

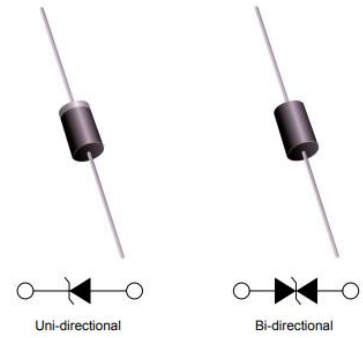
TVS Diode: 1.5KE Series

Axial Leaded Type 1500 W



■ Features

1. Glass passivated chip
2. Excellent clamping capability
3. Low clamping voltage
4. Low leakage current
5. RoHS compliant
6. 1500W peak pulse power capability at 10/1000 μ s waveform, repetition rate (duty cycle): 0.01%



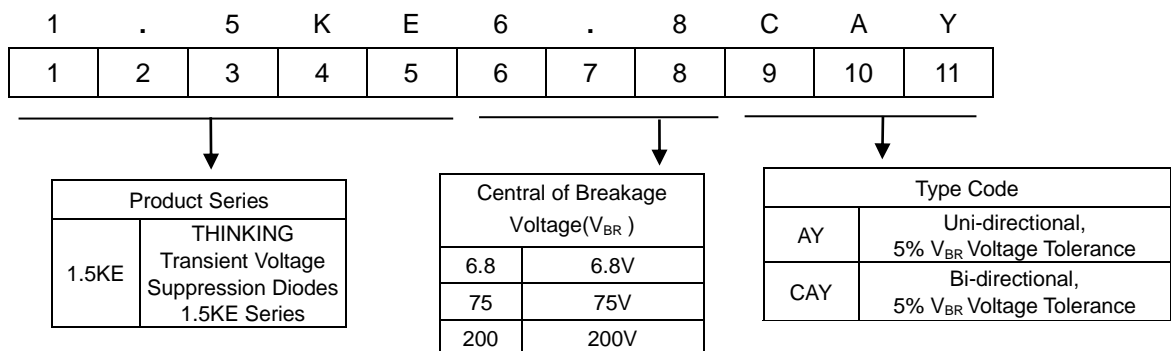
■ Recommended Applications

1. Computers
2. Telecom system
3. Industrial equipment
4. Consumer electronic applications
5. Other VCC bus and I/O interfaces

■ Mechanical Data

1. Case: Molded plastic, DO-27
2. Epoxy: UL 94V-0 rate flame retardant
3. Terminals: Solderable per MIL-STD-750, method 2026
4. Polarity: Color band denotes cathode end
5. Mounting Position: Any

■ Part Number Code

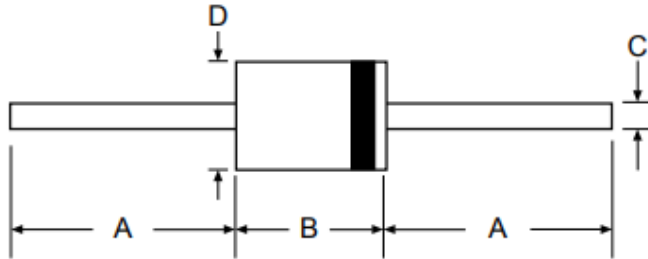


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Structures and Dimensions



Symbol	Dimensions in millimeters	
	Min	Max
A	24.0	-
B	7.2	9.5
C	1.0	1.3
D	4.8	5.3

Maximum Rating ($T_A=25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Value	Unit
Peak power dissipation with a 10/1000 μs waveform (Note 1)	P_{PPM}	1500	W
Peak pulse current with 10/1000 μs waveform (Note 1)	I_{PPM}	See next table	A
Peak forward surge current, 8.3 ms single half sine-wave (Note 2)	I_{FSM}	200	A
Power dissipation on infinite heatsink at $T_L=75^\circ\text{C}$	P_D	6.5	W
Typical thermal resistance junction to ambient	$R_{\theta JA}$	75	$^\circ\text{C/W}$
Typical thermal resistance junction to lead	$R_{\theta JL}$	20	$^\circ\text{C/W}$
Operating junction and storage temperature range	T_J, T_{STG}	-55 to +150	$^\circ\text{C}$

Note:

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 for unidirectional device only, duty cycle=4 per minute maximum.

