



## Transient Voltage Suppressors family

Transient Voltage Suppressor (TVS) will effectively limit the transient voltage to a safe level. The YSN5Wxxx series has been designed to protect sensitive automotive circuits against surges defined in ISO7637-2/ISO16750-2 and against electrostatic discharges according ISO10605. The YSN5Wxxx series device could compatible with high-end circuits where low leakage current and high junction temperature are required to provide reliability and stability over time.

## Features

- High current capability
- Low Forward Voltage Drop
- Low reverse current
- Low thermal resistance
- Excellent high temperature stability
- Low power loss and high efficiency
- High forward surge capability
- Meets ISO7637-2 surge specification
- Meets ISO16750-2 surge specification
- Meets MSL level 1, per J-STD-020, LF maximum peak of 245 °C
- AEC-Q101 qualified

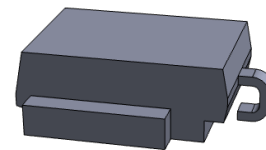
## Application

- High peak power
- High-temperature
- Clamping diode
- Load switching and lighting

## Mechanical Data

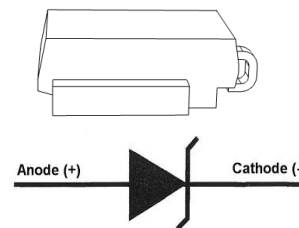
- **Case:** DO-218 outline plastic package
- **Terminals:** Matte tin plated, solderable per MIL-STD-750, Method 2026, J-STD-002 and JESD 22-B102
- Molding Compound Flammability Rating:UL94-0
- HE3 suffix meets JESD 201 class 2 whisker test
- **Polarity:** Heatsink is anode

## DO-218

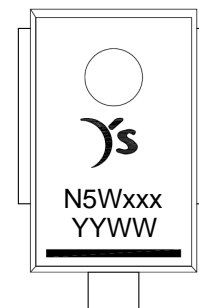


## Pin Information

Polarity: Heatsink is anode



## Marking Information



## Primary Characteristics

VWM	10 V to 36 V
VBR	11.1 V to 44.2 V
PPPM (10 x 1000 uS)	3600 W
PPPM (10 x 10000 uS)	2800 W
Pd	5 W
IFSM	500 A
Polarity	Uni-directional
Diode variation	Single



# Transient Voltage Suppressors

## YSN5W Series

YEA SHIN TECHNOLOGY CO., LTD

5 Watters TVS/Power Zener Diode

### Maximum Ratings (TA = 25 °C unless otherwise noted)

Parameter	Symbol	Value	Units
Peak pulse power dissipation	PPPM	3600	W
		2800	
Power dissipation on infinite heatsink at TC = 25 °C	PD	5.0	W
Peak forward surge current 8.3 ms single half sine-wave	IFSM	500	A
Operating junction and storage temperature range	TJ, TSTG	-55 to +175	°C

### Electrical Characteristics (TA = 25 °C unless otherwise noted)

Part Number	Breakdown Voltage VBR (V)		Test Current IT (mA)	Stand-OFF Voltage VWM (V)	Maximum Reverse Leakage at VWM ID (uA)	Maximum Leakage at VWM TJ = 175 °C ID (uA)	Max. Peak Pulse Current at 10/1000 us Waveform (A)	Maximum Clamping Voltage at IPPM Vc (V)
	Min.	Max.						
YSN5W10	11.1	13.6	5.0	10.0	15	250	191	18.8
YSN5W10A		12.3	5.0	10.0	15	250	211	17.0
YSN5W11	12.2	14.9	5.0	11.0	10	150	179	20.1
YSN5W11A		13.5	5.0	11.0	10	150	198	18.2
YSN5W12	13.3	16.3	5.0	12.0	10	150	164	22.0
YSN5W12A		14.7	5.0	12.0	10	150	181	19.9
YSN5W13	14.4	17.6	5.0	13.0	10	150	151	23.8
YSN5W13A		15.9	5.0	13.0	10	150	167	21.5
YSN5W14	15.6	19.1	5.0	14.0	10	150	140	25.8
YSN5W14A		17.2	5.0	14.0	10	150	155	23.2
YSN5W15	16.7	20.4	5.0	15.0	10	150	134	26.9
YSN5W15A		18.5	5.0	15.0	10	150	148	24.4
YSN5W16	17.8	21.8	5.0	16.0	10	150	125	28.8
YSN5W16A		19.7	5.0	16.0	10	150	138	26.0
YSN5W17	18.9	23.1	5.0	17.0	10	150	118	30.5
YSN5W17A		20.9	5.0	17.0	10	150	130	27.6
YSN5W18	20.0	24.4	5.0	18.0	10	150	112	32.2
YSN5W18A		22.1	5.0	18.0	10	150	123	29.2
YSN5W20	22.2	27.1	5.0	20.0	10	150	101	35.8
YSN5W20A		24.5	5.0	20.0	10	150	111	32.4
YSN5W22	24.4	29.8	5.0	22.0	10	150	91	39.4
YSN5W22A		26.9	5.0	22.0	10	150	101	35.5
YSN5W24	26.7	32.6	5.0	24.0	10	150	84	43.0
YSN5W24A		29.5	5.0	24.0	10	150	93	38.9
YSN5W26	28.9	35.3	5.0	26.0	10	150	77	46.6
YSN5W26A		31.9	5.0	26.0	10	150	86	42.1
YSN5W28	31.1	38.0	5.0	28.0	10	150	72	50.1
YSN5W28A		34.4	5.0	28.0	10	150	79	45.4
YSN5W30	33.3	40.7	5.0	30.0	10	150	67	53.5
YSN5W30A		36.8	5.0	30.0	10	150	74	48.4
YSN5W33	36.7	44.9	5.0	33.0	10	150	61	59.0
YSN5W33A		40.6	5.0	33.0	10	150	68	53.3
YSN5W36	40.0	48.9	5.0	36.0	10	150	56	64.3
YSN5W36A		44.2	5.0	36.0	10	150	62	58.1

