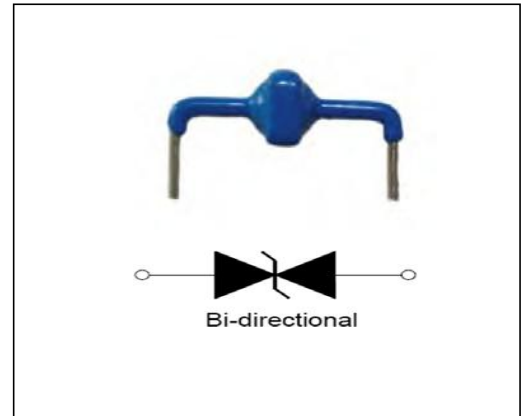


DESCRIPTION:

TVS diodes can be used in a wide range of applications which like consumer electronic products, automotive industries, munitions, telecommunications, aerospace industries, and intelligent control systems.

FEATURES:

- ✧ Glass passivated or planar junction
- ✧ Lower clamping voltage.
- ✧ High temperature soldering: 260°C/10s at terminals.
- ✧ Fast response time: typically less than 1.0ps from 0V to VBR min.
- ✧ High reliability application and automotive grade (AEC-Q101 qualified).
- ✧ ISO16750-2 P5A 12V system (90V/4Ω/200ms 10c)
- ✧ ISO16750-2 P5A 24V system (151V/8Ω/200ms 10c)


Absolute Maximum Ratings (TA=25°C, RH=45%-75%, unless otherwise noted)

Parameter	Symbol	Value	Unit
Peak Current Rating per 8/20 μs IEC 61000-4-5	I_{PP}	3	KA
Operating Junction Temperature Range	T_J	-55 to +150	°C
Operating Storage Temperature Range	T_S	-55 to +150	°C

ELECTRICAL CHARACTERISTICS (TA=25°C)

Part Number	V _R	V _{BR} @I _T		I _T	I _R @V _R	V _c @I _{pp}	I _{pp} ^①
Bi-Polar	V	Min (V)	Max (V)	μA	μA	V	A
AK3-012C	12	14	15	10	20	24	3000
AK3-015C	15	17	19	10	20	28	3000
AK3-020C	20	22	24	10	20	50	3000
AK3-025C	25	28	30	10	20	60	3000
AK3-030C	30	33	37	10	20	80	3000
AK3-042C	42	47	51	10	20	105	3000
AK3-058C	58	64	70	10	20	110	3000
AK3-066C	66	72	80	10	20	120	3000
AK3-076C	76	85	95	10	20	140	3000
AK3-100C	100	110	122	10	20	165	3000
AK3-133C	133	147	162	10	20	220	3000
AK3-170C	170	180	205	10	20	260	3000
AK3-190C	190	200	245	10	20	290	3000
AK3-240C	240	250	285	10	20	340	3000
AK3-275C	275	300	335	10	20	435	3000
AK3-300C	300	330	366	10	20	470	3000
AK3-380C	380	401	443	10	20	520	3000
AK3-430C	430	440	490	10	20	625	3000

Surge waveform: 8/20 μ s

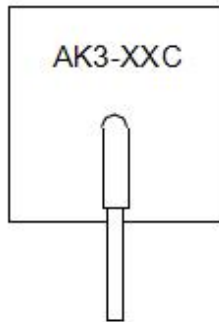
V_R : Stand-off Voltage -- Maximum voltage that can be applied

V_{BR} : Breakdown Voltage

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

I_R : Reverse Leakage Current

ORDERING INFORMATION



AK	3	-	XX	C
(1)	(2)		(3)	(4)

- (1) AK series
- (2) $I_{PP}=3KA$
- (3) Reverse stand-off voltage
- (4) Bi-directional

Ratings AND V - I characteristic CURVES ($T_A=25^\circ C$, unless otherwise noted)

FIG.1: V-I Curve Characteristics (Bi-directional)