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

Part No. (Uni)	Part No. (Bi)	Reverse Stand off Voltage	Breakage Voltage V _{BR} @ I _T		Test Current I _T (mA)	Max. Clamping Voltage V _C @ I _{pp}	Max. Peak Pulse Current I _{pp} (A)	Max. Reverse Leakage I _R @V _{RWM}
			V _{RWM} (V)	Min(V)		Max(V)	V _C (V)	I _{pp} (A)
1.5KE6.8AY	1.5KE6.8CAY	5.8	6.45	7.14	10	10.5	143	1000
1.5KE7.5AY	1.5KE7.5CAY	6.4	7.13	7.88	10	11.3	133	500
1.5KE8.2AY	1.5KE8.2CAY	7.02	7.79	8.61	10	12.1	124	200
1.5KE9.1AY	1.5KE9.1CAY	7.78	8.65	9.55	1	13.4	112	50
1.5KE10AY	1.5KE10CAY	8.55	9.5	10.5	1	14.5	103	10
1.5KE11AY	1.5KE11CAY	9.4	10.5	11.6	1	15.6	96.2	5
1.5KE12AY	1.5KE12CAY	10.2	11.4	12.6	1	16.7	89.8	5
1.5KE13AY	1.5KE13CAY	11.1	12.4	13.7	1	18.2	82.4	5
1.5KE15AY	1.5KE15CAY	12.8	14.3	15.8	1	21.2	70.8	1
1.5KE16AY	1.5KE16CAY	13.6	15.2	16.8	1	22.5	66.7	1
1.5KE18AY	1.5KE18CAY	15.3	17.1	18.9	1	25.2	59.5	1
1.5KE20AY	1.5KE20CAY	17.1	19	21	1	27.7	54.2	1
1.5KE22AY	1.5KE22CAY	18.8	20.9	23.1	1	30.6	49	1
1.5KE24AY	1.5KE24CAY	20.5	22.8	25.2	1	33.2	45.2	1
1.5KE27AY	1.5KE27CAY	23.1	25.7	28.4	1	37.5	40	1
1.5KE30AY	1.5KE30CAY	25.6	28.5	31.5	1	41.4	36.2	1
1.5KE33AY	1.5KE33CAY	28.2	31.4	34.7	1	45.7	32.8	1
1.5KE36AY	1.5KE36CAY	30.8	34.2	37.8	1	49.9	30.1	1
1.5KE39AY	1.5KE39CAY	33.3	37.1	41	1	53.9	27.8	1
1.5KE43AY	1.5KE43CAY	36.8	40.9	45.2	1	59.3	25.3	1
1.5KE47AY	1.5KE47CAY	40.2	44.7	49.4	1	64.8	23.1	1
1.5KE51AY	1.5KE51CAY	43.6	48.5	53.6	1	70.1	21.4	1
1.5KE56AY	1.5KE56CAY	47.8	53.2	58.8	1	77	19.5	1
1.5KE62AY	1.5KE62CAY	53	58.9	65.1	1	85	17.6	1
1.5KE68AY	1.5KE68CAY	58.1	64.6	71.4	1	92	16.3	1
1.5KE75AY	1.5KE75CAY	64.1	71.3	78.8	1	104	14.6	1
1.5KE82AY	1.5KE82CAY	70.1	77.9	86.1	1	113	13.3	1
1.5KE91AY	1.5KE91CAY	77.8	86.5	95.5	1	125	12	1
1.5KE100AY	1.5KE100CAY	85.5	95	105	1	137	10.9	1

