Description

The AK15 series of high power TVS diode is specially designed for meeting severe surge test environment of both AC and DC line protection applications. The AK15 features a very fast response and ultra low clamping characteristics as compared to MOVs (Metal Oxide Varistors). These AK components can be connected in series and / or parallel to create a very high surge current protection solution.

Features

- Very low clamping voltage
- Ultra compact: less than one-tenth the size of traditional discrete solutions
- Sharp breakdown voltage
- Low slope resistance
- Bi-directional
- Foldbak technology for superior clamping factor
- Symmetric in leads width for easier soldering during assembly
- IEC-61000-4-2 ESD 15kV(Air), 8kV (Contact)
- ESD protection of data lines in accordance with IEC 61000-4-2
- EFT protection of data lines in accordance with IEC 61000-4-4
- Halogen-free
- RoHS compliant
- Glass passivated junction
- Pb-free E4 means 2nd level interconnect is Pb-free and the terminal finish material is silver
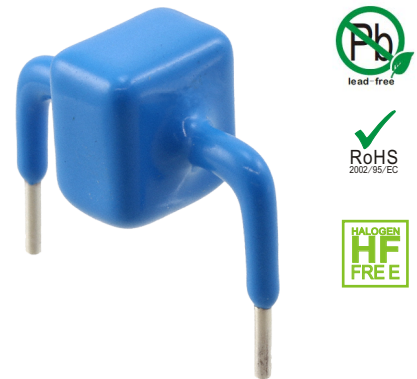
Functional Diaram

Maximum Ratings and Thermal Characteristics

(TA=25℃ unless otherwise noted)

Parameter	Symbols	Value	Unit
Operating StorageTemperature Range	T_{STG}	-55 to +150	℃
Operating JunctionTemperature Range	T_J	-55 to +125	℃
Current Rating1	I_{PP}	15	kA

Note:1) Rated IPP measured with 8/20μS pulse.

Electrical Characteristics

Part Numbers	Part Marking	Standoff Voltage (VSO) Volts	Max. Reverse Leakage (I_R)@VSO (uA)	Typical I_R@85℃ (uA)	Reverse Breakdown Voltage(V_{BR})@I_T		Test Current I_T mA	Max. clamping Voltage VCL@I_{PP} Peak Pulse Current(I_{PP})(Note 1)			Max.Temp Coefficient OF V_{BR} %/℃	Max. Capacitance 0 Bias 10KHZ nF
					Min Volts	Max Volts		VCL Volts	I_{PP} (8/20µS) (A)	I_{PP} (10/350µS) (A)		
AK15 - 058C	15 - 058C	58	10	15	64	70	10	110	15,000	2,000	0.1	12
AK15 - 066C	15 - 066C	66	10	15	72	80	10	120	15,000	2,000	0.1	10
AK15 - 076C	15 - 076C	76	10	15	85	95	10	150	15,000	2,000	0.1	10
AK15 - 190C	15 - 190C	190	10	15	200	245	10	290	15,000	1,500	0.1	3.7

Physical Specifications

Weight	Contact manufacturer
Case	Epoxy encapsulated
Terminal	Silver plated leads, solderable per MIL-STD-750 Method 2026

Flow/Wave Soldering (Solder Dipping)

Peak Temperature :	265ºC
Dipping Time :	10 seconds
Soldering :	1 time

Wave Solder Profile

Figure 1- Non Lead-free Profile
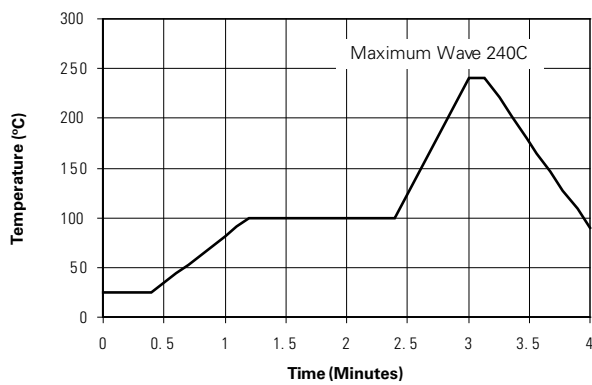
Figure 2- Lead-free Profile

