



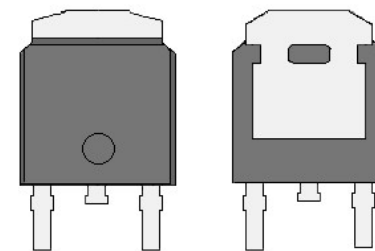
Working Together for a Greener Society

Future of Power Electronics and the Earth



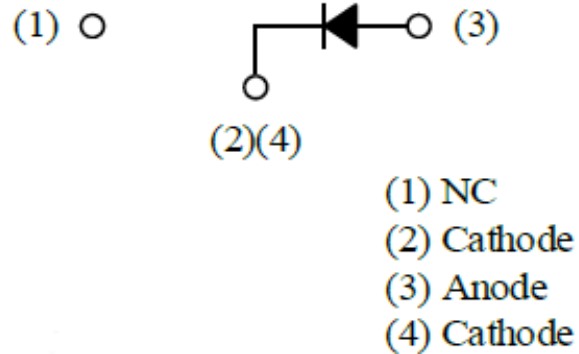
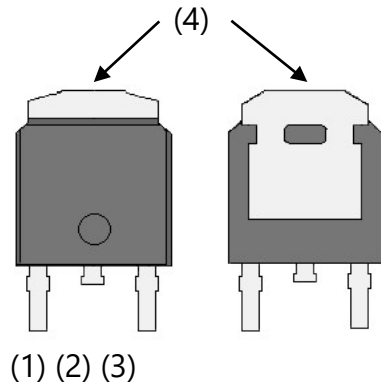
600 V, 10 A Fast Recovery Diode

SPNS-1106S



The SPNS-1106S is a fast recovery diode (600 V, 10 A) housed in a compact TO252-2L package. Your power supply circuit can be downsized effectively with our diode.

■ TO252-2L Package



■ Description

- Lower Losses by Low V_F
- Flow Soldering Available (MSL 1)
- Bare Leads: Pb-free (RoHS Compliant)
- Flammability: Equivalent to UL94V-0

■ Applications

- PFC Circuit
- Freewheeling Diode
(Offline Buck Converter, Offline Buck-boost Converter, etc.)

■ Absolute Maximum Ratings and Electrical Characteristics

T_J	V_{RM}	$I_{F(AV)}$	V_F (Max.)	I_R (Max.)	$H \cdot I_R$ (Max.)	t_{rr} (Max.)
-55 °C to 150 °C	600 V	10 A	1.3 V ($I_F = 10$ A)	100 μ A ($V_R = 600$ V)	10 mA ($V_R = 600$ V, $T_J = 150$ °C)	100 ns ($I_F = I_{RP} = 100$ mA, 90% recovery point)

Unless otherwise specified, $T_A = 25$ °C.

■ Low V_F

Compared with competitors' fast recovery diodes in TO252 packages, our diode has achieved excellent V_F characteristics, contributing to loss reduction in circuits such as PFC circuits (discontinuous conduction mode).

Comparison of TO252 Package Products

Part Number	V_{RM}	$I_{F(AV)}$	V_F ($I_F = 10\text{ A}, T_J = 25\text{ °C}$)	
			Typ.	Max.
SPNS-1106S	600 V	10 A	1.10 V	1.30 V
Competitor A			1.25 V	1.50 V
Competitor B			1.24 V	1.35 V
Competitor C			1.15 V	1.30 V

■ Flow Soldering Available (MSL 1)

This product can be mounted by flow and reflow.

Mounting Conditions

Flow: 260 °C / 10 s (1 time)

