



## Transient Voltage Suppressors family

Transient Voltage Suppressor (TVS) will effectively limit the transient voltage to a safe level. The YSM6Wxxx series has been designed to protect sensitive automotive circuits against surges defined in ISO7637-2/ISO16750-2 and against electrostatic discharges according ISO10605. The YSM6Wxxx 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

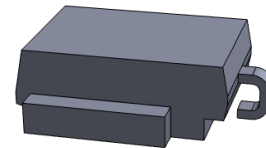
## Application

- 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

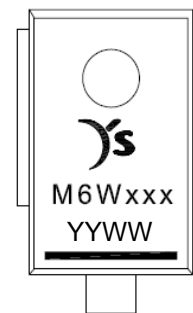


## Pin Information

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)	4600 W
PPPM (10 x 10000 uS)	3600 W
PD	6 W
IFSM	600 A
Polarity	Uni-directional
Diode variation	Single



# Transient Voltage Suppressors

## YSM6W Series

6 Watters TVS/Power Zener Diode

YEA SHIN TECHNOLOGY CO., LTD

Maximum Ratings (TA = 25 °C unless otherwise noted)			
Parameter	Symbol	Value	Units
Peak pulse power dissipation	PPPM	10/1000 $\mu$ s waveform	4600
		10/10 000 $\mu$ s waveform	3600
Power dissipation on infinite heatsink at TC = 25 °C	PD	6.0	W
Peak forward surge current 8.3 ms single half sine-wave	IFSM	600	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.						
YSM6W10	11.1	13.6	5.0	10.0	15	250	245	18.8
YSM6W10A		12.3	5.0	10.0	15	250	271	17.0
YSM6W11	12.2	14.9	5.0	11.0	10	150	229	20.1
YSM6W11A		13.5	5.0	11.0	10	150	253	18.2
YSM6W12	13.3	16.3	5.0	12.0	10	150	209	22.0
YSM6W12A		14.7	5.0	12.0	10	150	231	19.9
YSM6W13	14.4	17.6	5.0	13.0	10	150	193	23.8
YSM6W13A		15.9	5.0	13.0	10	150	214	21.5
YSM6W14	15.6	19.1	5.0	14.0	10	150	178	25.8
YSM6W14A		17.2	5.0	14.0	10	150	198	23.2
YSM6W15	16.7	20.4	5.0	15.0	10	150	171	26.9
YSM6W15A		18.5	5.0	15.0	10	150	189	24.4
YSM6W16	17.8	21.8	5.0	16.0	10	150	160	28.8
YSM6W16A		19.7	5.0	16.0	10	150	177	26.0
YSM6W17	18.9	23.1	5.0	17.0	10	150	151	30.5
YSM6W17A		20.9	5.0	17.0	10	150	167	27.6
YSM6W18	20.0	24.4	5.0	18.0	10	150	143	32.2
YSM6W18A		22.1	5.0	18.0	10	150	158	29.2
YSM6W20	22.2	27.1	5.0	20.0	10	150	128	35.8
YSM6W20A		24.5	5.0	20.0	10	150	142	32.4
YSM6W22	24.4	29.8	5.0	22.0	10	150	117	39.4
YSM6W22A		26.9	5.0	22.0	10	150	130	35.5
YSM6W24	26.7	32.6	5.0	24.0	10	150	107	43.0
YSM6W24A		29.5	5.0	24.0	10	150	118	38.9
YSM6W26	28.9	35.3	5.0	26.0	10	150	99	46.6
YSM6W26A		31.9	5.0	26.0	10	150	109	42.1
YSM6W28	31.1	38.0	5.0	28.0	10	150	92	50.1
YSM6W28A		34.4	5.0	28.0	10	150	101	45.4
YSM6W30	33.3	40.7	5.0	30.0	10	150	86	53.5
YSM6W30A		36.8	5.0	30.0	10	150	95	48.4
YSM6W33	36.7	44.9	5.0	33.0	10	150	78	59.0
YSM6W33A		40.6	5.0	33.0	10	150	86	53.3
YSM6W36	40.0	48.9	5.0	36.0	10	150	72	64.3
YSM6W36A		44.2	5.0	36.0	10	150	79	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** (TA = 25 °C unless otherwise noted)

