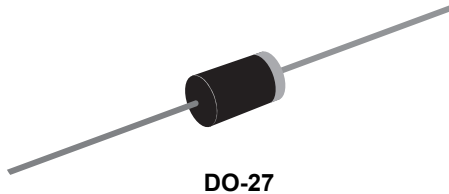


Transient Voltage Suppressors

1.5KE6.8A/CA thru 1.5KE550A/CA 1N6267A thru 1N6303A iS Electronics



DO-27

PRIMARY CHARACTERISTICS	
V_{BR} uni-directional	6.8 V to 550 V
V_{BR} bi-directional	6.8 V to 440 V
V_{WM} uni-directional	5.8 V to 468 V
V_{WM} bi-directional	5.8 V to 376 V
P_{PPM}	1500 W
P_D	6.5 W
I_{FSM} (uni-directional only)	200 A
T_J max.	175 °C
Polarity	Uni-directional, bi-directional
Package	1.5KE

FEATURES

- Glass passivated chip junction
- Available in uni-directional and bi-directional
- 1500 W peak pulse power capability with a 10/1000 μ s waveform, repetitive rate (duty cycle): 0.01 %
- Excellent clamping capability
- Very fast response time
- Low incremental surge resistance
- AEC-Q101 qualified
- Solder dip 275 °C max. 10 s, per JESD 22-B106
- Material categorization: for definitions of compliance please see www.iselectronics.top

TYPICAL APPLICATIONS

Use in sensitive electronics protection against voltage transients induced by inductive load switching and lighting on ICs, MOSFET, signal lines of sensor units for consumer, computer, industrial, automotive, and telecommunication.

MECHANICAL DATA

Case: Molded epoxy body over passivated junction
Molding compound meets UL 94 V-0 flammability rating
Note

- 1.5KE250A to 1.5KE550A and 1.5KE250CA to 1.5KE440CA for commercial grade only

Polarity: For uni-directional types the color band denotes cathode end, no marking on bi-directional types

DEVICES FOR BI-DIRECTION APPLICATIONS

For bi-directional types, use CA suffix (e.g. 1.5KE440CA)

Electrical characteristics apply in both directions.

MAXIMUM RATINGS ($T_A = 25\text{ °C}$ unless otherwise noted)			
PARAMETER	SYMBOL	VALUE	UNIT
Peak pulse power dissipation with a 10/1000 μ s waveform ⁽¹⁾ (fig. 1)	P_{PPM}	1500	W
Peak pulse current with a 10/1000 μ s waveform ⁽¹⁾	I_{PPM}	See next table	A
Power dissipation on infinite heatsink at $T_L = 75\text{ °C}$ (fig. 5)	P_D	6.5	W
Peak forward surge current 8.3 ms single half sine-wave uni-directional only ⁽²⁾	I_{FSM}	200	A
Maximum instantaneous forward voltage at 100 A for uni-directional only ⁽³⁾	V_F	3.5/5.0	V
Operating junction and storage temperature range	T_J, T_{STG}	-55 to +175	°C

Notes

⁽¹⁾ Non-repetitive current pulse, per fig. 3 and derated above $T_A = 25\text{ °C}$ per fig. 2

⁽²⁾ Measured on 8.3 ms single half sine-wave or equivalent square wave, duty cycle = 4 pulses per minute maximum

⁽³⁾ $V_F = 3.5\text{ V}$ for 1.5KE220A and below; $V_F = 5.0\text{ V}$ for 1.5KE250A and above



