

**Product Summary**

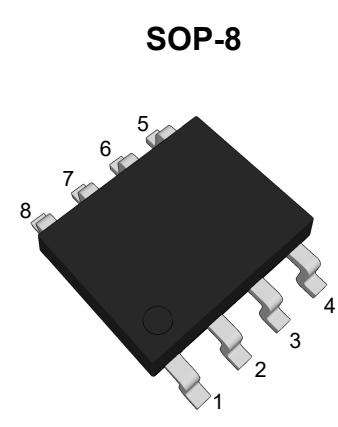
- $V_{DS} = -100V, I_D = -8A$
- $R_{DS(on)} < 100m\Omega @ V_{GS} = -10V$
- $R_{DS(on)} < 120m\Omega @ V_{GS} = -4.5V$

**Features**

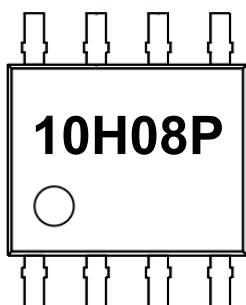
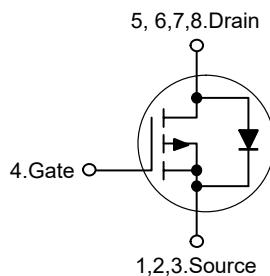
- Advanced Trench Technology
- 100% Avalanche Tested
- RoHS and Reach Compliant
- Halogen and Antimony Free
- Moisture Sensitivity Level 3

**Application**

- Load Switch
- PWM Applications
- Power Management


**(Top View)**

Pin	Description
1,2,3	Source
4	Gate
5,6,7,8	Drain

**Marking Code**

**Schematic Diagram**

**Absolute Maximum Ratings**

Ratings at 25°C ambient temperature unless otherwise specified.

Parameter	Symbol	Value	Unit
Drain-Source Voltage	$-V_{DS}$	100	V
Gate-Source Voltage	$V_{GS}$	$\pm 20$	V
Drain Current-Continuous	$-I_D$	8	A
Drain Current-Pulsed <sup>Note1</sup>	$-I_{DM}$	18	A
Maximum Power Dissipation	$P_D$	3.1	W
Single Pulse Avalanche Energy <sup>Note2</sup>	$E_{AS}$	56	mJ
Junction Temperature	$T_J$	150	°C
Storage Temperature Range	$T_{STG}$	-55 to +150	°C

**Thermal Characteristics**

Thermal Resistance, Junction-to-Ambient <sup>Note3</sup>	$R_{\theta JA}$	59.1	°C/W
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## Electrical Characteristics

(Ta=25°C unless otherwise specified)

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
BV <sub>DSS</sub>	Drain-Source Breakdown Voltage	V <sub>GS</sub> =0V , I <sub>D</sub> =-250uA	-100	-110	---	V
R <sub>DS(ON)</sub>	Static Drain-Source On-Resistance <sup>2</sup>	V <sub>GS</sub> =-10V , I <sub>D</sub> =- 6A	---	83	110	mΩ
		V <sub>GS</sub> =-4.5V , I <sub>D</sub> =-3A	---	95	120	
V <sub>GS(th)</sub>	Gate Threshold Voltage	V <sub>GS</sub> =V <sub>DS</sub> , I <sub>D</sub> =-250uA	-1.2	-1.8	-2.5	V
I <sub>DSS</sub>	Drain-Source Leakage Current	V <sub>DS</sub> =-100V , V <sub>GS</sub> =0V , T <sub>J</sub> =25°C	---	---	-50	uA
I <sub>GSS</sub>	Gate-Source Leakage Current	V <sub>GS</sub> =±20V , V <sub>DS</sub> =0V	---	---	±100	nA
g <sub>fs</sub>	Forward Transconductance	V <sub>DS</sub> =-10V , I <sub>D</sub> =-10A	---	24	---	S
Q <sub>g</sub>	Total Gate Charge	V <sub>DS</sub> =-50V , V <sub>GS</sub> =-10V , I <sub>D</sub> =-20A	---	20.1	---	nC
Q <sub>gs</sub>	Gate-Source Charge		---	3.9	---	
Q <sub>gd</sub>	Gate-Drain Charge		---	4.3	---	
T <sub>d(on)</sub>	Turn-On Delay Time	V <sub>DD</sub> =-50V , V <sub>GS</sub> =-10V , R <sub>G</sub> =3.3 , I <sub>D</sub> =-10A	---	10	---	ns
T <sub>r</sub>	Rise Time		---	30	---	
T <sub>d(off)</sub>	Turn-Off Delay Time		---	77	---	
T <sub>f</sub>	Fall Time		---	81	---	
C <sub>iss</sub>	Input Capacitance	V <sub>DS</sub> =-20V , V <sub>GS</sub> =0V , f=1MHz	---	1051	---	pF
C <sub>oss</sub>	Output Capacitance		---	119	---	
C <sub>rss</sub>	Reverse Transfer Capacitance		---	25	---	
I <sub>S</sub>	Continuous Source Current <sup>1,5</sup>	V <sub>G</sub> =V <sub>D</sub> =0V , Force Current	---	---	-15	A
V <sub>SD</sub>	Diode Forward Voltage <sup>2</sup>	V <sub>GS</sub> =0V , I <sub>S</sub> =-1A , T <sub>J</sub> =25°C	---	---	-1.2	V
t <sub>rr</sub>	Reverse Recovery Time	I <sub>F</sub> =-8A , di/dt=-100A/μs , T <sub>J</sub> =25°C	---	81	---	nS
Q <sub>rr</sub>	Reverse Recovery Charge		---	140	---	nC

