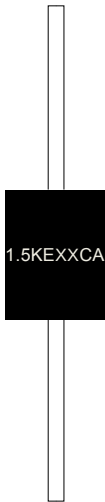
Part Number	Package	Shipping Quantity
1.5KE6.8(C)A- 1.5KE600(C)A	DO-27	1250/Box

Marking Diagram

Uni-direction



Bi-directional

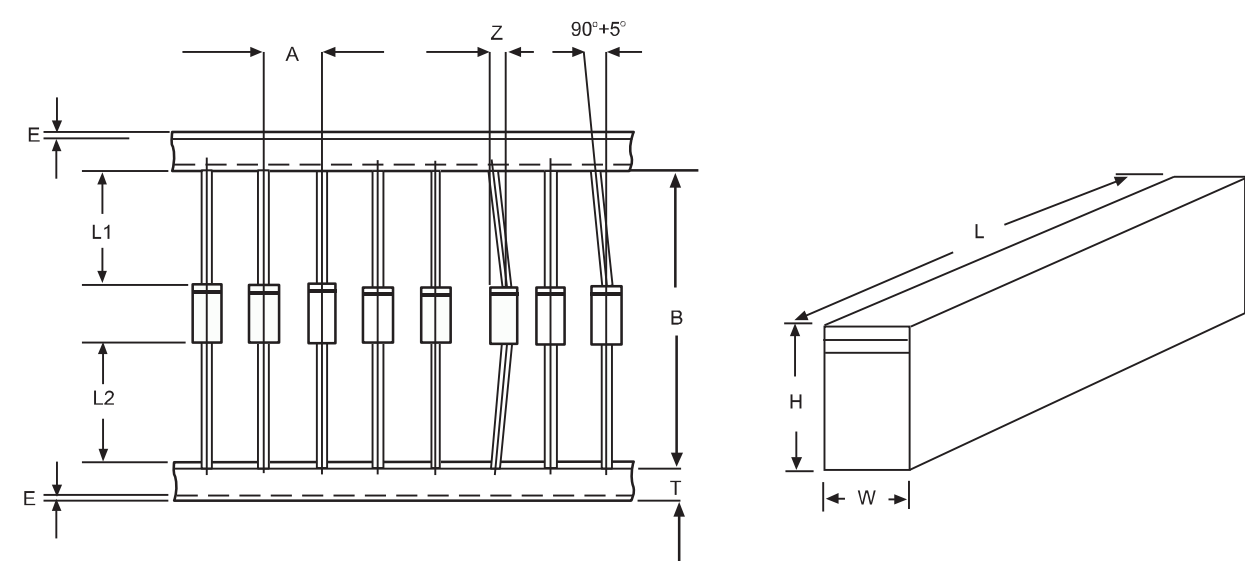


XX: From 6.8 To 600

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``)