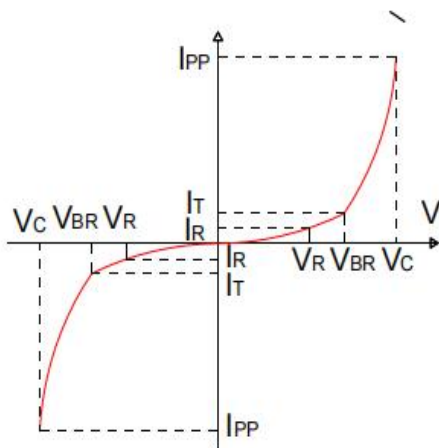


FIG.2: Typical V_{BR} Vs Junction Temperature

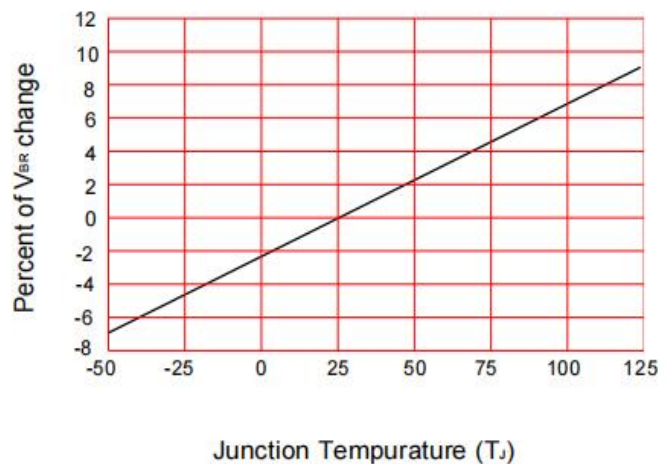
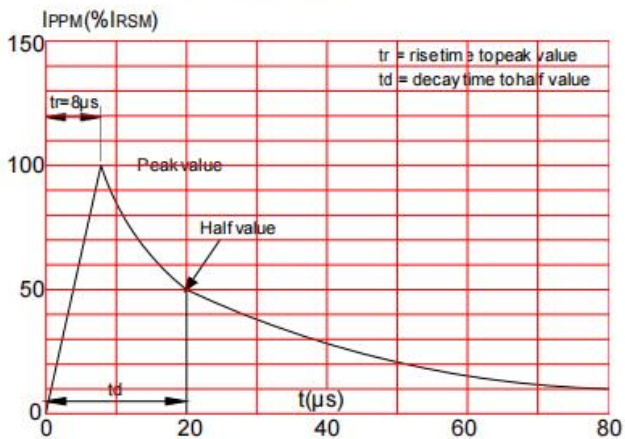
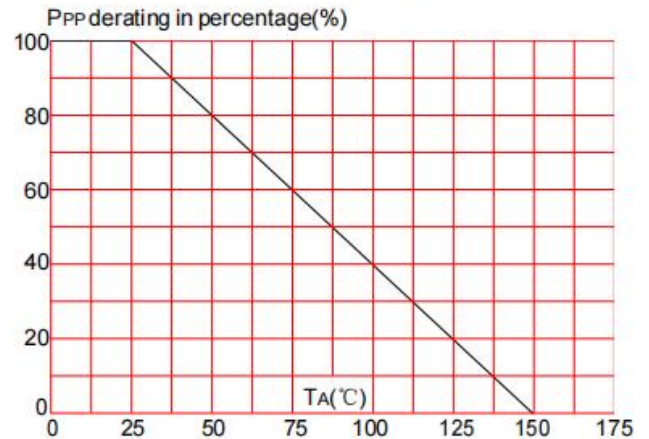
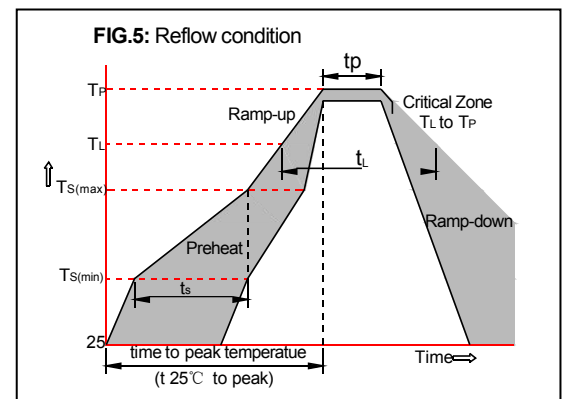
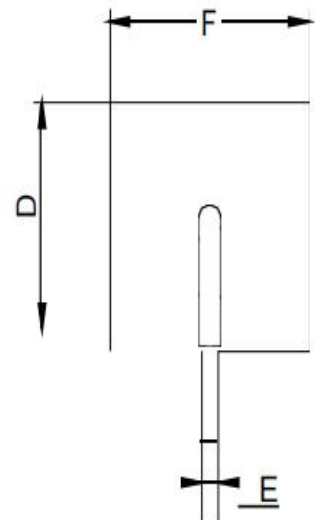
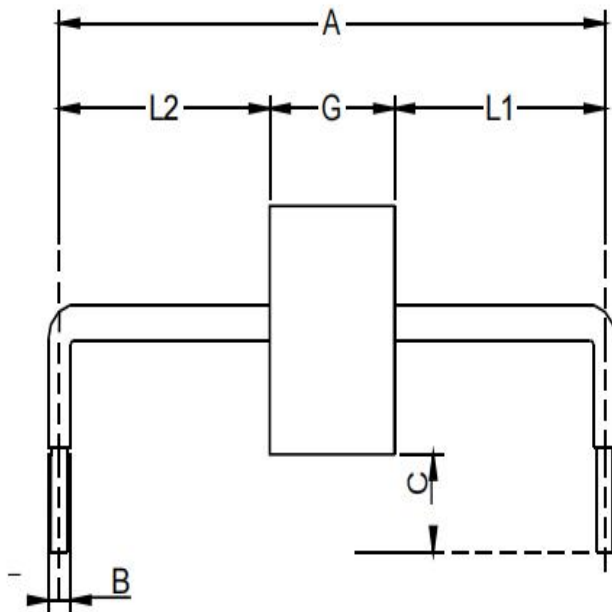