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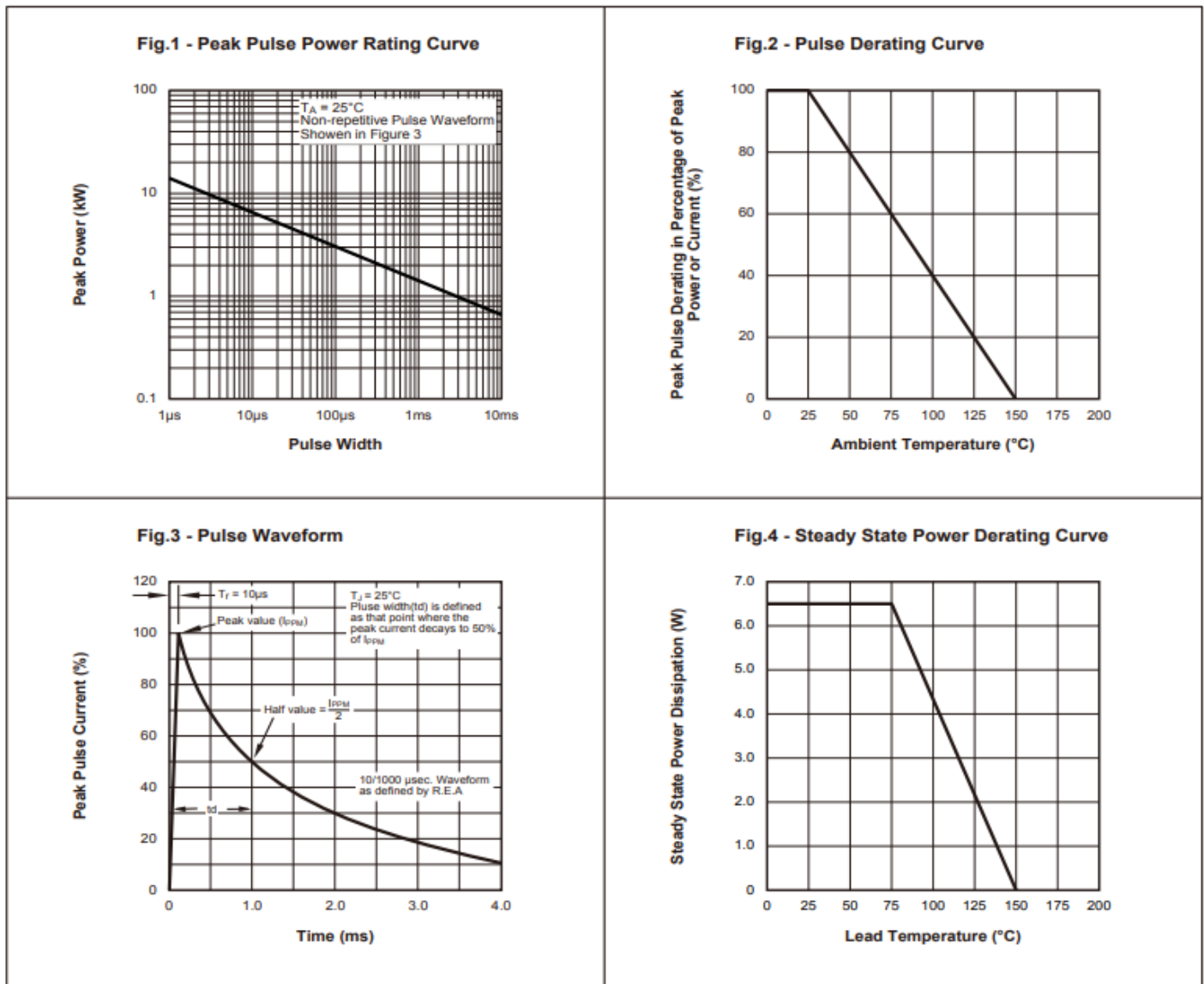
Part No. (Uni)	Part No. (Bi)	Reverse Stand off Voltage	Breakage Voltage V _{BR} @ I _T		Test Current I _T (mA)	Max. Clamping Voltage V _C @ I _{pp}	Max. Peak Pulse Current I _{pp} (A)	Max. Reverse Leakage I _R @ V _{RWM}
			V _{RWM} (V)	Min(V)		Max(V)	V _C (V)	I _{pp} (A)
1.5KE110AY	1.5KE110CAY	94	105	116	1	152	9.9	1
1.5KE120AY	1.5KE120CAY	102	114	126	1	165	9.1	1
1.5KE130AY	1.5KE130CAY	111	124	137	1	179	8.4	1
1.5KE150AY	1.5KE150CAY	128	143	158	1	207	7.2	1
1.5KE160AY	1.5KE160CAY	136	152	168	1	219	6.8	1
1.5KE170AY	1.5KE170CAY	145	162	179	1	234	6.4	1
1.5KE180AY	1.5KE180CAY	154	171	189	1	246	6.1	1
1.5KE200AY	1.5KE200CAY	171	190	210	1	274	5.5	1
1.5KE220AY	1.5KE220CAY	185	209	231	1	328	4.6	1
1.5KE250AY	1.5KE250CAY	214	237	263	1	344	4.4	1
1.5KE300AY	1.5KE300CAY	256	285	315	1	414	3.6	1
1.5KE350AY	1.5KE350CAY	300	333	368	1	482	3.1	1
1.5KE400AY	1.5KE400CAY	342	380	420	1	548	2.7	1
1.5KE440AY	1.5KE440CAY	376	418	462	1	602	2.5	1
1.5KE480AY	1.5KE480CAY	408	456	504	1	658	2.3	1
1.5KE510AY	1.5KE510CAY	434	485	535	1	698	2.1	1
1.5KE530AY	1.5KE530CAY	450	503.5	556.5	1	725	2.1	1
1.5KE540AY	1.5KE540CAY	459	513	567	1	740	2	1
1.5KE550AY	1.5KE550CAY	467	522.5	577.5	1	760	2	1

