

## 1. General description

Standard reverse recovery power diode in a TO263 package.



## 2. Features and benefits

- Low forward voltage drop
- Low leakage current
- High voltage capability
- High inrush current capability

## 3. Applications

- Input rectifier
- Bypass diode

## 4. Quick reference data

Table 1. Quick reference data

Symbol	Parameter	Conditions	Values			Unit
<b>Absolute maximum rating</b>						
$V_{RRM}$	repetitive peak reverse voltage		1200			V
$I_{F(AV)}$	average forward current	$\delta = 0.5$ ; square-wave pulse; $T_{mb} \leq 97$ °C; <a href="#">Fig. 1</a> ; <a href="#">Fig. 2</a> ; <a href="#">Fig. 3</a>	35			A
$I_{FSM}$	non-repetitive peak forward current	$t_p = 10$ ms; $T_{j(init)} = 25$ °C; sine-wave pulse; <a href="#">Fig. 4</a>	400			A
		$t_p = 8.3$ ms; $T_{j(init)} = 25$ °C; sine-wave pulse	435			A
Symbol	Parameter	Conditions	Min	Typ	Max	Unit
<b>Static characteristics</b>						
$V_F$	forward voltage	$I_F = 35$ A; $T_j = 25$ °C; <a href="#">Fig. 6</a>	-	1.18	1.40	V
		$I_F = 35$ A; $T_j = 150$ °C; <a href="#">Fig. 6</a>	-	1.15	1.35	V

## 5. Pinning information

Table 2. Pinning information

Pin	Symbol	Description	Simplified outline	Graphic symbol
1	A	anode		
2	K	cathode [1]		
3	A	anode		
mb	K	mounting base; connected to cathod		

[1] It is not possible to connect to pin 2 of the TO263 package.

## 6. Ordering information

Table 3. Ordering information

Type number	Package name	Orderable part number	Packing method	Small packing quantity	Package version	Package issue date
WND35P12B	TO263	WND35P12BJ	Reel	800	TO263N (N)	26-Sep-2016
					TO263P (P)	12-Jun-2023

## 7. Marking

Table 4. Marking codes

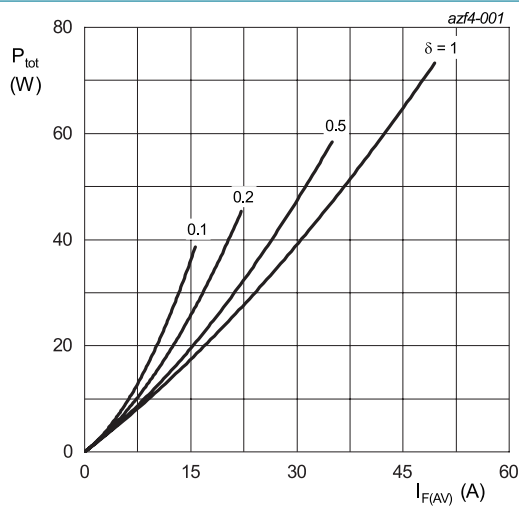
Type number	Marking codes	
	Assembly factory: N	Assembly factory: P
WND35P12B	WND35P12B PJNxxxx xx	WND35P12B PJPxxxx xx

## 8. Limiting values

**Table 5. Limiting values**

In accordance with the Absolute Maximum Rating System (IEC 60134).

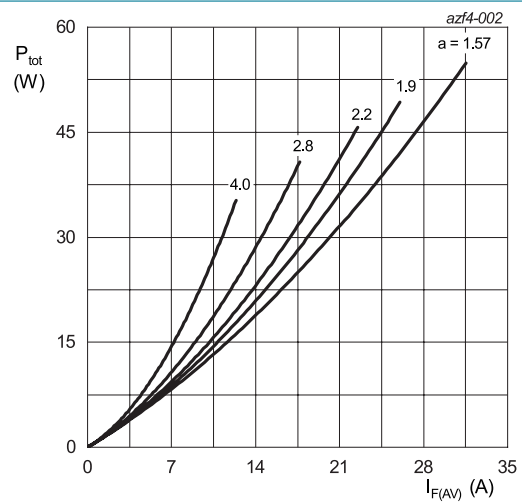
Symbol	Parameter	Conditions	Values	Unit
$V_{RRM}$	repetitive peak reverse voltage		1200	V
$V_{RWM}$	crest working reverse voltage		1200	V
$V_R$	reverse voltage	DC	1200	V
$I_{F(AV)}$	average forward current	$\delta = 0.5$ ; square-wave pulse; $T_{mb} \leq 97\text{ }^\circ\text{C}$ ; <a href="#">Fig. 1</a> ; <a href="#">Fig. 2</a> ; <a href="#">Fig. 3</a>	35	A
$I_{FSM}$	non-repetitive peak forward current	$t_p = 10\text{ ms}$ ; $T_{j(\text{init})} = 25\text{ }^\circ\text{C}$ ; sine-wave pulse; <a href="#">Fig. 4</a>	400	A
		$t_p = 8.3\text{ ms}$ ; $T_{j(\text{init})} = 25\text{ }^\circ\text{C}$ ; sine-wave pulse	435	A
$T_{stg}$	storage temperature		-40 to 150	$^\circ\text{C}$
$T_j$	junction temperature		-40 to 150	$^\circ\text{C}$