**Note:** For all types maximum VF = 1.8 V at IF = 100 A measured on 8.3 ms single half sine-wave or equivalent square wave, duty cycle = 4 pulses per minute maximum

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

Parameter	Symbol	Value	Units
Typical thermal resistance, junction to case	$R_{\theta JC}$	1.1	$^{\circ}\text{C/W}$

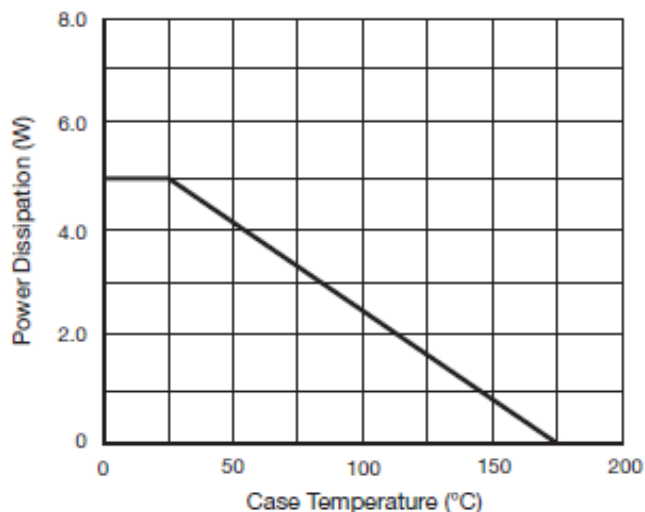
**Typical Performance Characteristics**

Fig. 1 - Power Derating Curve

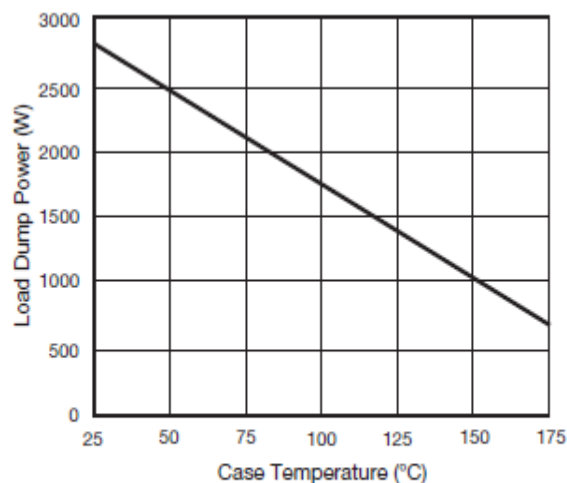
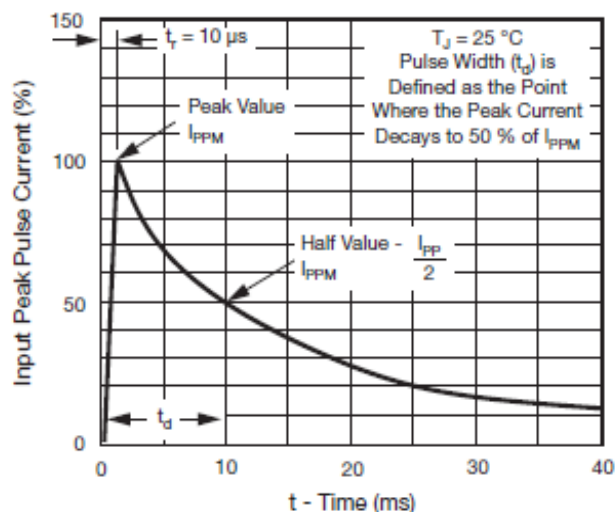
Fig. 2 - Load Dump Power Characteristics  
(10 ms Exponential Waveform)

