Ultrafast Recovery Diode

MPL-1036S

January, 2006

General Description

A surface mount device added to 600V_L series.
Realizes better space-saving in mounting on a printed circuit board by using a surface mount package (TO-263).

Applications

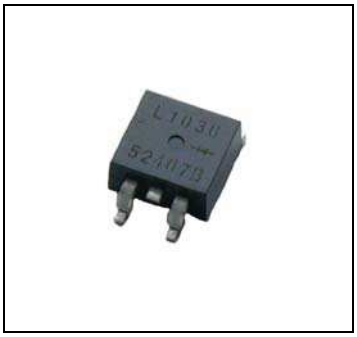
- Continuous-current-mode PFC circuit.
- An output rectifier for SMPS, UPS, or DC-DC converters.
- A Flywheel diode for inverters and choppers.

Features

- Surface mount package (TO-263)
- Low loss FRD (600 V_L series)

Die Structure: Silicon Planer Diode (FRD)

Package --- TO-263



Key Specifications

Absolute maximum ratings

Parameter	Symbol	Unit	Rating
Transient Peak Reverse Voltage	VRSM	V	600
Peak Reverse Voltage	VRM	V	600
Average Forward Current	IF(AV)	A	3
Peak Surge Forward Current	IFSM	A	50

Electrical characteristics

Parameter	Symbol	Unit	Rating	Conditions
Forward Voltage Drop	VF	V	1.75 max.	IF=3A
Reverse Leakage Current	IR	μA	50 max.	VR=VRM
Reverse Leakage Current Under High Temperature	H•IR	μA	100 max.	VR=VRM, Tj=150°C
Reverse Recovery Time	trr	ns	50 max.	IF=IRP=100mA 90%Recovery point

§1. Absolute Maximum Ratings and Electrical Characteristics

•Absolute Maximum Ratings

No.	Parameter	Symbol	Unit	Rating	Conditions
1	Transient Peak Reverse Voltage	VRSM	V	600	
2	Peak Reverse Voltage	VRM	V	600	
3	Average Forward Current	IF(AV)	A	3	
4	Peak Surge Forward Current	IFSM	A	50	10msec. Half sine-wave, one shot
5	I^2t Limiting Value	I^2t	A^2S	12.5	1msec ≤ t ≤ 10msec
6	Junction Temperature	Tj	°C	-40 to +150	
7	Storage Temperature	Tstg	°C	-40 to+150	

• Electrical Characteristics

No.	Parameter	Symbol	Unit	Rating	Conditions
1	Forward Voltage Drop	V_F	V	1.75 max.	IF=3A
2	Reverse Leakage Current	I_R	μA	50 max.	VR=VRM
3	Reverse Leakage Current Under High Temperature	H•I_R	μA	100 max.	VR=VRM, Tj=150°C
4	Reverse Recovery Time	trr	ns	50 max	IF=IRP=100mA 90% Recovery point
5	Thermal Resistance	$R_{th(j-c)}$	°C/W	2.5 max.	Between Junction and case

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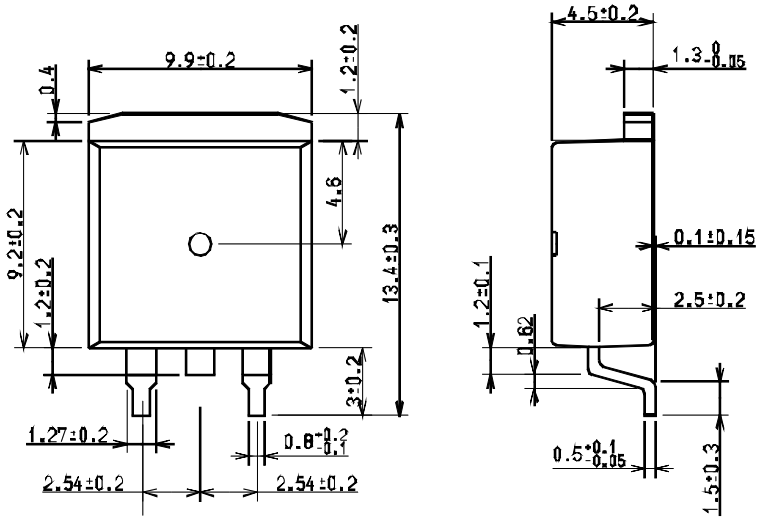
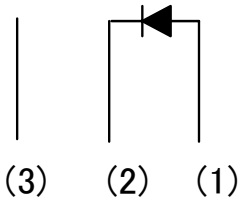
§2. Package information

2-1 Package type, physical dimensions





(2) is connected to a heat sink.