## Notes:

- 1、 Repetitive Rating: Pulse Width Limited by Maximum Junction Temperature
- 2、 The test condition is, V<sub>DD</sub>=80V, V<sub>G</sub>=10V RG =25Ω, L=0.1mH.
- 3、 The data tested by pulsed Pulse Test: Pulse Width≤300μs, Duty Cycle≤0.5%
- 4、 The power dissipation is limited by 150°C junction temperature

## Typical Characteristic Curves

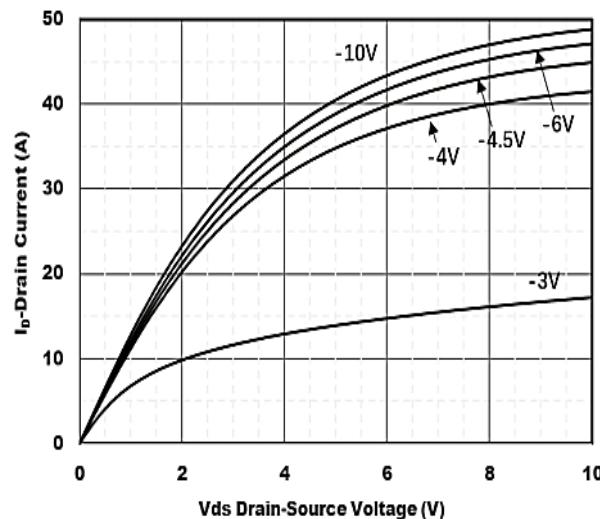


Figure1. Output Characteristics

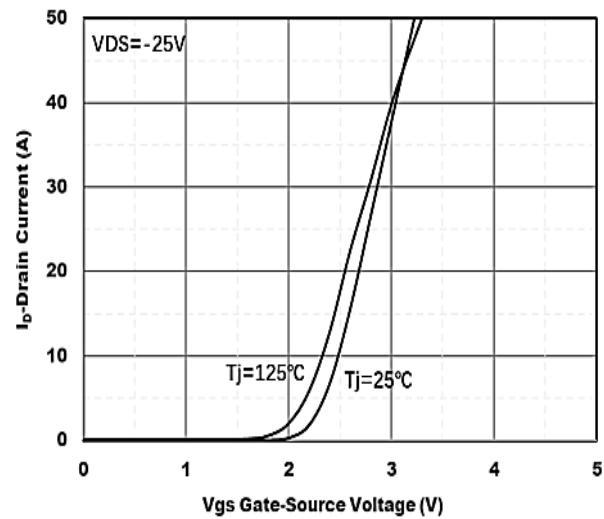


Figure2. Transfer Characteristics

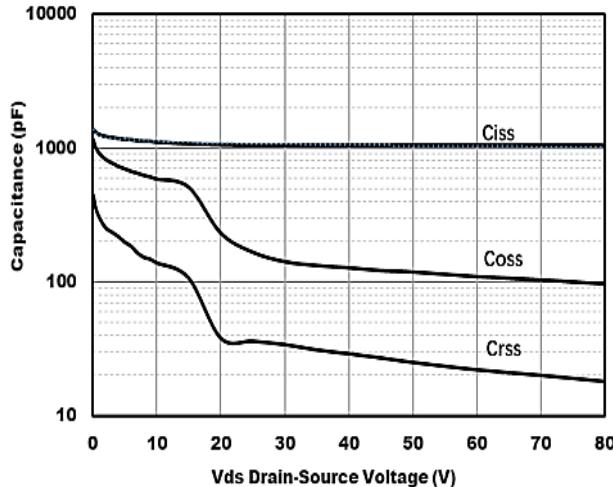


Figure3. Capacitance Characteristics

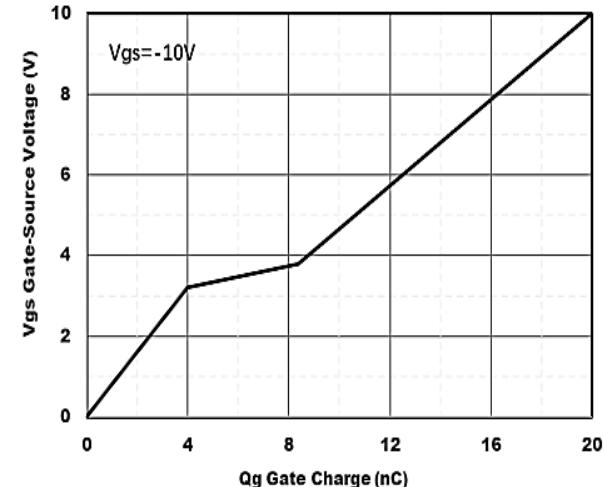