1.5KE6.8A/CA thru 1.5KE550A/CA 1N6267A thru 1N6303A

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ELECTRICAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted)									
TYPE NUMBER 型号	GENERAL SEMICONDUCTOR PART NUMBER 零件号	BREAKDOWN VOLTAGE V _{BR} AT I _T (1) 崩溃电压		TEST CURRENT I _T (mA) 测试电流	STAND-OFF VOLTAGE V _{WM} (V) 对峙电压	MAXIMUM REVERSE LEAKAGE AT V _{WM} I _D (4) (μA) 最大反向漏电流	MAXIMUM PEAK PULSE CURRENT I _{PPM} (2) (A) 最大脉冲电流	MAXIMUM CLAMPING VOLTAGE AT I _{PPM} V _C (V) 最大嵌位电压	MAXIMUM TEMPERATURE COEFFICIENT OF V _{BR} (%/°C) 最大温度系数
		MIN.	MAX.						
1N6267A	(+)-1.5KE6.8A/CA	6.45	7.14	10	5.80	1000	143	10.5	0.057
1N6268A	(+)-1.5KE7.5A/CA	7.13	7.88	10	6.40	500	133	11.3	0.061
1N6269A	(+)-1.5KE8.2A/CA	7.79	8.61	10	7.02	200	124	12.1	0.065
1N6270A	(+)-1.5KE9.1A/CA	8.65	9.55	1.0	7.78	50	112	13.4	0.068
1N6271A	(+)-1.5KE10A/CA	9.50	10.5	1.0	8.55	10	103	14.5	0.073
1N6272A	(+)-1.5KE11A/CA	10.5	11.6	1.0	9.40	5.0	96.2	15.6	0.075
1N6273A	(+)-1.5KE12A/CA	11.4	12.6	1.0	10.2	5.0	89.8	16.7	0.078
1N6274A	(+)-1.5KE13A/CA	12.4	13.7	1.0	11.1	5.0	82.4	18.2	0.081
1N6275A	(+)-1.5KE15A/CA	14.3	15.8	1.0	12.8	1.0	70.8	21.2	0.084
1N6276A	(+)-1.5KE16A/CA	15.2	16.8	1.0	13.6	1.0	66.7	22.5	0.086
1N6277A	(+)-1.5KE18A/CA	17.1	18.9	1.0	15.3	1.0	59.5	25.2	0.089
1N6278A	(+)-1.5KE20A/CA	19.0	21.0	1.0	17.1	1.0	54.2	27.7	0.090
1N6279A	(+)-1.5KE22A/CA	20.9	23.1	1.0	18.8	1.0	49.0	30.6	0.092
1N6280A	(+)-1.5KE24A/CA	22.8	25.2	1.0	20.5	1.0	45.2	33.2	0.094
1N6281A	(+)-1.5KE27A/CA	25.7	28.4	1.0	23.1	1.0	40.0	37.5	0.096
1N6282A	(+)-1.5KE30A/CA	28.5	31.5	1.0	25.6	1.0	36.2	41.4	0.097
1N6283A	(+)-1.5KE33A/CA	31.4	34.7	1.0	28.2	1.0	32.8	45.7	0.098
1N6284A	(+)-1.5KE36A/CA	34.2	37.8	1.0	30.8	1.0	30.1	49.9	0.099