$$I_{F(AV)} = I_{F(RMS)} \times \sqrt{\delta}$$

$$V_o = 1.025\text{ V}; R_s = 0.0092\ \Omega$$

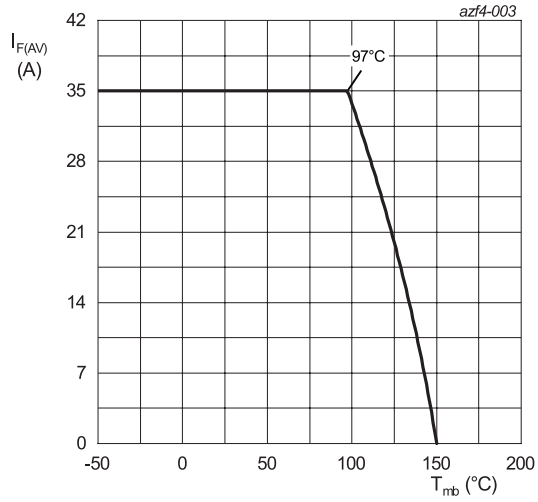
**Fig. 1. Forward power dissipation as a function of average forward current; square waveform; maximum values**



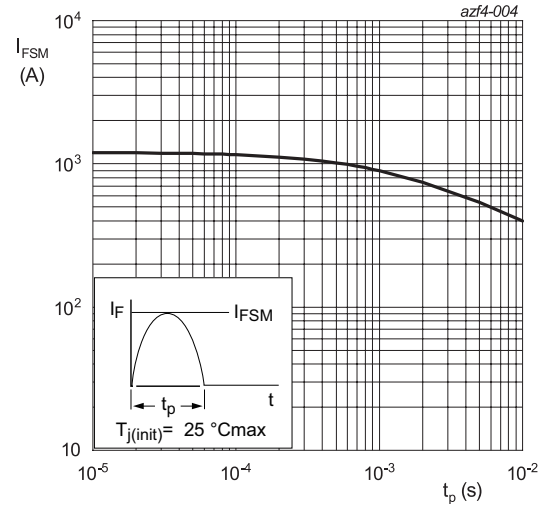
$$a = \text{form factor} = I_{F(RMS)} / I_{F(AV)}$$

$$V_o = 1.025\text{ V}; R_s = 0.0092\ \Omega$$

**Fig. 2. Forward power dissipation as a function of average forward current; sinusoidal waveform; maximum values**



**Fig. 3. Forward current as a function of mounting base temperature; maximum values**



**Fig. 4. Non-repetitive peak forward current as a function of pulse width; sinusoidal waveform; maximum values**

## 9. Thermal characteristics

Table 6. Thermal characteristics

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
$R_{th(j-mb)}$	thermal resistance from junction to mounting base	<a href="#">Fig. 5</a>	-	-	0.9	K/W
$R_{th(j-a)}$	thermal resistance from junction to ambient free air	in free air	-	50	-	K/W