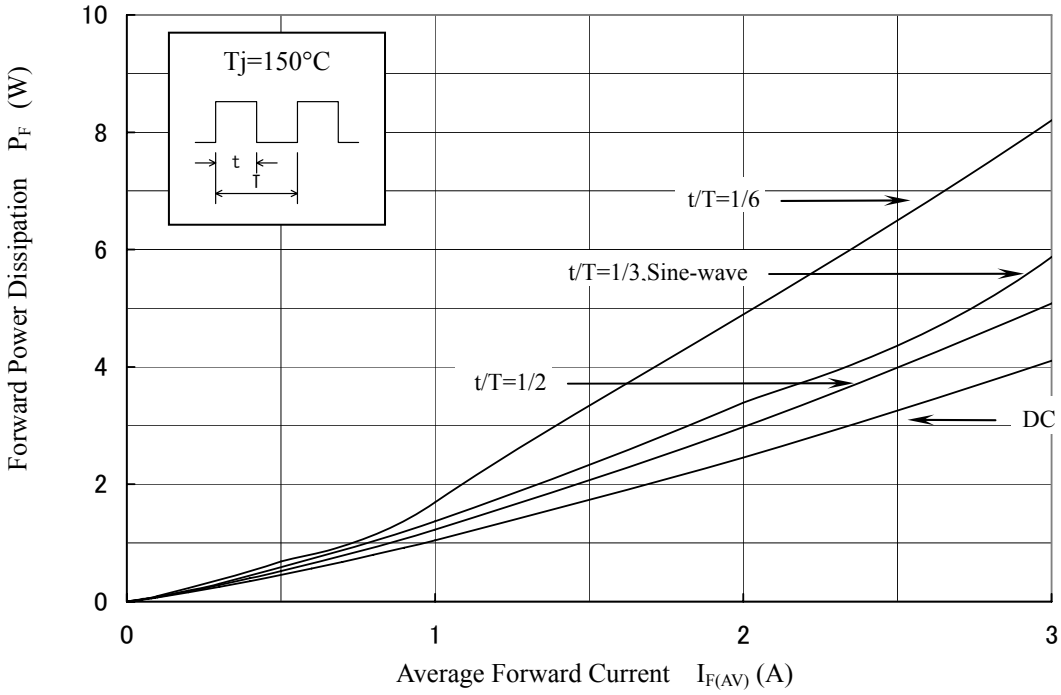
Unit: mm

2-2 Marking

Part Number	Marking		
	Type Name	Polarity	Lot number
MPL-1036S	L1036		1st letter: Last digit of year 2nd letter: Month From 1 to 9 for Jan. to Sep., O for Oct., N for Nov., D for Dec. 3rd letter: Day Week(Every month of 1st to 5th week) 4th to 6th letter: Suffix No.

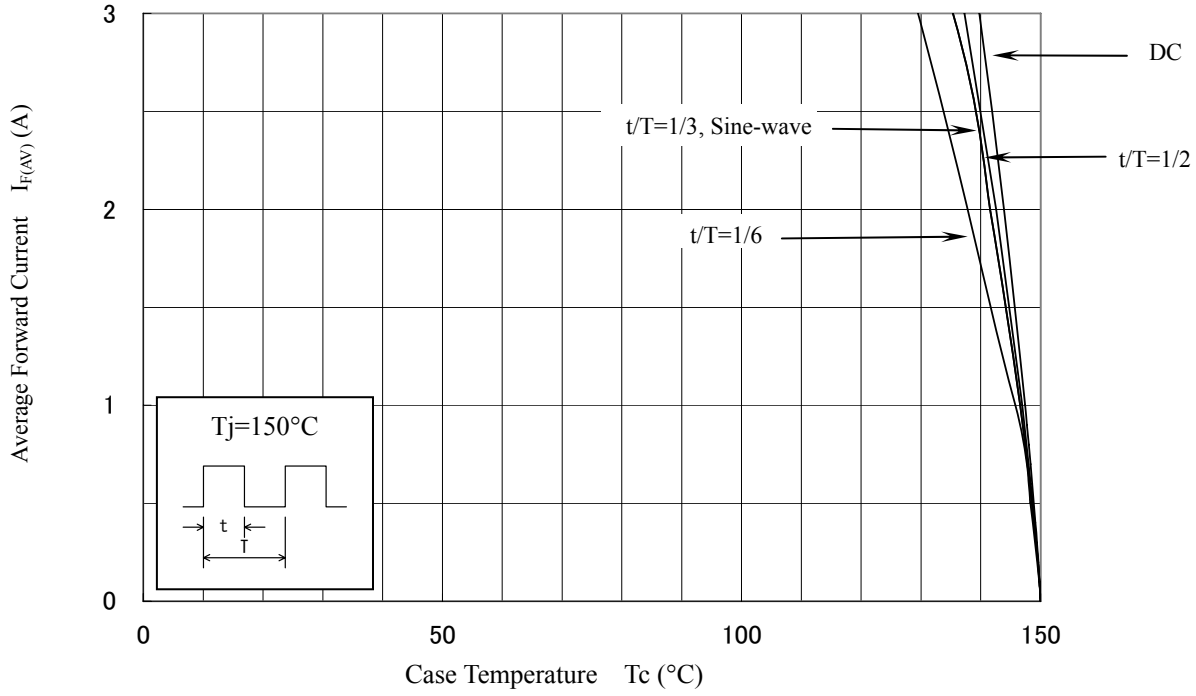
§3. Characteristics

$I_{F(AV)}$ - P_F



§4. Derating

T_c - $I_{F(AV)}$ V_R=0 (V)



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