Figure4. Gate Charge

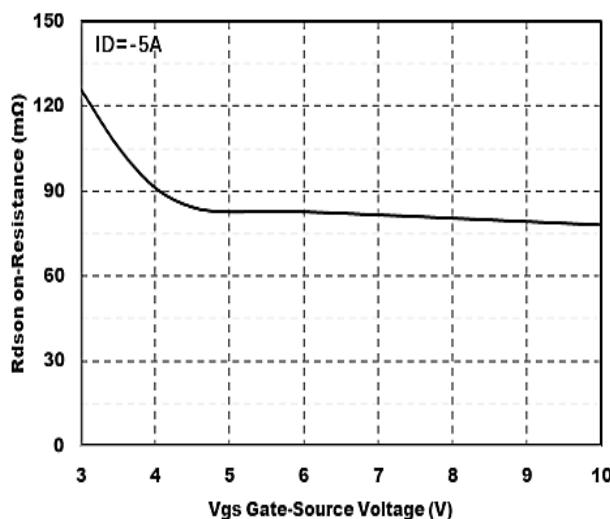


Figure5. : On-Resistance vs. Gate to Source Voltage

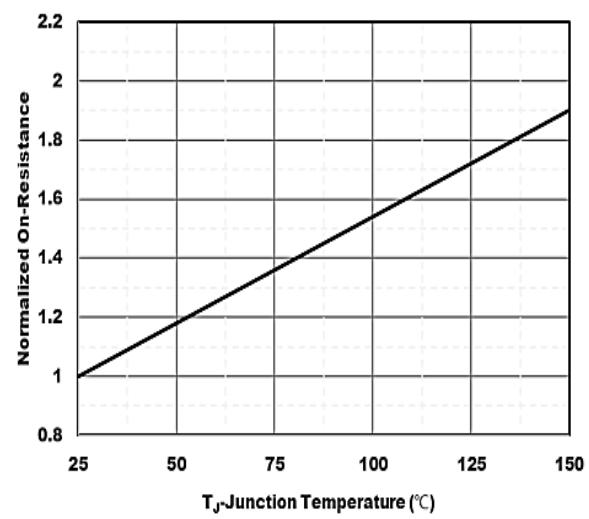


Figure6. Normalized On-Resistance

## Typical Characteristic Curves

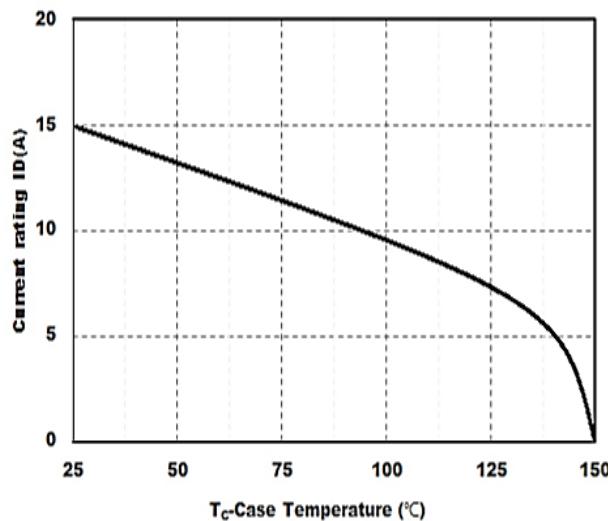


Figure 7. Drain current