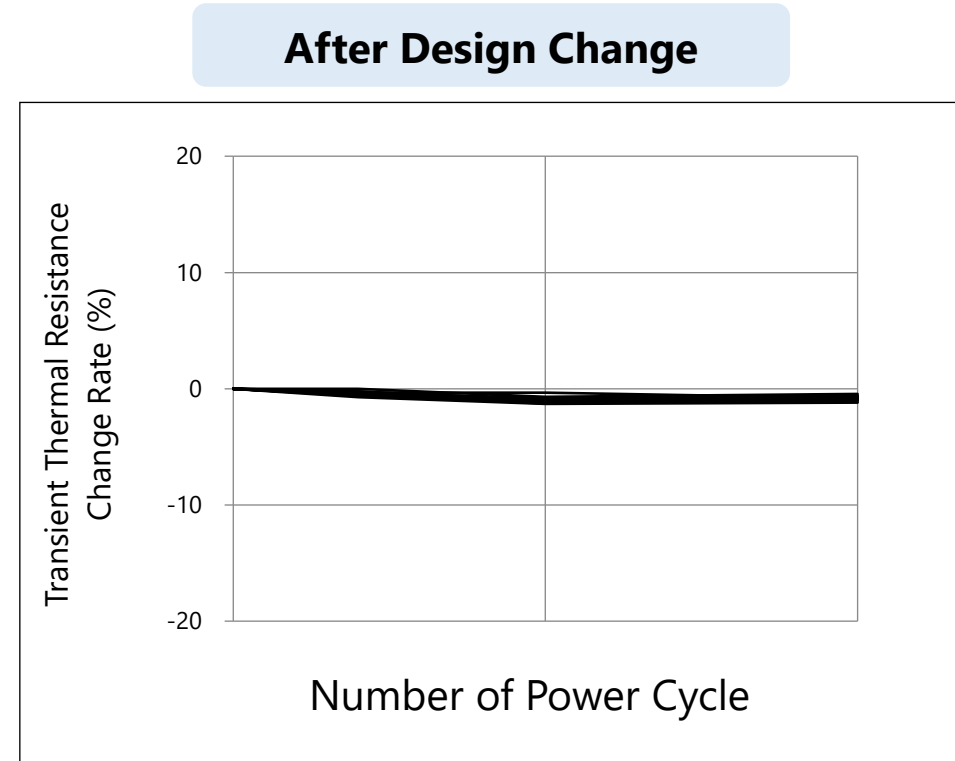
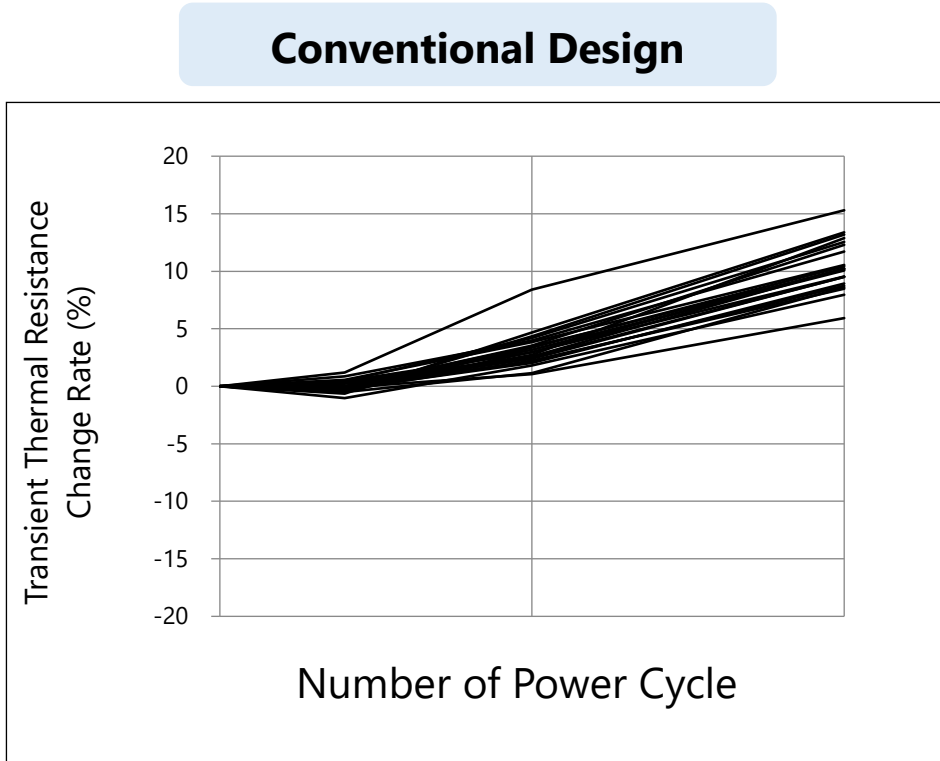
Reflow:

preheat: 150 °C to 200 °C / 60 s to 120 s

solder heating: 255 °C / 30 s, 3 times (260 °C peak)

■ High Reliability

Compared with our conventional design, the rate of change in transient thermal resistance due to thermal stress is greatly reduced. As a result, high reliability is maintained.



High reliability against thermal stress is maintained in flow mounting (MSL1) as well!

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