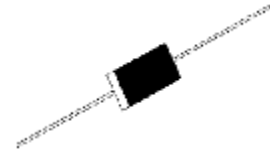


1.5KE Series 1500W Transient Voltage Suppressor

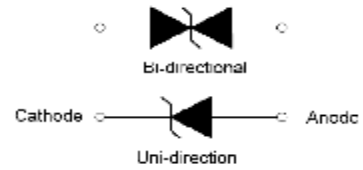
Features and benefits

- 2 Glass passivated or planar junction
- 2 Excellent clamping capability
- 2 Repetition rate (duty cycle): 0.01%
- 2 Typical IR less than 1μA above 10V.
- 2 Low profile package and low inductance
- 2 1500W Peak Pulse power capability at 10×1000μs waveform.
- 2 Fast response time: typically less than 1.0ps from 0V to VBR min.
- 2 High temperature soldering: 260°C/10s at terminals.
- 2 Plastic package has Underwriters Laboratory Flammability 94V-0.
- 2 Meets MSL level 1, per J-STD-020
- 2 For surface mounted applications in order to optimize board space

Pin Information and Graphic symbol



DO-27



symbol

Application information

- 2 I/O interface;
- 2 AC/DC power supply;
- 2 Low frequency signal transmission line (RS232, RS485, etc.)

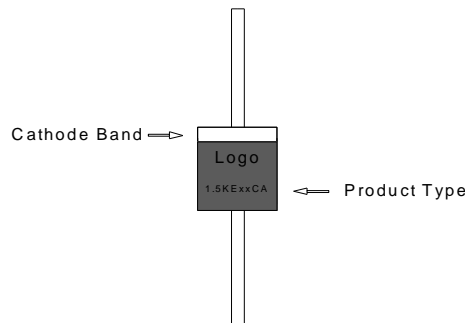
Agency Approvals

Icon	Description
RoHS	Compliance with 2011/65/EU
HF	Compliance with IEC61249-2-21:2003
	Mean lead free

ABSOLUTE MAXIMUM RATINGS (T_A=25°C, RH=45%-75%, unless otherwise noted)

Parameter	Symbol	Value	Unit
Storage temperature range	T _{stg}	-55 to +150	°C
Operating junction temperature range	T _j	-55 to +150	°C
Steady state power dissipation at TL=75°C	PM(AV)	6.5	W
Peak pulse power dissipation on 10/1000μs waveform	P _{PP}	1500	W
Peak forward surge current, 8.3ms single half sine-wave	I _{FSM}	200	A

Marking & ORDERING INFORMATION



1.5KE XX C A
 (1) (2) (3) (4)
 (1) Series: 1500 watts series
 (2) Reverse Stand-off Voltage
 (3) Bi-directional
 (4) 5% V_{BR} Voltage tolerance

ELECTRICAL CHARACTERISTICS (TA=25°C)