Parameter	Symbol	Value	Units
Typical thermal resistance, junction to case	$R_{\theta JC}$	1.0	°C/W

**Typical Performance Characteristics**

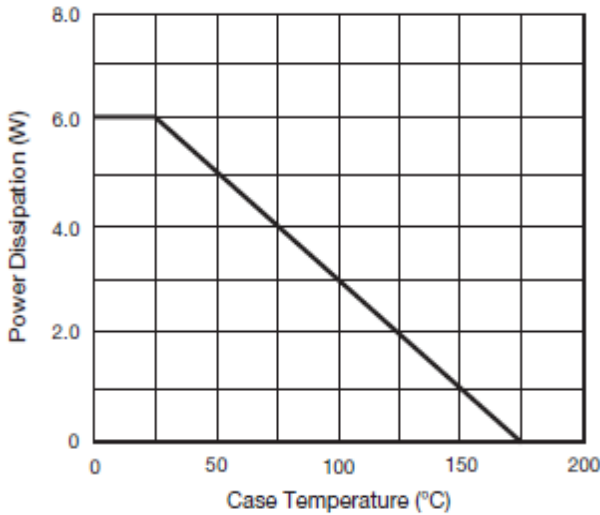


Fig. 1 - Power Derating Curve

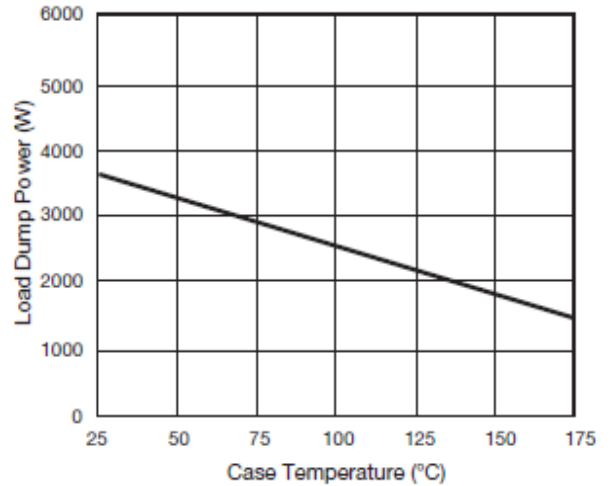


Fig. 2 - Load Dump Power Characteristics (10 ms Exponential Waveform)