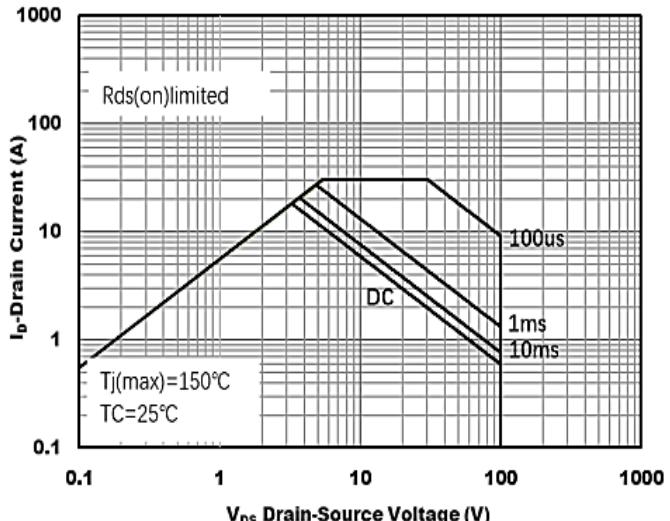


Figure 8. Safe Operation Area

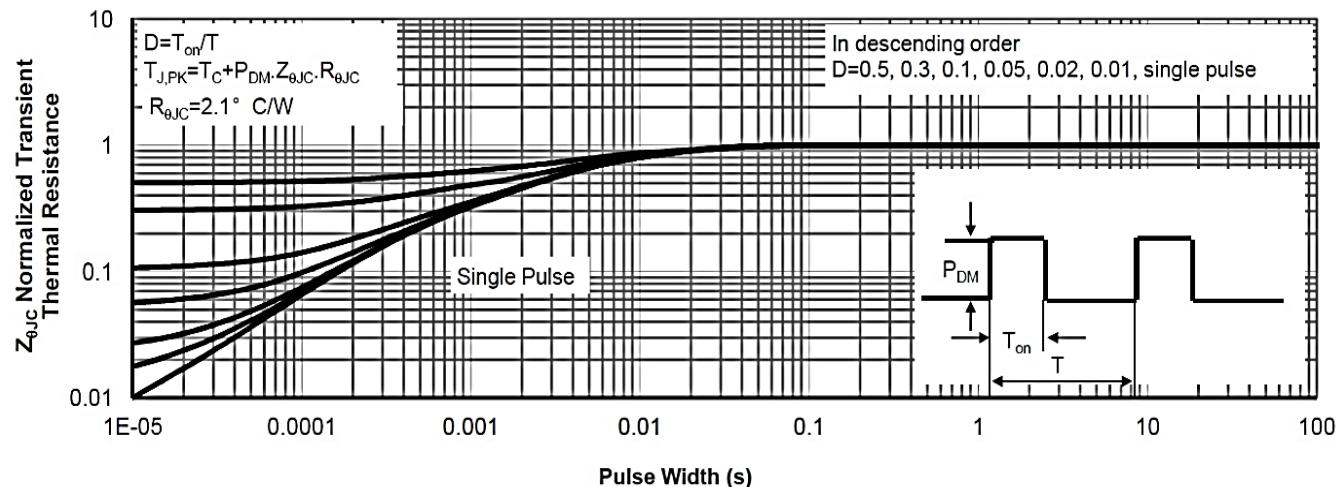


Figure 9. Normalized Maximum Transient thermal impedance

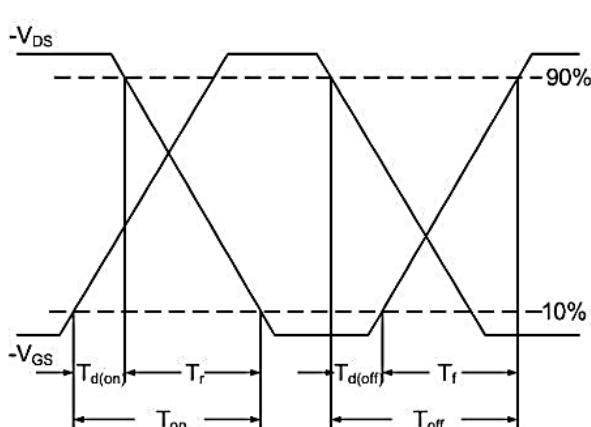


Figure 10 Switching Time Waveform

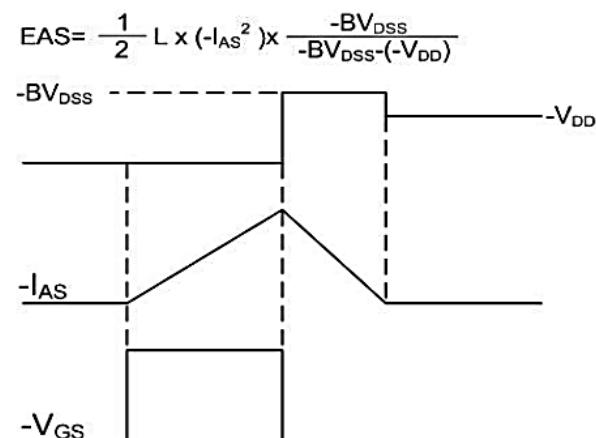
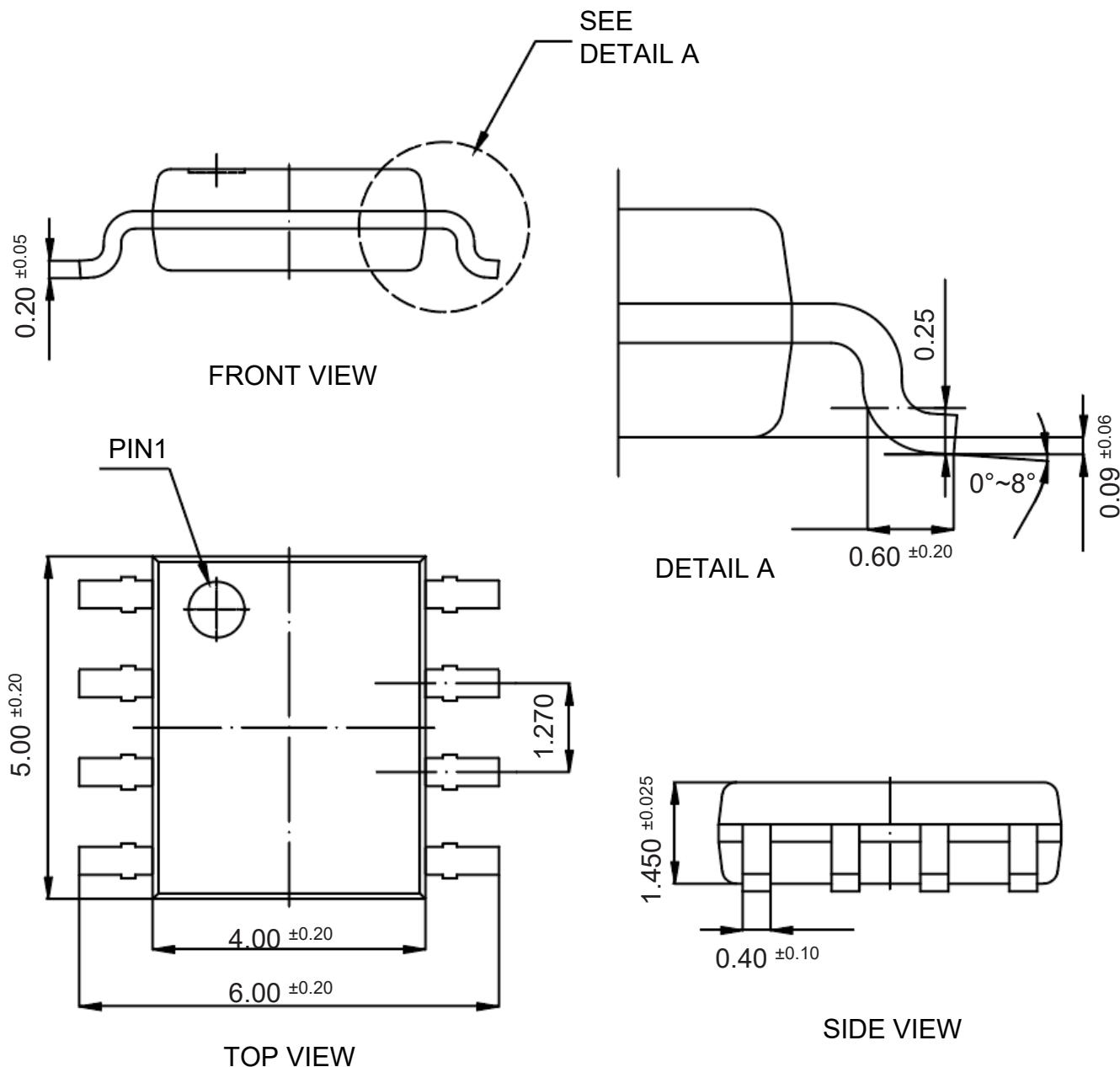