Specifications are subject to change without notice.
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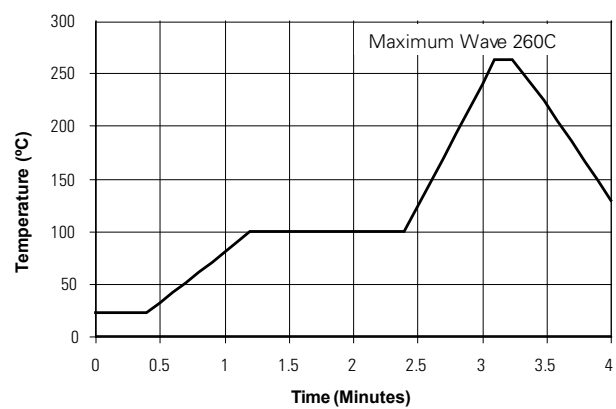
Ratings and Characteristic Curves (TA = 25°C unless otherwise noted)
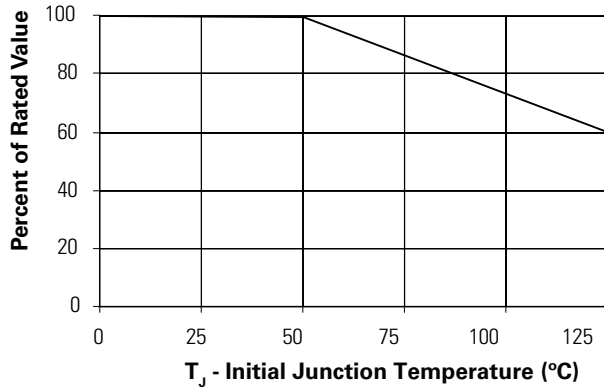
Figure 3- Peak Power Derating
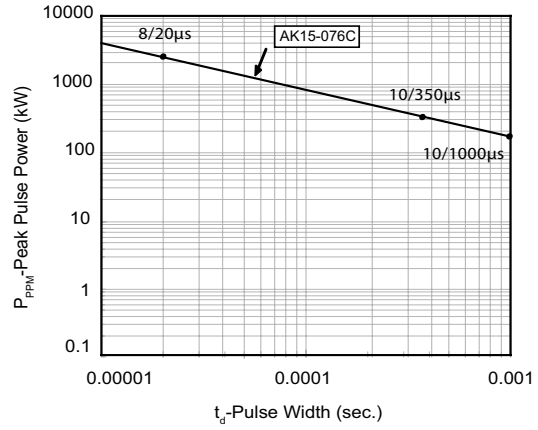

Figure 4 - Typical Peak Pulse Power Rating Curve

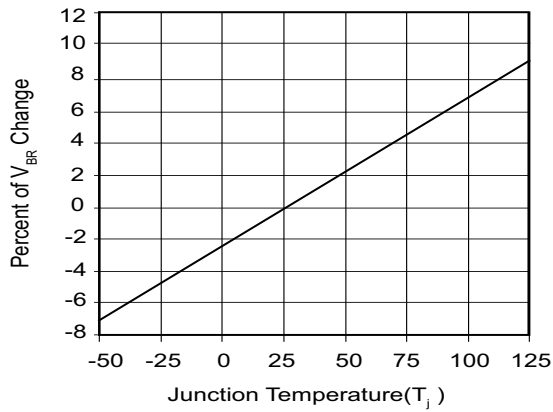### Figure 5 - Typical V_{BR} Vs Junction Temperature
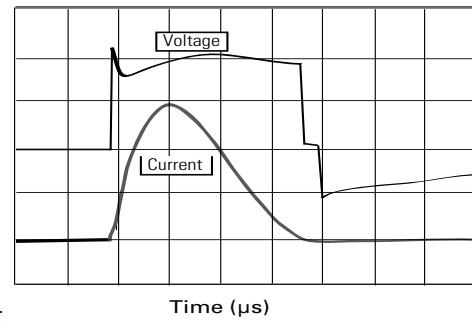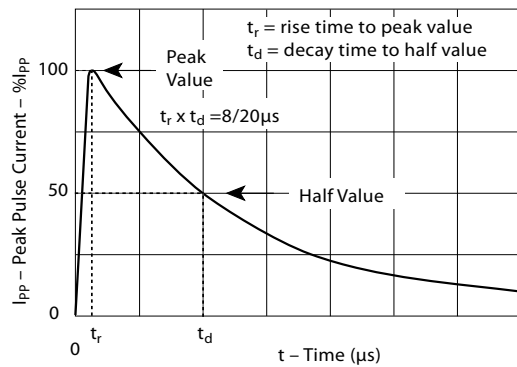