Fig. 3 - Pulse Waveform

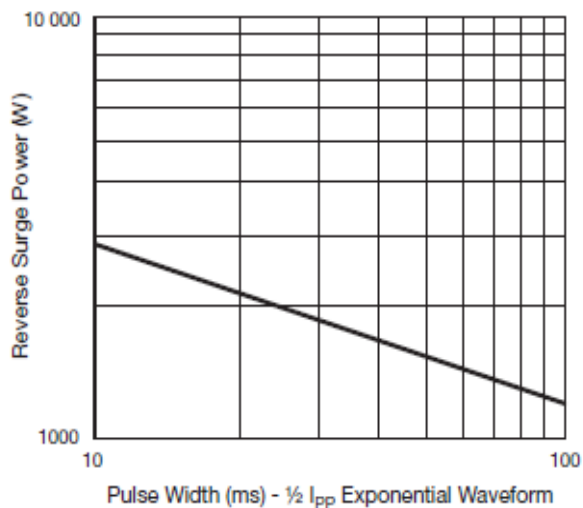


Fig. 4 - Reverse Power Capability

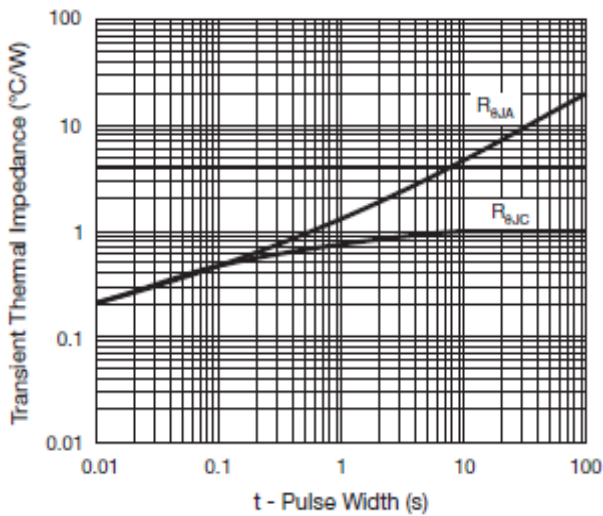


Fig. 5 - Typical Transient Thermal Impedance

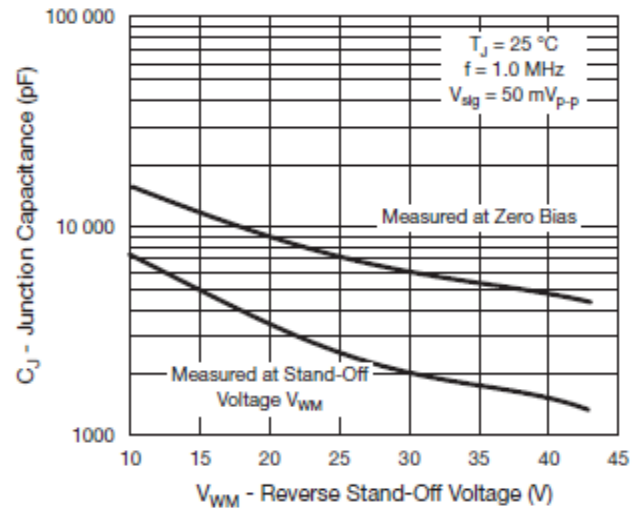


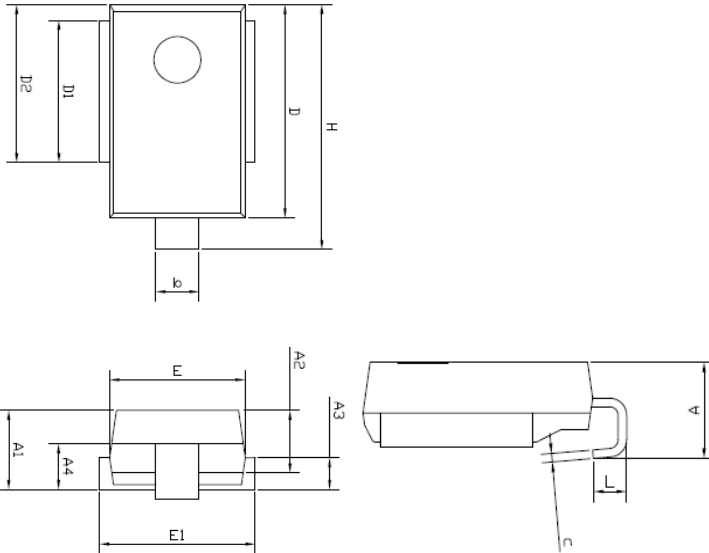
Fig. 6 - Typical Junction Capacitance

## Phisical Dimensions

### DO-218

NOTE :

1. PACKAGE BODY SIZES EXCLUDE MOLD FLASH PROTRUSIONS OR GATE BURRS.
2. COPLANARITY : 0.1mm
3. DIMENSION L IS MEASURED IN GAUGE PLANE.



SYMBOLS	DIMENSIONS IN MILLIMETERS		
	MIN	NOM	MAX
A	4.70	-	5.70
A1	4.70	5.00	5.25
A2	3.45	3.95	4.25
A3	1.70	2.00	2.50
A4	2.65	3.10	3.55
b	2.30	-	3.00
c	0.45	-	0.90
D	13.20	13.50	13.80
D1	8.70	9.00	9.30
D2	9.70	10.00	10.30
E	8.20	8.50	8.80
E1	9.50	-	10.00
H	15.00	15.50	16.00
L	1.50	2.00	2.50

## Foot Print Recommendation (mm)