Figure 11 Unclamped Inductive Waveform

## Package Outline

SOP-8

Dimensions in mm

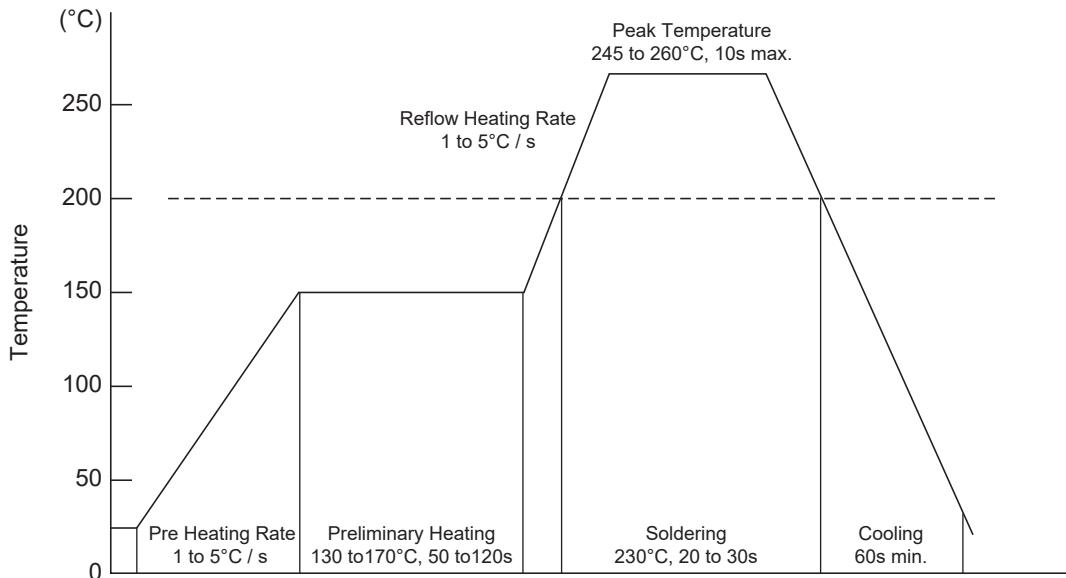


## Ordering Information

Device	Package	Shipping
TN10H08PPA	SOP-8	4,000PCS/Reel&13inches

## Conditions of Soldering and Storage

### ◆ Recommended condition of reflow soldering



Recommended peak temperature is over 245°C. If peak temperature is below 245°C, you may adjust the following parameters:

- Time length of peak temperature (longer)
- Time length of soldering (longer)
- Thickness of solder paste (thicker)