Figure 6 -Surge Response (8/20 Surge current waveform)

Note:

The power dissipation causes a change in avalanche voltage during the surge and the avalanche voltage eventually returns to the original value when the transient has passed.

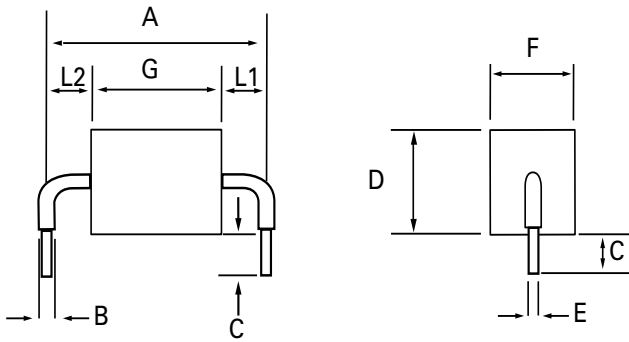### Figure 7 - Pulse Waveform

Note:

The power dissipation causes a change in avalanche voltage during the surge and the avalanche voltage eventually returns to the original value when the transient has passed.
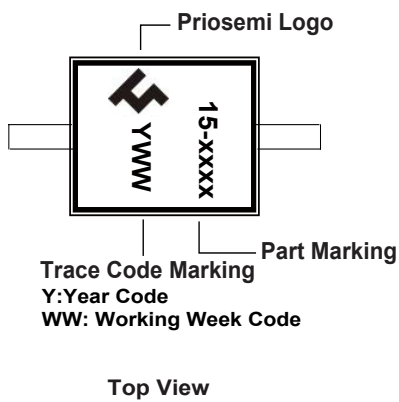
Dimensions

Dimensions	Inches	Millimeters
A	0.95±0.03	24.15±0.80
B	0.095±0.024	2.40±0.60
C	0.236±0.04	6.00±1.00
D	0.630±0.055	16.0±1.40
E	0.050±0.002	1.27±0.05
F	0.571±0.055	14.50±1.40
G - 058C	0.292±0.047	7.41±1.20
G - 066C/076C	0.351±0.047	8.91±1.20
G - 190C	0.362±0.047	8.20±1.20
L1/L2	L1= L2 tolerance±0.04 inch (1.0 mm)	

Part Marking System

Priosemi Logo

15-xxxx
YWW

Part Marking

Trace Code Marking
Y:Year Code
WW: Working Week Code

Top View

Part Marking System

AK15 **XXXX**

Series Type

Stand Off Voltage

(Please Refer to Electrical
Characteristics Chart)
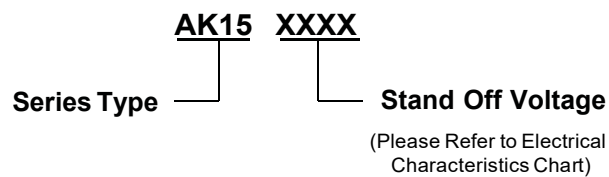
Packing Options

Part Number	Component Package	Quantity	Packaging Option
AK15-XXXX	AK Package	56pcs/Box	Bulk