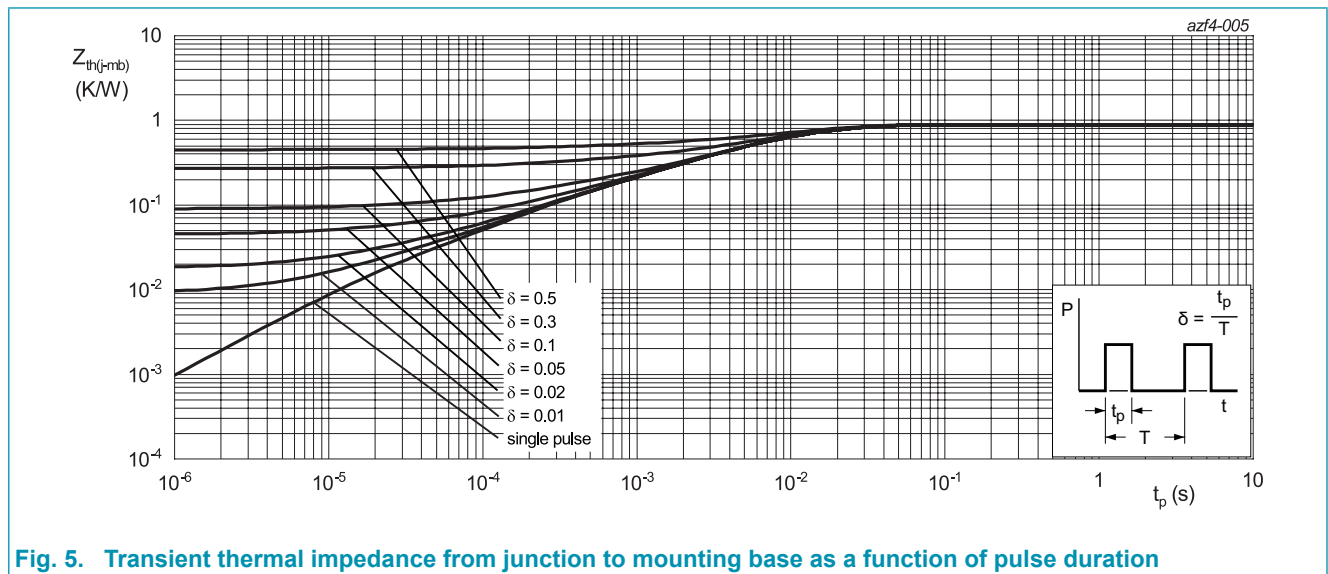


Fig. 5. Transient thermal impedance from junction to mounting base as a function of pulse duration

## 10. Characteristics

Table 7. Characteristics

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
<b>Static characteristics</b>						
$V_F$	forward current	$I_F = 35 \text{ A}; T_j = 25 \text{ }^\circ\text{C}; \text{ Fig. 6}$	-	1.18	1.40	V
		$I_F = 35 \text{ A}; T_j = 150 \text{ }^\circ\text{C}; \text{ Fig. 6}$	-	1.15	1.35	V
		$I_F = 25 \text{ A}; T_j = 25 \text{ }^\circ\text{C}; \text{ Fig. 6}$	-	1.10	1.30	V
		$I_F = 25 \text{ A}; T_j = 150 \text{ }^\circ\text{C}; \text{ Fig. 6}$	-	1.05	1.25	V
$I_R$	reverse current	$V_R = 1200 \text{ V}; T_j = 25 \text{ }^\circ\text{C}$	-	-	50	$\mu\text{A}$
		$V_R = 1200 \text{ V}; T_j = 150 \text{ }^\circ\text{C}$	-	-	1	mA

