

## 1. General description

Standard reverse recovery power diode in a TO247-2L 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

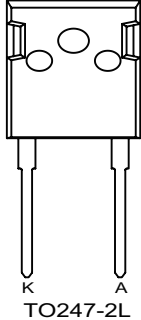

## 4. Quick reference data

Table 1. Quick reference data

Symbol	Parameter	Conditions	Values			Unit
<b>Absolute maximum rating</b>						
$V_{RRM}$	repetitive peak reverse voltage		1600			V
$I_{F(AV)}$	average forward current	$\delta = 0.5$ ; square-wave pulse; $T_{mb} \leq 113$ °C; <a href="#">Fig. 1</a> ; <a href="#">Fig. 2</a> ; <a href="#">Fig. 3</a>	45			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>	475			A
		$t_p = 8.3$ ms; $T_{j(init)} = 25$ °C; sine-wave pulse;	523			A
Symbol	Parameter	Conditions	Min	Typ	Max	Unit
<b>Static characteristics</b>						
$V_F$	forward voltage	$I_F = 45$ A; $T_j = 25$ °C; <a href="#">Fig. 6</a>	-	1.2	1.4	V
		$I_F = 45$ A; $T_j = 150$ °C; <a href="#">Fig. 6</a>	-	1.1	1.3	V

## 5. Pinning information

Table 2. Pinning information

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

## 6. Ordering information

Table 3. Ordering information

Type number	Package		Version
	Name	Description	
WND45P16W	TO247-2L	plastic single-ended surface-mounted package (DPAK); 3 leads (one lead cropped)	TO247L-2L

## 7. Marking

Table 4. Marking codes

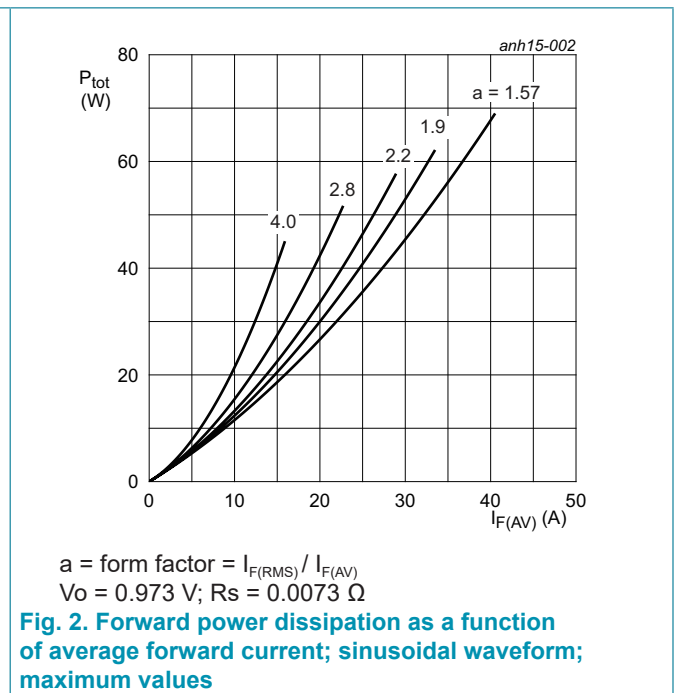
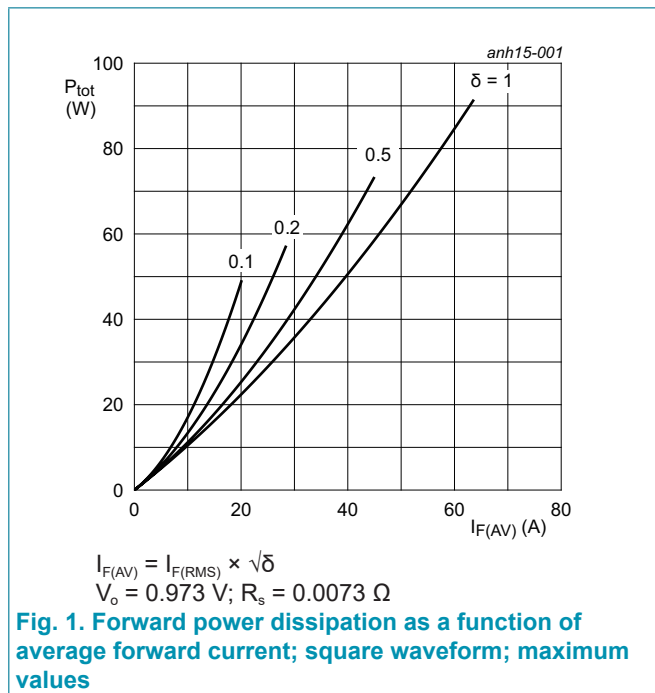
Type number	Marking codes
WND45P16W	D45P16