### ◆ Conditions of hand soldering

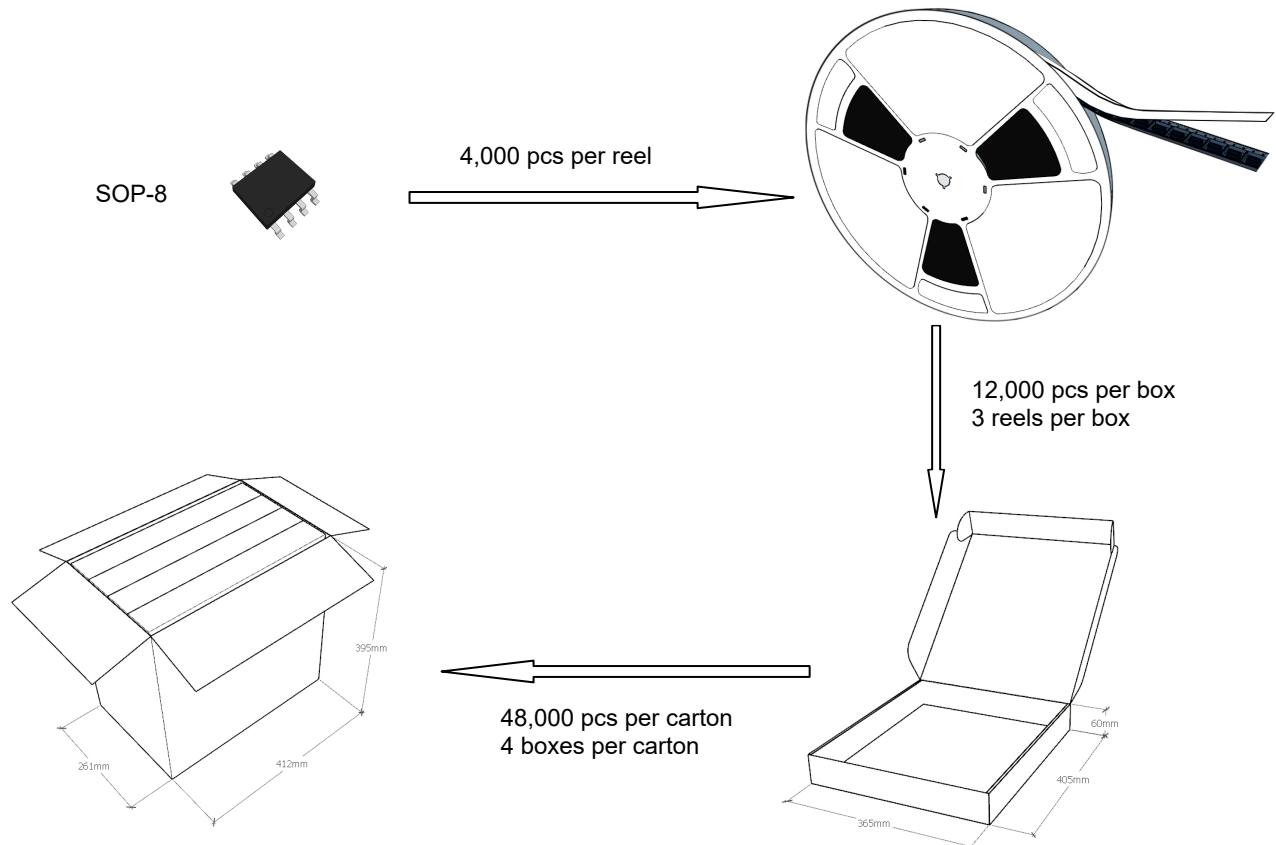
- Temperature: 300°C
- Time: 3s max.
- Times: one time

### ◆ Storage conditions

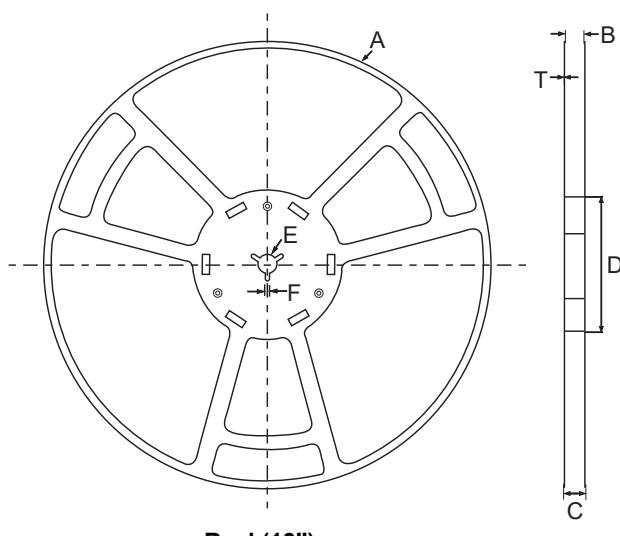
- **Temperature**  
5 to 40°C
- **Humidity**  
30 to 80% RH
- **Recommended period**  
One year after manufacturing