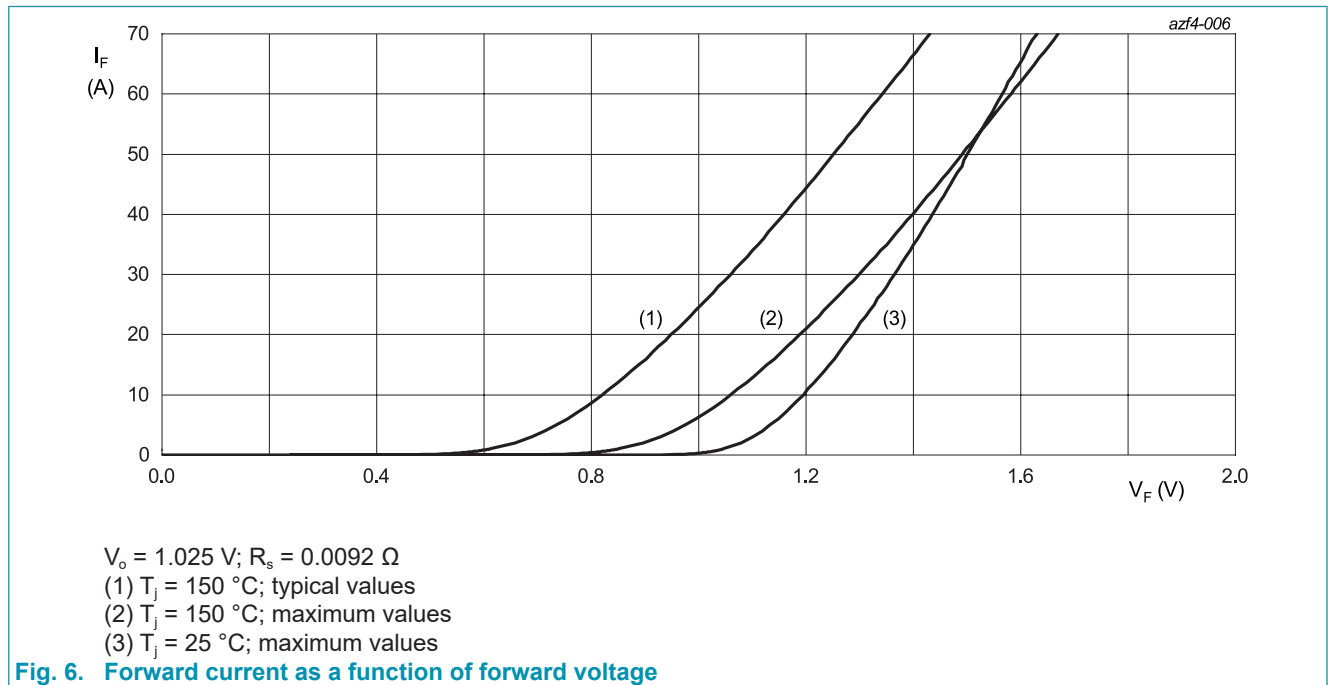
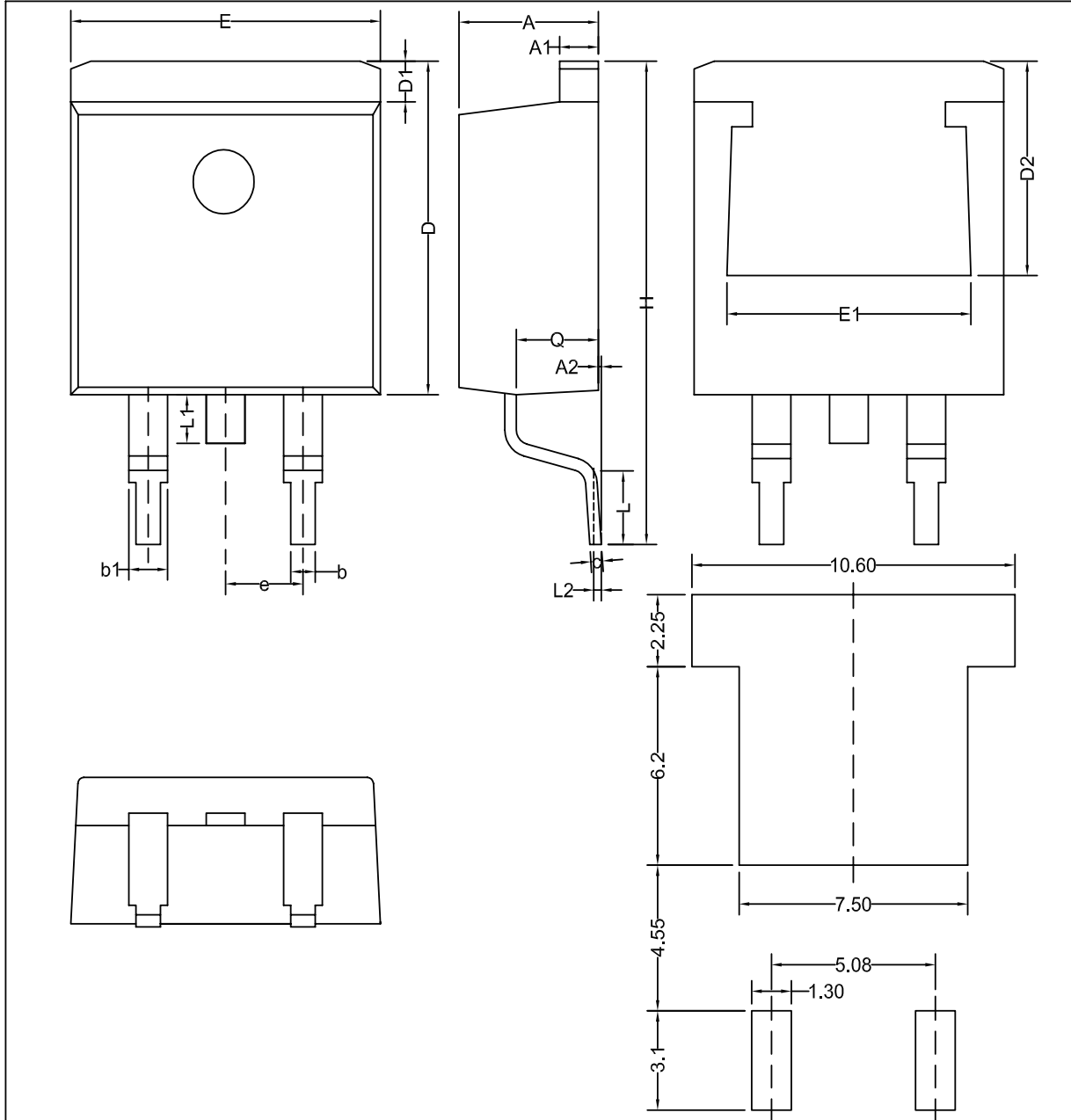