FIG.3: Pulse waveform

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) (t_s)	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


Size A			
Symbol		Inches	Millimeter
A		0.951±0.040	24.15±1.00
B		0.094±0.024	2.40±0.60
C		0.236±0.039	6.00±1.00
D		0.40 max	10.0max
E		0.050±0.002	1.27±0.05
F		0.40 max	10.0max
G	012C to 025C	0.20max	5.0max
	030C to 042C	0.24max	6.0max
	058C to 076C	0.32max	8.0max
	100C to 133C	0.40max	10.0max
	170C to 190C	0.48max	12.0max
	240C to 300C	0.64max	16.0max
	380C to 430C	0.80max	20.0max
L1/L2		L1=L2 tolerance ±0.047inch (±1.20 mm)	

Size B			
Symbol		Inches	Millimeter
A		0.630±0.020	16.00±0.50
B		0.094±0.024	2.40±0.60
C		0.236±0.039	6.00±1.00
D		0.40 max	10.0max
E		0.050±0.002	1.27±0.05
F		0.40 max	10.0max
G	012C to 025C	0.20max	5.0max
	030C to 042C	0.24max	6.0max
	058C to 076C	0.32max	8.0max
	100C to 133C	0.40max	10.0max
	170C to 190C	None	None
	240C to 300C	None	None
	380C to 430C	None	None
L1/L2		L1=L2 tolerance ±0.047inch (±1.20 mm)	

Part Number	Case Type	Quantity	Packing Option
AK3-XXC	AKS	84pcs	Box