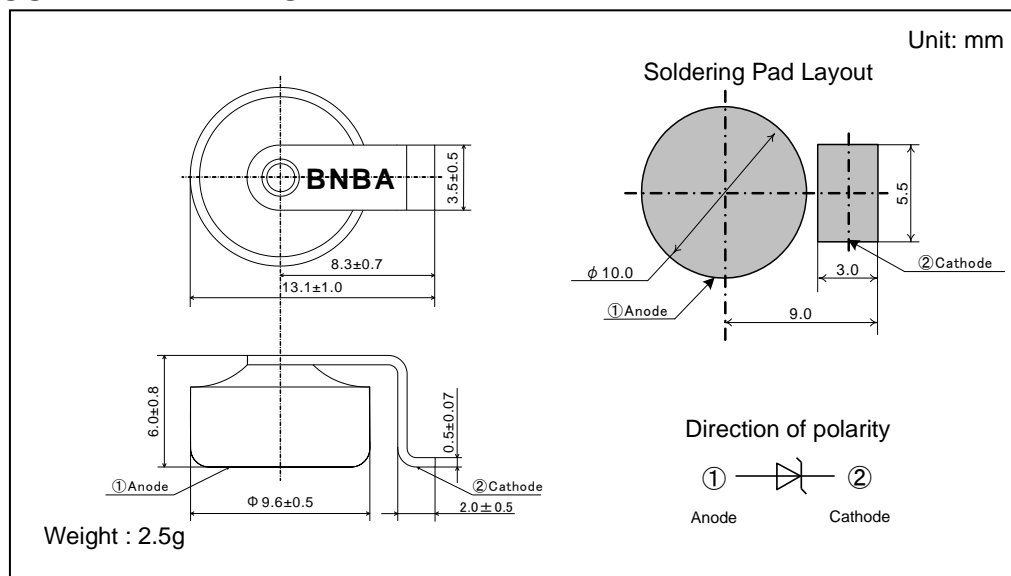


ZSH8MD40

FEATURES

- 8W class
- High surge capability for Load Dump Surge
- Meets ISO7637-2 surge specification
(Varied by test condition)
- Available for automotive use
- AEC-Q101 qualified
- RoHS compliant

OUTLINE DRAWING



ABSOLUTE MAXIMUM RATINGS

Items	Symbols	Units	Ratings
Non-Repetitive Peak Reverse One-Cycle Dissipation	P_{RSM}	W	5,700 (Rectangular pulse $t=1\text{ms}$ $T_j=25^\circ\text{C}$ start)
Non-Repetitive Peak Reverse Surge Current	I_{RSM}	A	80 (Exponential waveform. See Fig.1, $T_j=25^\circ\text{C}$ start)
DC Reverse Voltage	V_{DC}	V	32
Operating Junction Temperature	T_j	$^\circ\text{C}$	-40 ~ +150
Storage Temperature	T_{stg}	$^\circ\text{C}$	-40 ~ +150

CHARACTERISTICS ($T_L=25^\circ\text{C}$)

Items	Symbols	Units	Min.	Typ.	Max.	Test Conditions
Zener Voltage	V_Z	V	36	40	44	$I_Z=10\text{mA}$
Dynamic Impedance	Z_Z	Ω	-	-	50	$I_Z=10\text{mA}$
Zener Voltage Temperature Coefficient	γ_Z	%/ $^\circ\text{C}$	-	0.087	-	$I_Z=10\text{mA}$
Peak Forward Voltage	V_{FM}	V	-	-	0.98	$I_{FM}=6\text{A}$
Peak Reverse Current	I_{RRM}	μA	-	-	10	$V_R=32\text{V}$

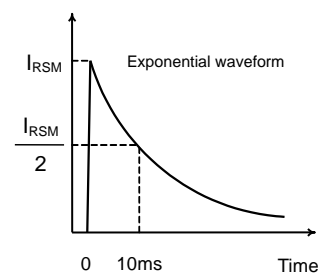
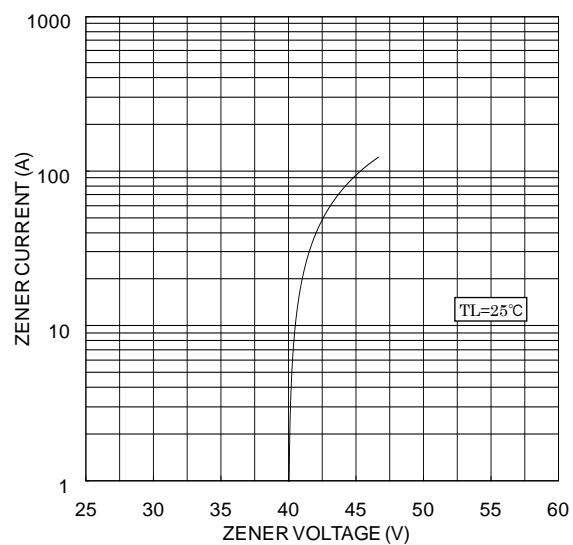


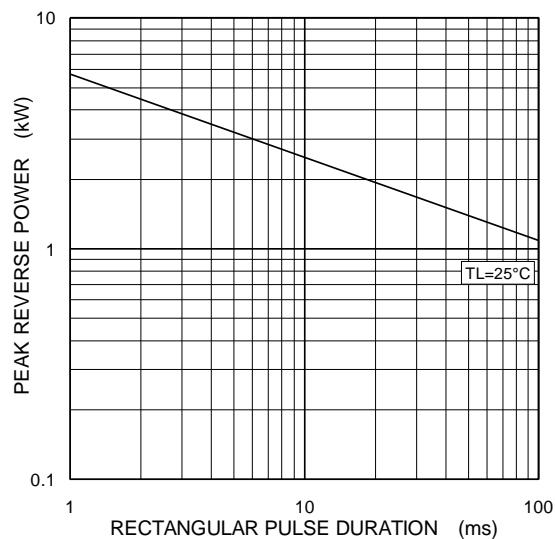
Figure 1. I_{RSM} waveform

ZSH8MD40

Typical zener characteristics



Typical reverse power characteristics
(Rectangular pulse non-repetitive)



Precautions for Safe Use and Notices

If semiconductor devices are handled in inappropriate manner, failures may result.
For this reason, be sure to read "Precaution for Use" before use.



This mark indicates an item about which caution is required.



CAUTION

This mark indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury and damage to property.

CAUTION

- (1) Regardless of changes in external conditions during use "absolute maximum ratings" should never be exceeded in designing electronic circuits that employ semiconductors. In the case of pulse use, furthermore, "safe operating area(SOA)" precautions should be observed.
- (2) Semiconductor devices may experience failures due to accident or unexpected surge voltages. Accordingly, adopt safe design features, such as redundancy or prevention of erroneous action, to avoid extensive damage in the event of a failure.
- (3) In cases where extremely high reliability is required (such as use in nuclear power control, aerospace and aviation, traffic equipment, life-support-related medical equipment, fuel control equipment and various kinds of safety equipment), safety should be ensured by using semiconductor devices that feature assured safety or by means of user's fail-safe precautions or other arrangement. Or consult Hitachi's sales department staff.

(If a semiconductor device fails, there may be cases in which the semiconductor device, wiring or wiring pattern will emit smoke or cause a fire or in which the semiconductor device will burst)

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<http://www.hitachi-power-semiconductor-device.co.jp/en/>

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