Fig. 6. Forward current as a function of forward voltage

### 11. Package outline

Assembly factory: N

Plastic single-ended surface-mounted package (D2PAK); 3 leads (one lead cropped) TO263



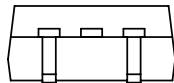
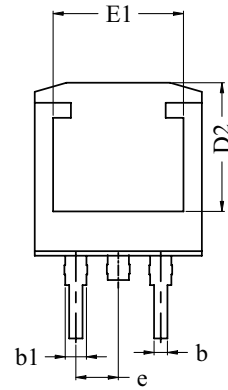
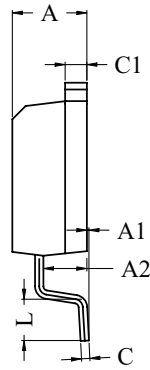
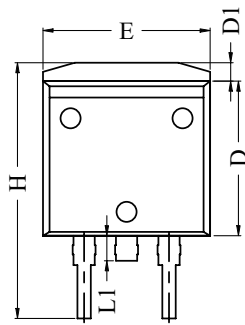
Recommended Footprint

Unit	A	A1	A2	b	b1	c	D	D1	D2	e	E	E1	H	L	L1	L2	Q
min	4.10	1.22	0.00	0.60	1.05	0.34	---	1.20	6.60	2.54 (BSC)	9.70	7.80	14.80	2.10	---	0.25 (BSC)	2.20
max	4.70	1.40	0.25	0.90	1.45	0.64	11.00	1.60	---	---	10.30	---	15.80	2.90	1.75	---	2.79

Assembly factory: P

Plastic single-ended surface-mounted package (D2PAK); 3 leads (one lead cropped)

TO263



Dim	All Dimensions in Millimeters		
	Min	Typ	Max
A	4.30	4.46	4.60
A1	0	0.13	0.25
A2	2.50	2.60	2.70
b	0.70	0.80	0.90
b1	1.10	1.27	1.45
C	0.40	0.52	0.60
C1	1.17	1.30	1.40
D	9.10	9.25	9.40
D1	1.00	1.10	1.30
D2	7.40	7.70	8.00
E	9.80	10.00	10.20
E1	7.60	7.80	8.00
e	2.54 BSC		
H	14.80	15.30	15.80
L	2.10	2.47	2.80
L1	1.30	1.50	1.70



## 12. Legal information

### Data sheet status

Document status [1][2]	Product status [3]	Definition
Objective [short] data sheet	Development	This document contains data from the objective specification for product development.
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## 13. Contents

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1. General description.....	1
2. Features and benefits .....	1
3. Applications .....	1
4. Quick reference data .....	1
5. Pinning information.....	2
6. Ordering information.....	2
7. Marking.....	2
8. Limiting values .....	3
9. Thermal characteristics .....	5
10. Characteristics.....	6
11. Package outline .....	7
12. Legal information .....	9
13. Contents .....	11

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