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■ Typical Characteristics ($T_A=25^\circ\text{C}$ unless otherwise noted)

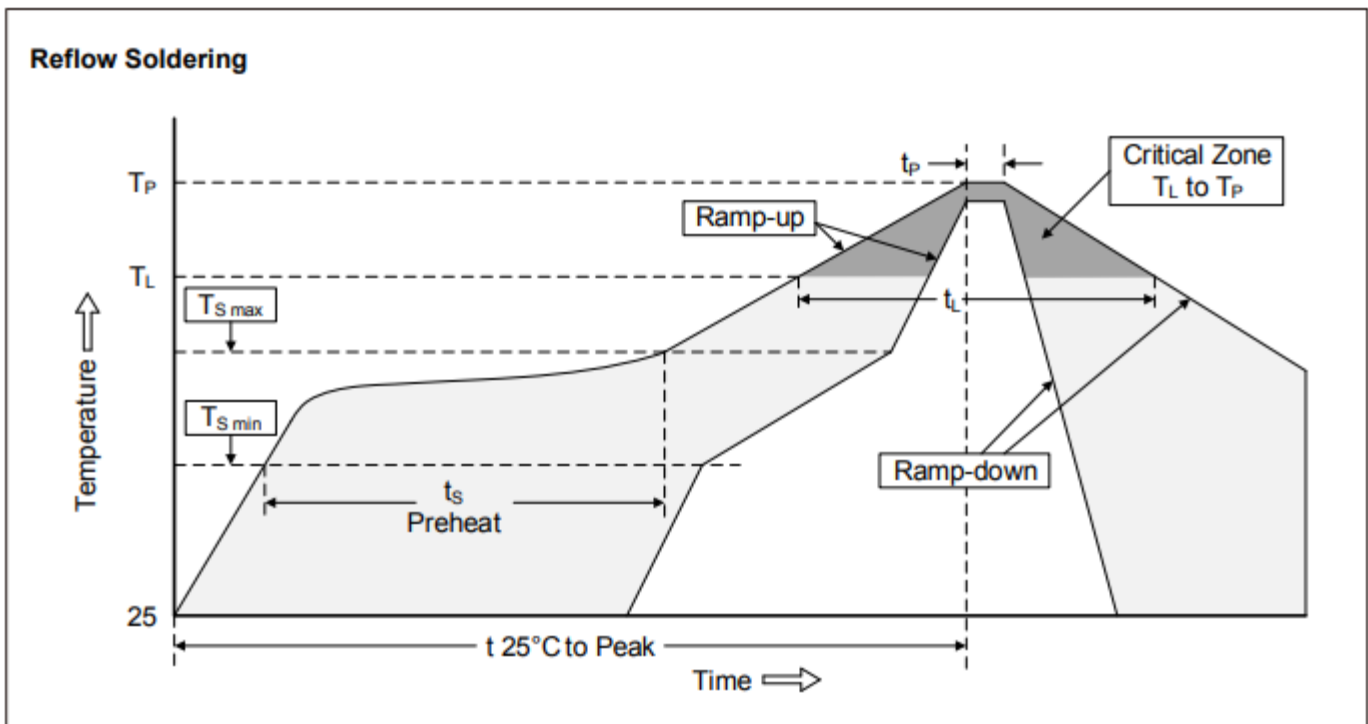


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■ Soldering Recommendation



Recommended Conditions

Profile Feature	Pb-Free Assembly
Average ramp-up rate (T_L to T_P)	3°C/second max.
Preheat -Temperature Min ($T_{S\ min}$) -Temperature Max ($T_{S\ max}$) -Time (min to max) (t_s)	150°C 200°C 60-180 seconds
$T_{S\ max}$ to T_L -Ramp-up Rate	3°C/second max.
Time maintained above: -Temperature (T_L) -Time (t_L)	217°C 60-150 seconds
Peak Temperature (T_P)	260°C
Time within 5°C of actual Peak Temperature (t_P)	20-40 seconds
Ramp-down Rate	6°C/second max.
Time 25°C to Peak Temperature	8 minutes max.

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■ Quantity

114

Series Type	Packaging option	Base quantity	Packaging specification
1.5KE	Tape and box	1000pcs / box	EIA STD RS-481 116
		1250pcs / box	117

■ Warehouse Storage Conditions of product

- Storage Condition:
 1. Storage Temperature: $-10^{\circ}\text{C} \sim +40^{\circ}\text{C}$
 2. Relative Humidity: $\cong 75\% \text{RH}$
 3. Keep away from corrosive atmosphere and sunlight.
- Period of Storage: 1 year.