Part Number		V _R	I _R @V _R	V _{BR} @I _T		I _T	V _C @I _{PP}	I _{PP} ^①
Uni-Polar	Bi-Polar	V	μA	min(V)	max(V)	mA	max(V)	A
1.5KE6.8A	1.5KE6.8CA	5.8	150	6.45	7.14	10	10.5	147.1
1.5KE7.5A	1.5KE7.5CA	6.4	100	7.13	7.88	10	11.3	132.8
1.5KE8.2A	1.5KE8.2CA	7.02	50	7.79	8.61	10	12.1	124.0
1.5KE9.1A	1.5KE9.1CA	7.78	20	8.65	9.55	1	13.4	112.0
1.5KE10A	1.5KE10CA	8.55	10	9.50	10.50	1	14.5	103.5
1.5KE11A	1.5KE11CA	9.4	5	10.50	11.60	1	15.6	96.2
1.5KE12A	1.5KE12CA	10.2	2	11.40	12.60	1	16.7	89.8
1.5KE13A	1.5KE13CA	11.1	1	12.40	13.70	1	18.2	82.5
1.5KE15A	1.5KE15CA	12.8	1	14.30	15.80	1	21.2	70.8
1.5KE16A	1.5KE16CA	13.6	1	15.20	16.80	1	22.5	66.7
1.5KE18A	1.5KE18CA	15.3	1	17.10	18.90	1	25.2	59.6
1.5KE20A	1.5KE20CA	17.1	1	19.00	21.00	1	27.7	54.2
1.5KE22A	1.5KE22CA	18.8	1	20.90	23.10	1	30.6	49.1
1.5KE24A	1.5KE24CA	20.5	1	22.80	25.20	1	33.2	45.2
1.5KE27A	1.5KE27CA	23.1	1	25.70	28.40	1	37.5	40.0
1.5KE30A	1.5KE30CA	25.6	1	28.50	31.50	1	41.4	36.3
1.5KE33A	1.5KE33CA	28.2	1	31.40	34.70	1	45.7	32.9
1.5KE36A	1.5KE36CA	30.8	1	34.20	37.80	1	49.9	30.1
1.5KE39A	1.5KE39CA	33.3	1	37.10	41.00	1	53.9	27.9
1.5KE43A	1.5KE43CA	36.8	1	40.90	45.20	1	59.3	25.3
1.5KE47A	1.5KE47CA	40.2	1	44.70	49.40	1	64.8	23.2
1.5KE51A	1.5KE51CA	43.6	1	48.50	53.60	1	70.1	21.4
1.5KE56A	1.5KE56CA	47.8	1	53.20	58.80	1	77.0	19.5
1.5KE62A	1.5KE62CA	53.0	1	58.90	65.10	1	85.0	17.7
1.5KE68A	1.5KE68CA	58.1	1	64.60	71.40	1	92.0	16.4
1.5KE75A	1.5KE75CA	64.1	1	71.30	78.80	1	103.0	14.6
1.5KE82A	1.5KE82CA	70.1	1	77.90	86.10	1	113.0	13.3
1.5KE91A	1.5KE91CA	77.8	1	86.50	95.50	1	125.0	12.0
1.5KE100A	1.5KE100CA	85.5	1	95.00	105.0	1	137.0	11.0
1.5KE110A	1.5KE110CA	94.0	1	105.0	116.0	1	152.0	10.0

ELECTRICAL CHARACTERISTICS ($T_A=25^\circ\text{C}$, continued)

Part Number		V_R	$I_R@V_R$	$V_{BR}@I_T$		I_T	$V_C@I_{PP}$	$I_{PP}^{①}$
Uni-Polar	Bi-Polar	V	μA	min(V)	max(V)	mA	max(V)	A
1.5KE120A	1.5KE120CA	102.0	1	114.0	126.0	1	165.0	9.1
1.5KE130A	1.5KE130CA	111.0	1	124.0	137.0	1	179.0	8.4
1.5KE150A	1.5KE150CA	128.0	1	143.0	158.0	1	207.0	7.3
1.5KE160A	1.5KE160CA	136.0	1	152.0	168.0	1	219.0	6.9
1.5KE170A	1.5KE170CA	145.0	1	162.0	179.0	1	234.0	6.5
1.5KE180A	1.5KE180CA	154.0	1	171.0	189.0	1	246.0	6.1
1.5KE200A	1.5KE200CA	171.0	1	190.0	210.0	1	274.0	5.5
1.5KE220A	1.5KE220CA	185.0	1	209.0	231.0	1	328.0	4.6
1.5KE250A	1.5KE250CA	214.0	1	237.0	263.0	1	344.0	4.4
1.5KE300A	1.5KE300CA	256.0	1	285.0	315.0	1	414.0	3.7
1.5KE350A	1.5KE350CA	300.0	1	332.0	368.0	1	482.0	3.2
1.5KE400A	1.5KE400CA	342.0	1	380.0	420.0	1	548.0	2.8
1.5KE440A	1.5KE440CA	376.0	1	418.0	462.0	1	602.0	2.5

① Surge waveform: 10/1000 μs

V_R : Stand-off Voltage -- Maximum voltage that can be applied

V_{BR} : Breakdown Voltage

V_C : Clamping Voltage -- Peak voltage measured across the suppressor at a specified I_{PP}

I_R : Reverse Leakage Current

RATINGS AND V-I CHARACTERISTICS CURVES ($T_A=25^\circ\text{C}$, unless otherwise noted)

FIG.1:V- I curve characteristics (Uni-directional)

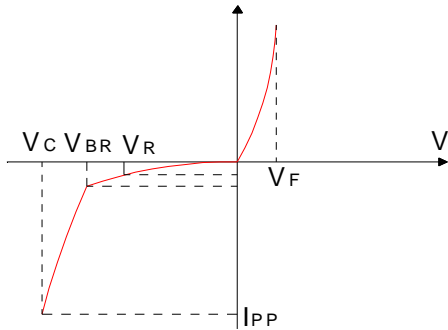


FIG.2:V- I curve characteristics (Bi-directional)