1N6285A	(+)-1.5KE39A/CA	37.1	41.0	1.0	33.3	1.0	27.8	53.9	0.100
1N6286A	(+)-1.5KE43A/CA	40.9	45.2	1.0	36.8	1.0	25.3	59.3	0.101
1N6287A	(+)-1.5KE47A/CA	44.7	49.4	1.0	40.2	1.0	23.1	64.8	0.101
1N6288A	(+)-1.5KE51A/CA	48.5	53.6	1.0	43.6	1.0	21.4	70.1	0.102
1N6289A	(+)-1.5KE56A/CA	53.2	58.8	1.0	47.8	1.0	19.5	77.0	0.103
1N6290A	(+)-1.5KE62A/CA	58.9	65.1	1.0	53.0	1.0	17.6	85.0	0.104
1N6291A	(+)-1.5KE68A/CA	64.6	71.4	1.0	58.1	1.0	16.3	92.0	0.104
1N6292A	(+)-1.5KE75A/CA	71.3	78.8	1.0	64.1	1.0	14.6	104	0.105
1N6293A	(+)-1.5KE82A/CA	77.9	86.1	1.0	70.1	1.0	13.3	113	0.105
1N6294A	(+)-1.5KE91A/CA	86.5	95.5	1.0	77.8	1.0	12.0	125	0.106
1N6295A	(+)-1.5KE100A/CA	95.0	105	1.0	85.5	1.0	10.9	137	0.106
1N6296A	(+)-1.5KE110A/CA	105	116	1.0	94.0	1.0	9.9	152	0.107
1N6297A	(+)-1.5KE120A/CA	114	126	1.0	102	1.0	9.1	165	0.107
1N6298A	(+)-1.5KE130A/CA	124	137	1.0	111	1.0	8.4	179	0.107
1N6299A	(+)-1.5KE150A/CA	143	158	1.0	128	1.0	7.2	207	0.106
1N6300A	(+)-1.5KE160A/CA	152	168	1.0	136	1.0	6.8	219	0.108
1N6301A	(+)-1.5KE170A/CA	162	179	1.0	145	1.0	6.4	234	0.108
1N6302A	(+)-1.5KE180A/CA	171	189	1.0	154	1.0	6.1	246	0.108
1N6303A	(+)-1.5KE200A/CA	190	210	1.0	171	1.0	5.5	274	0.108
-	(+)-1.5KE220A/CA	209	231	1.0	185	1.0	4.6	328	0.108
-	1.5KE250A/CA	237	263	1.0	214	1.0	4.4	344	0.110
-	1.5KE300A/CA	285	315	1.0	256	1.0	3.6	414	0.110
-	1.5KE350A/CA	333	368	1.0	300	1.0	3.1	482	0.110
-	1.5KE400A/CA	380	420	1.0	342	1.0	2.7	548	0.110
-	1.5KE440A/CA	418	462	1.0	376	1.0	2.5	602	0.110
-	1.5KE480A/CA	456	504	1.0	408	1.0	2.28	658	0.110
-	1.5KE510A/CA	485	535	1.0	434	1.0	2.15	698	0.110
-	1.5KE540A/CA	513	567	1.0	459	1.0	2.03	740	0.110
-	1.5KE550A/CA	522.5	577.5	1.0	468	1.0	2.03	760	0.110

