



产品承认书

Product Approval Sheet

编号 NO.	30KPA-A/0-T
日期 Date	2021.10.20

客户 (Customer)	
品名 (Product)	TVS
系列 (Series)	30KPA

料号 (Part No.)	规格描述 (Specification)	备注 (Remark)
贝特电子 Betterfuse		
客户 Customer		

环保符合性说明 (Instructions for HSF)

本产品符合: RoHS 2.0 HF REACH LEAD FREE 其他备注

供应商-贝特 Supplier-Better fuse		确认合格章 (Confirm qualified Signet)	客 户 (Customer)	零件承认章 (Approval Signet)
制 作 Make	陈文珊			
审 核 Check	高飞			
确 认 Approval	项伟荣			

联络 (Contact)

业务 (Sales)	电话 (Telephone)	手机 (Cellphone)	邮箱 (E-mail)

零件承认后敬请回签一份给我司留存, 或将承认后的封面回传至我司邮箱, 谢谢!

Please sign a copy of the parts for our company or fax the acknowledged cover to our E-mail. Thanks!



变更履历 Modified Information

序号 (No.)	日期 (Date)	修订内容 (Modified Content)	页码 (Page)	版本 (Edition)	制定人 (Prepared by)	审核人 (Checked by)
1	2021.10.20	Draft	/	A/0	Wenshan Chen	Fei Gao

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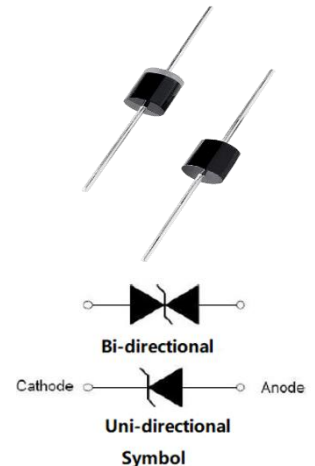


1. Description

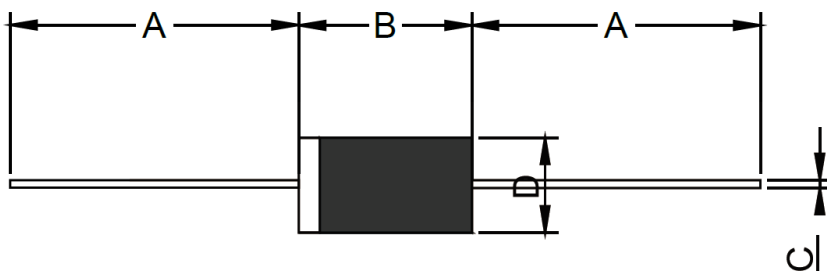
The 30KPA series of high current uni/bi-directional transient suppressors are designed for A.C. line protection and high power DC bus clamping applications. These devices offer uni/bi-directional port protection from 28 volts to 288 volts. They provide a clamping voltage lower than the avalanche voltage. Therefore, any voltage rise due to increased current conduction is contained to a minimum, providing the best possible protection level. They can also be connected in series and/or parallel to create very high capacity protection solutions.

2. Features

- ✧ Low zener impedance.
- ✧ Excellent clamping capability.
- ✧ JEDEC R-6/P-600 Molded Plastic.
- ✧ Repetition rate (duty cycle): 0.01%.
- ✧ Color band denoted cathode except bidirectional.
- ✧ High temperature soldering: 260°C/10s at terminals.
- ✧ 30000W Peak Pulse power capability at 10×1000µs waveform.
- ✧ Fast response time: typically less than 1.0ps from 0V to V_{BR} min.
- ✧ Glass passivated chip junction in R-6/P-600 package.
- ✧ High reliability application and automotive grade.
- ✧ Meets MSL level 1, per J-STD-020.



3. Size



Ref.	Dimensions			
	Inches		Millimeters	
	Min.	Max.	Min.	Max.
A	1.000	-	25.40	-
B	0.339	0.370	8.60	9.40
C	0.048	0.052	1.20	1.40
D	0.340	0.360	8.60	9.10