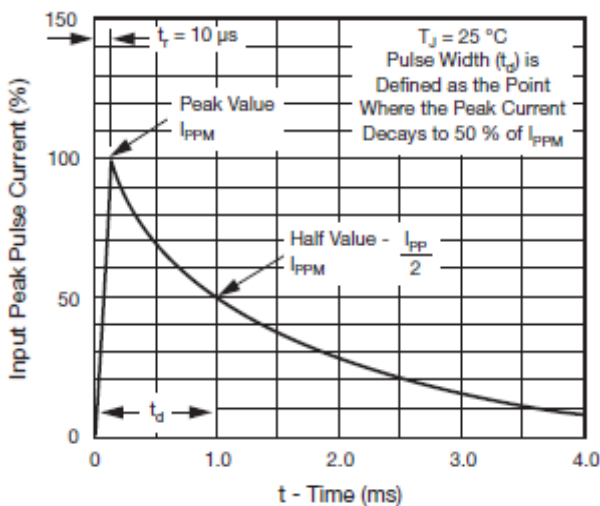


Fig. 3 - Pulse Waveform

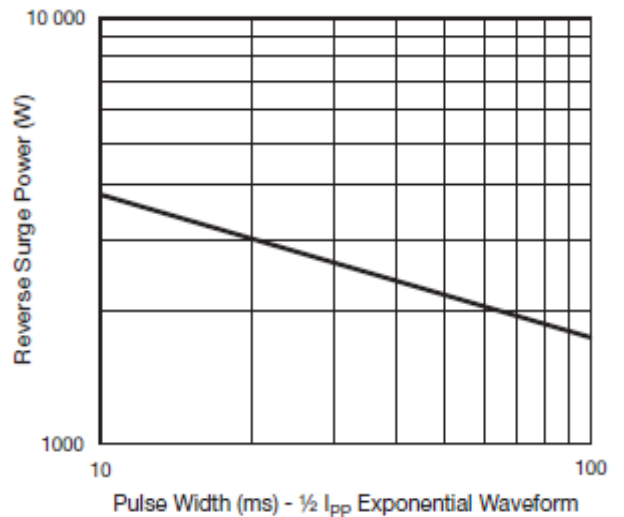


Fig. 4 - Reverse Power Capability

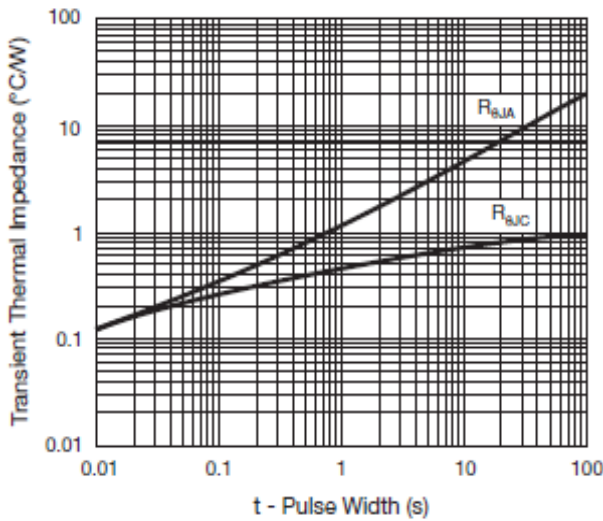


Fig. 5 - Typical Transient Thermal Impedance

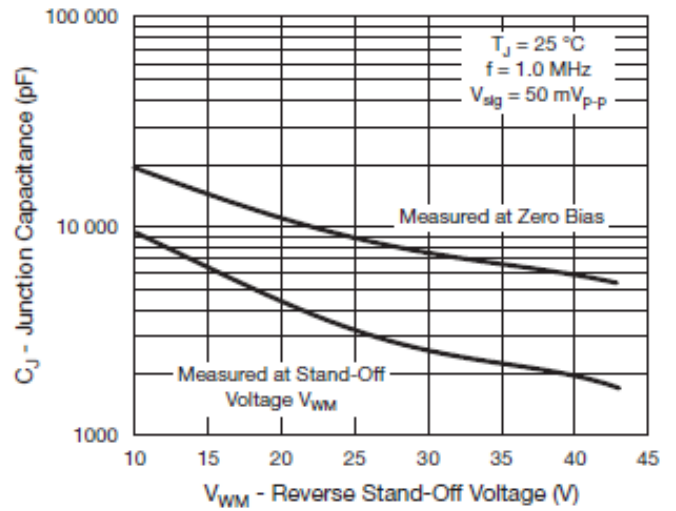


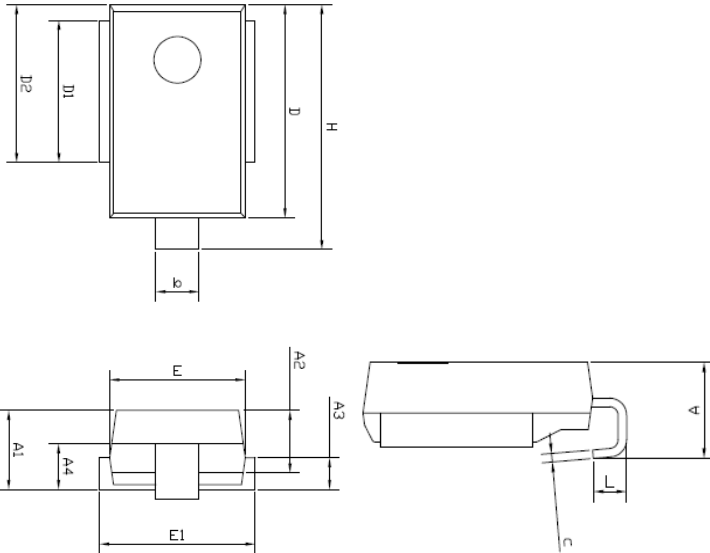
Fig. 6 - Typical Junction Capacitance

Physical 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)