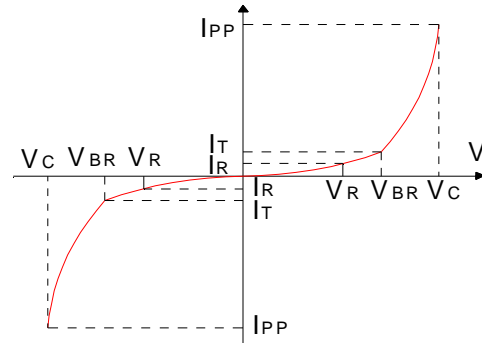


FIG.3: Pulse waveform

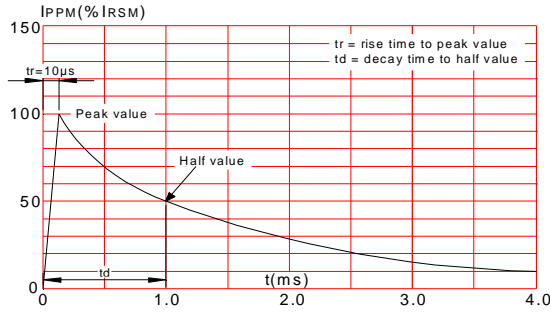
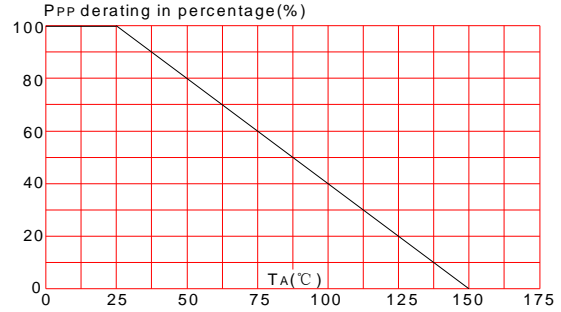
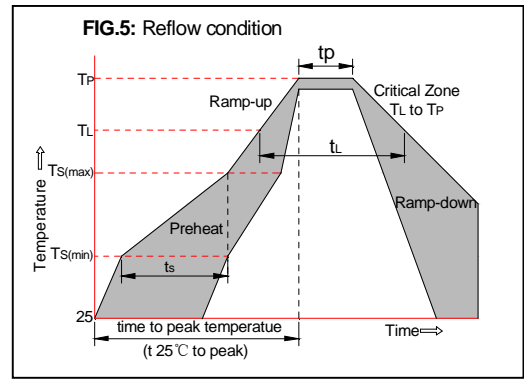


FIG.4: Pulse derating curve

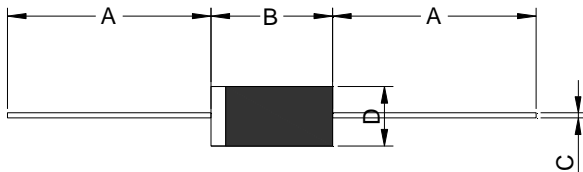


SOLDERING PARAMETERS

Reflow Condition		Pb-Free assembly (see FIG.5)
Pre Heat	-Temperature Min ($T_{s(min)}$)	+150°C
	-Temperature Max($T_{s(max)}$)	+200°C
	-Time (Min to Max) (ts)	60-180 secs.
Average ramp up rate (Liquid us Temp (T_L) to peak)		3°C/sec. Max
$T_{s(max)}$ to T_L - Ramp-up Rate		3°C/sec. Max
Reflow	-Temperature(T_L)(Liquid us)	+217°C
	-Temperature(t_L)	60-150 secs.
Peak Temp (T_p)		+260(+0/-5)°C
Time within 5°C of actual Peak Temp (t_p)		30 secs. Max
Ramp-down Rate		6°C/sec. Max
Time 25°C to Peak Temp (T_p)		8 min. Max
Do not exceed		+260°C



PACKAGE MECHANICAL DATA



Ref.	Dimensions			
	Inches		Millimeters	
	Min.	Max.	Min.	Max.
A	1.000	-	25.40	-
B	0.339	0.362	8.60	9.20
C	0.045	0.057	1.15	1.45
D	0.193	0.221	4.90	5.60

TAPE AND REEL SPECIFICATION-DO-27

Part Number	Case Type	Quantity	Packing Option
1.5KEXXCA/A	DO-27/DO-201	1000	Box