**4. Electrical Characteristics($T_A=25^{\circ}\text{C}$)**

Part Number		V_R	$I_R@V_R$	$V_{BR}@I_T$		I_T	$V_C@I_{PP}$	I_{PP}°
Uni-Polar	Bi-Polar	V	μA	Min(V)	Max(V)	mA	Max(V)	A
30KPA28A	30KPA28CA	28.0	5000	31.28	34.57	50	50.0	600.0
30KPA30A	30KPA30CA	30.0	5000	33.51	37.04	50	55.2	543.5
30KPA33A	30KPA33CA	33.0	5000	36.90	40.78	50	58.5	512.8
30KPA36A	30KPA36CA	36.0	5000	40.20	44.43	50	61.8	485.4
30KPA39A	30KPA39CA	39.0	2000	43.60	48.19	20	67.2	446.4
30KPA42A	30KPA42CA	42.0	1000	46.90	51.84	10	72.0	416.7
30KPA43A	30KPA43CA	43.0	1000	48.00	53.05	10	73.0	411.0
30KPA45A	30KPA45CA	45.0	250	50.30	55.59	5	77.4	387.6
30KPA48A	30KPA48CA	48.0	150	53.60	59.24	5	81.6	367.6
30KPA51A	30KPA51CA	51.0	50	57.00	63.00	5	86.4	347.2
30KPA54A	30KPA54CA	54.0	20	60.30	66.65	5	91.4	328.2
30KPA58A	30KPA58CA	58.0	20	64.80	71.62	5	92.4	324.7
30KPA60A	30KPA60CA	60.0	15	67.00	74.05	5	102.0	294.1
30KPA64A	30KPA64CA	64.0	10	71.50	79.03	5	104.0	288.5
30KPA66A	30KPA66CA	66.0	2	73.70	81.46	5	107.0	280.4
30KPA70A	30KPA70CA	70.0	2	78.20	86.43	5	109.0	275.2
30KPA71A	30KPA71CA	71.0	2	79.30	87.65	5	111.5	269.1
30KPA72A	30KPA72CA	72.0	2	80.40	88.86	5	114.0	263.2
30KPA75A	30KPA75CA	75.0	2	83.80	92.62	5	119.4	251.3
30KPA78A	30KPA78CA	78.0	2	87.10	96.27	5	129.0	232.6
30KPA84A	30KPA84CA	84.0	2	93.80	103.67	5	139.2	215.5
30KPA90A	30KPA90CA	90.0	2	100.50	111.08	5	146.4	204.9
30KPA96A	30KPA96CA	96.0	2	107.20	118.48	5	156.0	192.3
30KPA102A	30KPA102CA	102.0	2	113.90	125.89	5	165.6	181.2
30KPA108A	30KPA108CA	108.0	2	120.60	133.29	5	175.2	171.2
30KPA120A	30KPA120CA	120.0	2	134.00	148.11	5	194.4	154.3
30KPA132A	30KPA132CA	132.0	2	147.40	162.92	5	213.0	140.8
30KPA144A	30KPA144CA	144.0	2	160.80	177.73	5	223.2	134.4
30KPA150A	30KPA150CA	150.0	2	167.60	185.24	5	233.4	128.5



Part Number		VR	IR@VR	VBR@IT		IT	VC@IPP	IPP ^①
Uni-Polar	Bi-Polar	V	μA	Min(V)	Max(V)	mA	Max(V)	A
30KPA156A	30KPA156CA	156.0	2	174.30	192.65	5	245.0	122.4
30KPA160A	30KPA160CA	160.0	2	178.70	197.51	5	252.6	118.8
30KPA168A	30KPA168CA	168.0	2	187.70	207.46	5	272.4	110.1
30KPA170A	30KPA170CA	170.0	2	189.90	209.89	5	275.0	109.1
30KPA180A	30KPA180CA	180.0	2	201.10	222.27	5	290.4	103.3
30KPA198A	30KPA198CA	198.0	2	221.20	244.48	5	319.8	93.8
30KPA216A	30KPA216CA	216.0	2	241.30	266.70	5	348.6	86.1
30KPA240A	30KPA240CA	240.0	2	268.10	296.32	5	387.0	77.5
30KPA258A	30KPA258CA	258.0	2	288.20	318.54	5	414.4	72.4
30KPA260A	30KPA260CA	260.0	2	290.40	320.97	5	416.0	72.1
30KPA270A	30KPA270CA	270.0	2	301.60	333.35	5	436.2	68.8
30KPA280A	30KPA280CA	280.0	2	312.80	345.73	5	464.0	64.7
30KPA288A	30KPA288CA	288.0	2	321.70	355.56	5	469.9	63.8
30KPA400A	30KPA400CA	400.0	2	447.00	494.00	5	648.0	46.3

① Surge waveform: 10/1000μs

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

V_{BR}: Breakdown Voltage

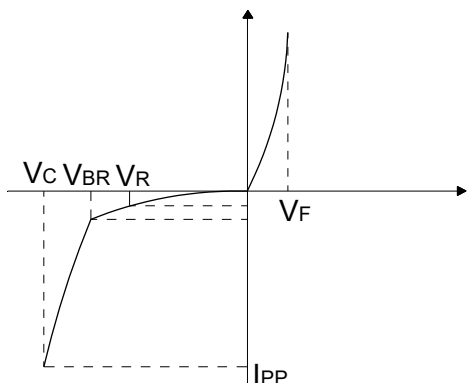
V_C: Clamping Voltage -- Peak voltage measured across the suppressor at a specified I_{pp}

I_R: Reverse Leakage Current



5. 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 characteristic
(Bi-directional)**