Notes

- (1) Pulse test: t_p ≤ 50 ms
- (2) Surge current waveform per fig. 3 and derate per fig. 2
- (3) All terms and symbols are consistent with ANSI/IEEE CA62.35
- (4) For bi-directional types with V_R 10 V and less the I_D limit is doubled
- (+) Underwriters laboratory recognition for the classification of protectors (QVGQ2) under the UL standard for safety 497B and file number E136766 for both uni-directional and bi-directional devices



1.5KE6.8A/CA thru 1.5KE550A/CA 1N6267A thru 1N6303A

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

PARAMETER	SYMBOL	VALUE	UNIT
Typical thermal resistance, junction to ambient	$R_{\theta JA}$	75	$^\circ\text{C}/\text{W}$
Typical thermal resistance, junction to lead	$R_{\theta JL}$	15.4	

ORDERING INFORMATION (Example)

PREFERRED PIN	UNIT WEIGHT (g)	BASE QUANTITY
1.5KE6.8A	0.968	1000

Notes

(1) AEC-Q101 qualified

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

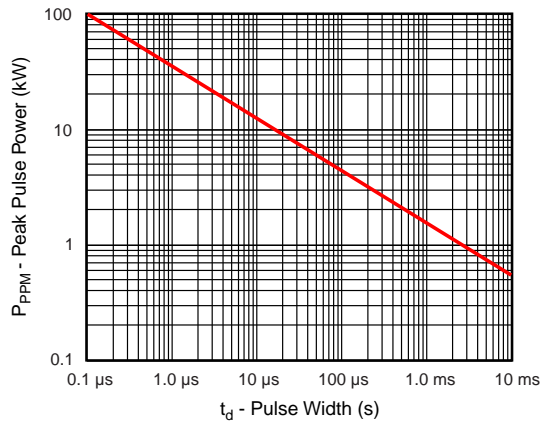


Fig. 1 - Peak Pulse Power Rating Curve

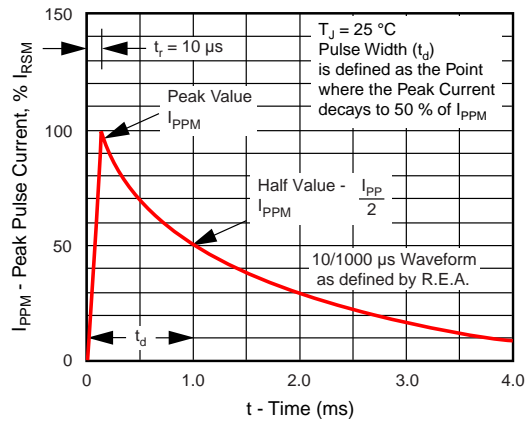


Fig. 3 - Pulse Waveform

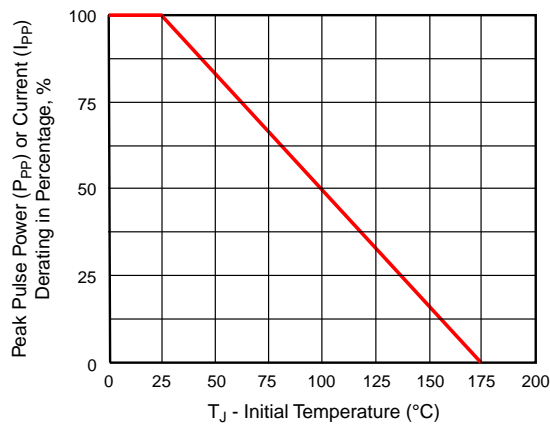


Fig. 2 - Pulse Power or Current vs. Initial Junction Temperature

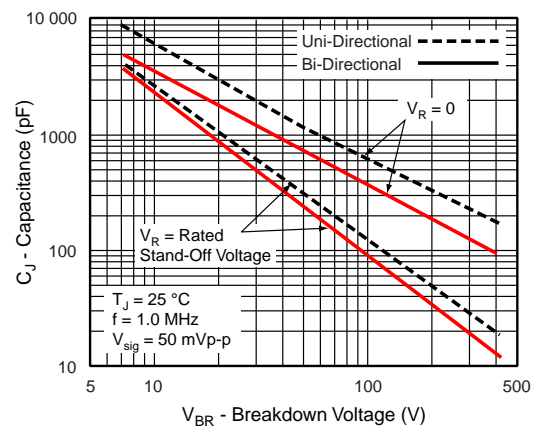


Fig. 4 - Typical Junction Capacitance

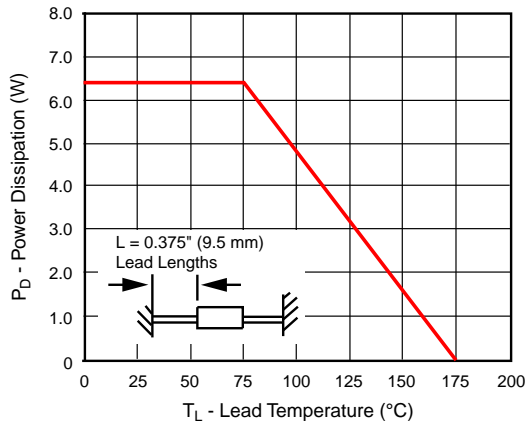


Fig. 5 - Power Derating Curve

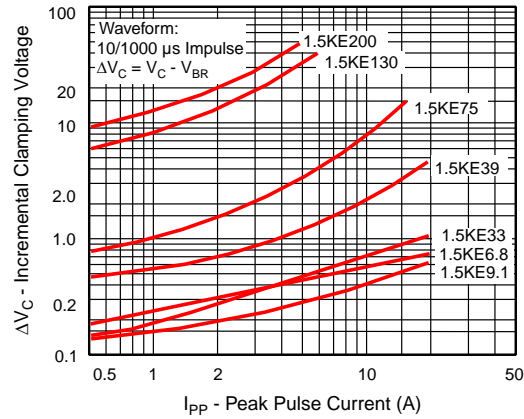


Fig. 8 - Incremental Clamping Voltage Curve (Uni-directional)