## Package Specifications

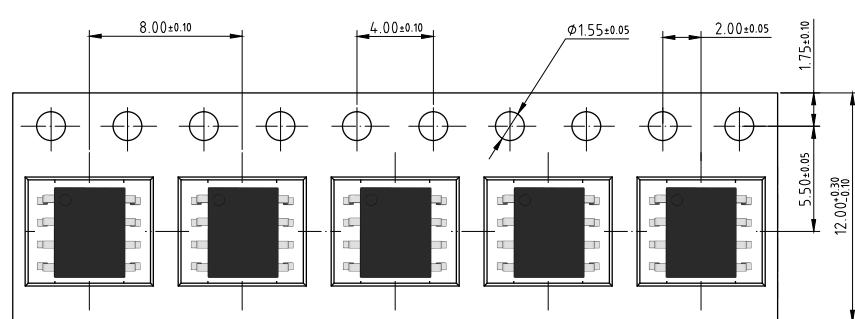
- The method of packaging



### ◆ Embossed tape and reel data



symbol	Value(unit:mm)
A	$\phi 330 \pm 1$
B	$12.7 \pm 0.5$
C	$16.5 \pm 0.3$
D	$\phi 99.5 \pm 0.5$
E	$\phi 13.6 \pm 0.3$
F	$2.8 \pm 0.3$
T	$1.9 \pm 0.2$



## Contact Information

TANI website: <http://www.tanisemi.com> Email:tani@tanisemi.com

For additional information, please contact your local Sales Representative.



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### Product Specification Statement

The product specification aims to provide users with a reference regarding various product parameters, performance, and usage. It presents certain aspects of the product's performance in graphical form and is intended solely for users to select product and make product comparisons, enabling users to better understand and evaluate the characteristics and advantages of the product. It does not constitute any commitment, warranty, or guarantee.

The product parameters described in the product specification are numerical values, characteristics, and functions obtained through actual testing or theoretical calculations of the product in an independent or ideal state. Due to the complexity of product applications and variations in test conditions and equipment, there may be slight fluctuations in parameter test values. TANI shall not guarantee that the actual performance of the product when installed in the customer's system or equipment will be entirely consistent with the product specification, especially concerning dynamic parameters. It is recommended that users consult with professionals for product selection and system design. Users should also thoroughly validate and assess whether the actual parameters and performance when installed in their respective systems or equipment meet their requirements or expectations. Additionally, users should exercise caution in verifying product compatibility issues, and TANI assumes no responsibility for the application of the product. TANI strives to provide accurate and up-to-date information to the best of our ability. However, due to technical, human, or other reasons, TANI cannot guarantee that the information provided in the product specification is entirely accurate and error-free. TANI shall not be held responsible for any losses or damages resulting from the use or reliance on any information in these product specifications.

TANI reserves the right to revise or update the product specification and the products at any time without prior notice, and the user's continued use of the product specification is considered an acceptance of these revisions and updates. Prior to purchasing and using the product, users should verify the above information with TANI to ensure that the product specification is the most current, effective, and complete. If users are particularly concerned about product parameters, please consult TANI in detail or request relevant product test reports. Any data not explicitly mentioned in the product specification shall be subject to separate agreement.

Users are advised to pay attention to the parameter limit values specified in the product specification and maintain a certain margin in design or application to ensure that the product does not exceed the parameter limit values defined in the product specification. This precaution should be taken to avoid exceeding one or more of the limit values, which may result in permanent irreversible damage to the product, ultimately affecting the quality and reliability of the system or equipment.

The design of the product is intended to meet civilian needs and is not guaranteed for use in harsh environments or precision equipment. It is not recommended for use in systems or equipment such as medical devices, aircraft, nuclear power, and similar systems, where failures in these systems or equipment could reasonably be expected to result in personal injury. TANI shall assume no responsibility for any consequences resulting from such usage.

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