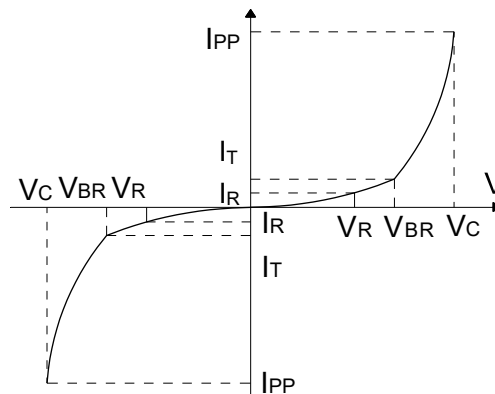


FIG.3: Pulse waveform

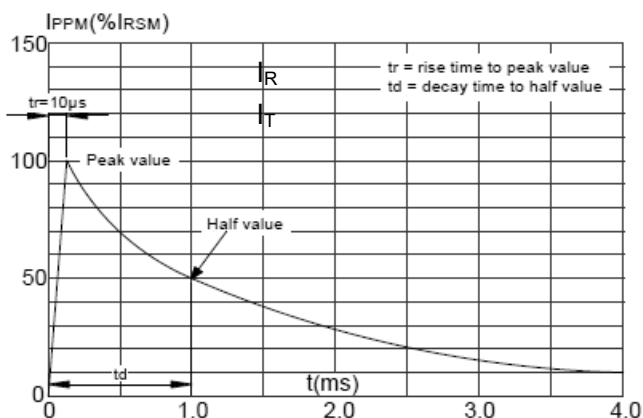
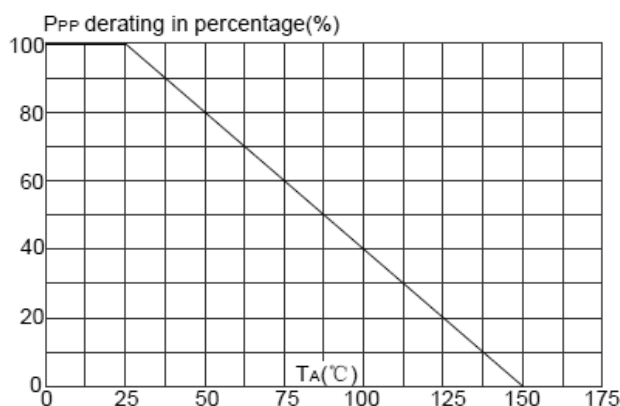


FIG.4: Pulse derating curve



6. Absolute Maximum Ratings($T_A=25^{\circ}\text{C}$, $RH=45\%-75\%$, unless otherwise noted)

Parameter	Symbol	Value	Unit
Operating junction and Storage temperature range	T_{STG}, T_J	-55 to +150	$^{\circ}\text{C}$
Peak pulse current of on 10/1000 μs waveform	I_{PP}	See next table	A
Steady state power dissipation at $T_L=75^{\circ}\text{C}$	$P_{M(AV)}$	8	W
Peak pulse power dissipation on 10/1000 μs waveform	P_{PP}	30000	W
Peak forward surge current, 8.3ms single half sine-wave	I_{FSM}	400	A

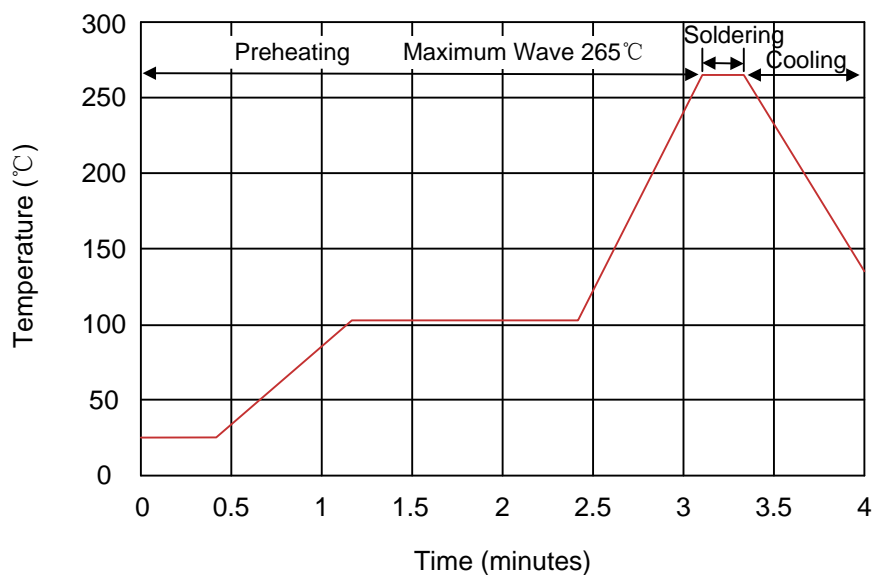


7. Package Information

Part No.	Case Type	Quantity	Packing Option
30KPAXXCA/A	R-6/P-600	300	Box

8.Soldering Parameters

Wave Soldering



Item	Conditions
Peak Temperature	265°C
Dipping Time	10 seconds
Soldering	1 time