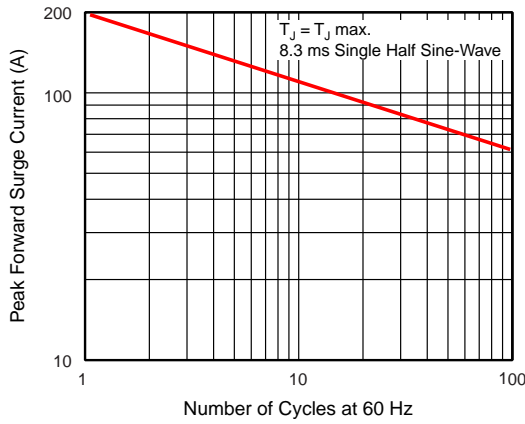


Fig. 6 - Maximum Non-Repetitive Forward Surge Current
Uni-Directional only

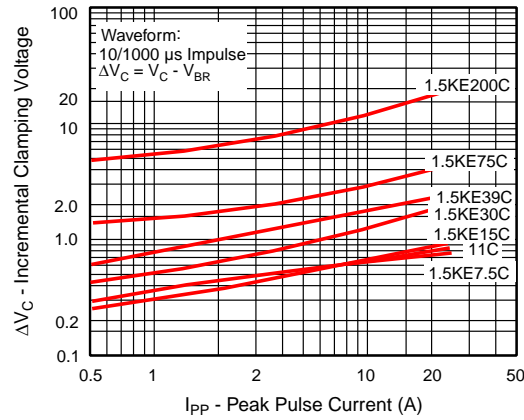


Fig. 9 - Incremental Clamping Voltage Curve (Bi-directional)

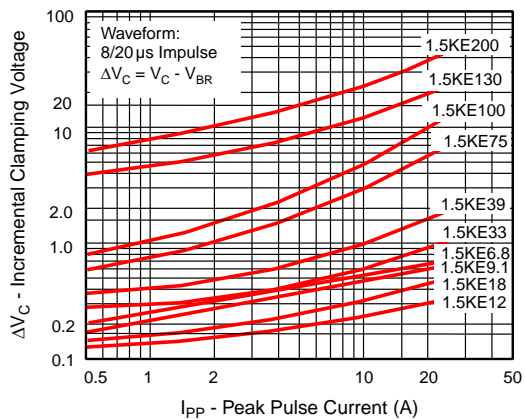


Fig. 7 - Incremental Clamping Voltage Curve (Uni-Directional)

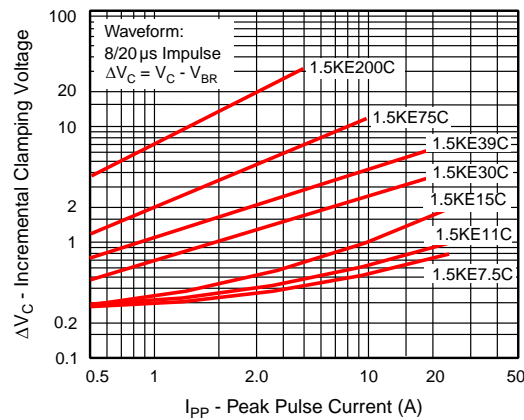


Fig. 10 - Incremental Clamping Voltage Curve (Bi-Directional)

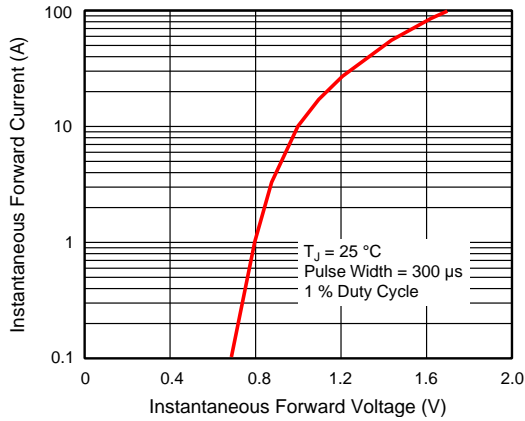


Fig. 11 - Instantaneous Forward Voltage Characteristics Curve

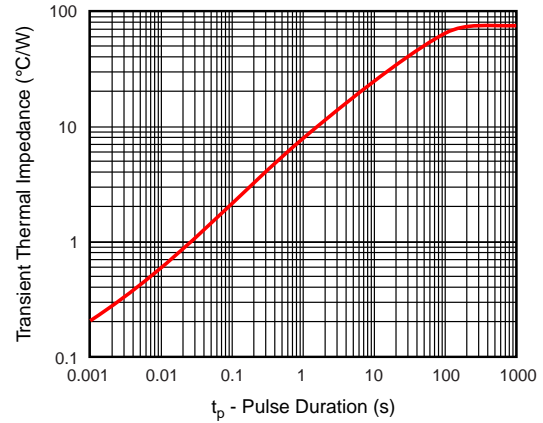


Fig. 12 - Typical Transient Thermal Impedance

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