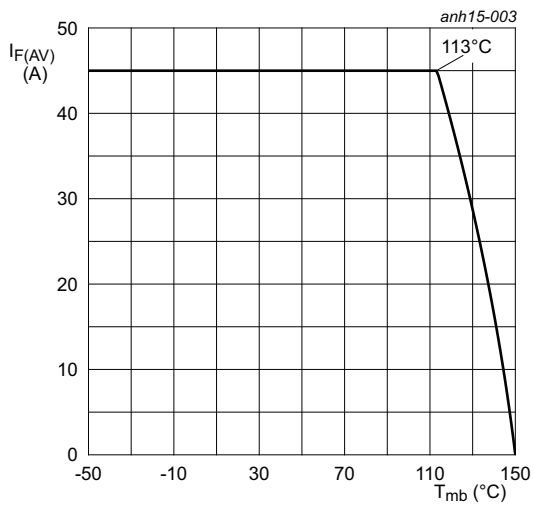
## 8. Limiting values

**Table 5. Limiting values**

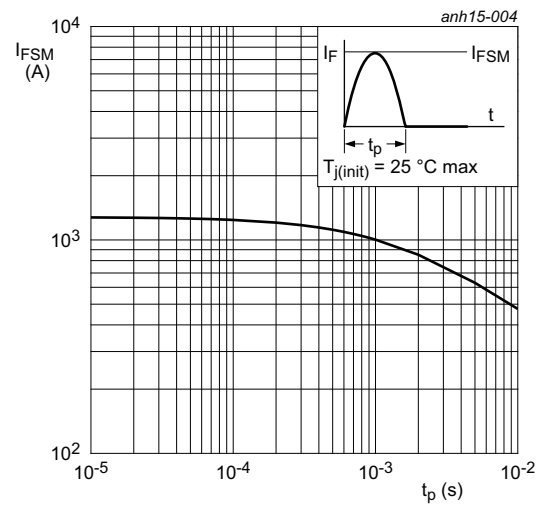
In accordance with the Absolute Maximum Rating System (IEC 60134).

Symbol	Parameter	Conditions	Values	Unit
$V_{RRM}$	repetitive peak reverse voltage		1600	V
$V_{RWM}$	crest working reverse voltage		1600	V
$V_R$	reverse voltage	DC	1600	V
$I_{F(AV)}$	average forward current	$\delta = 0.5$ ; square-wave pulse; $T_{mb} \leq 113\text{ }^\circ\text{C}$ ; <a href="#">Fig. 1</a> ; <a href="#">Fig. 2</a> ; <a href="#">Fig. 3</a>	45	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>	475	A
		$t_p = 8.3\text{ ms}$ ; $T_{j(\text{init})} = 25\text{ }^\circ\text{C}$ ; sine-wave pulse;	523	A
$T_{stg}$	storage temperature		-55 to 150	$^\circ\text{C}$
$T_j$	junction temperature		150	$^\circ\text{C}$





**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>	-	-	0.5	K/W
$R_{th(j-a)}$	thermal resistance from junction to ambient free air	in free air	-	40	-	K/W

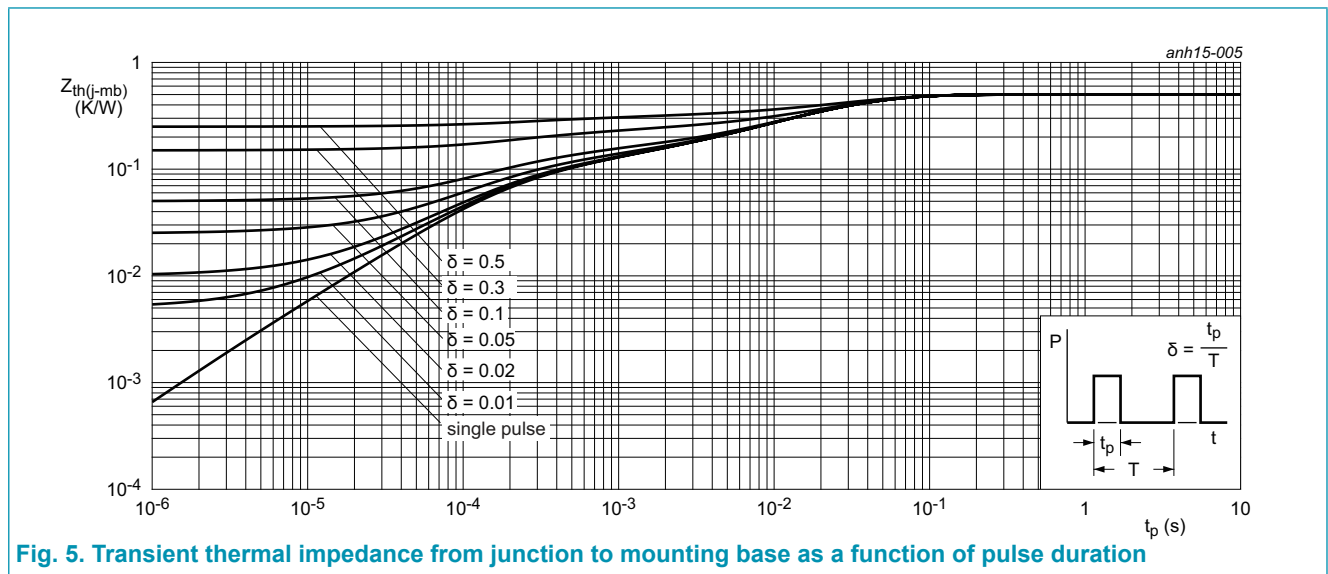
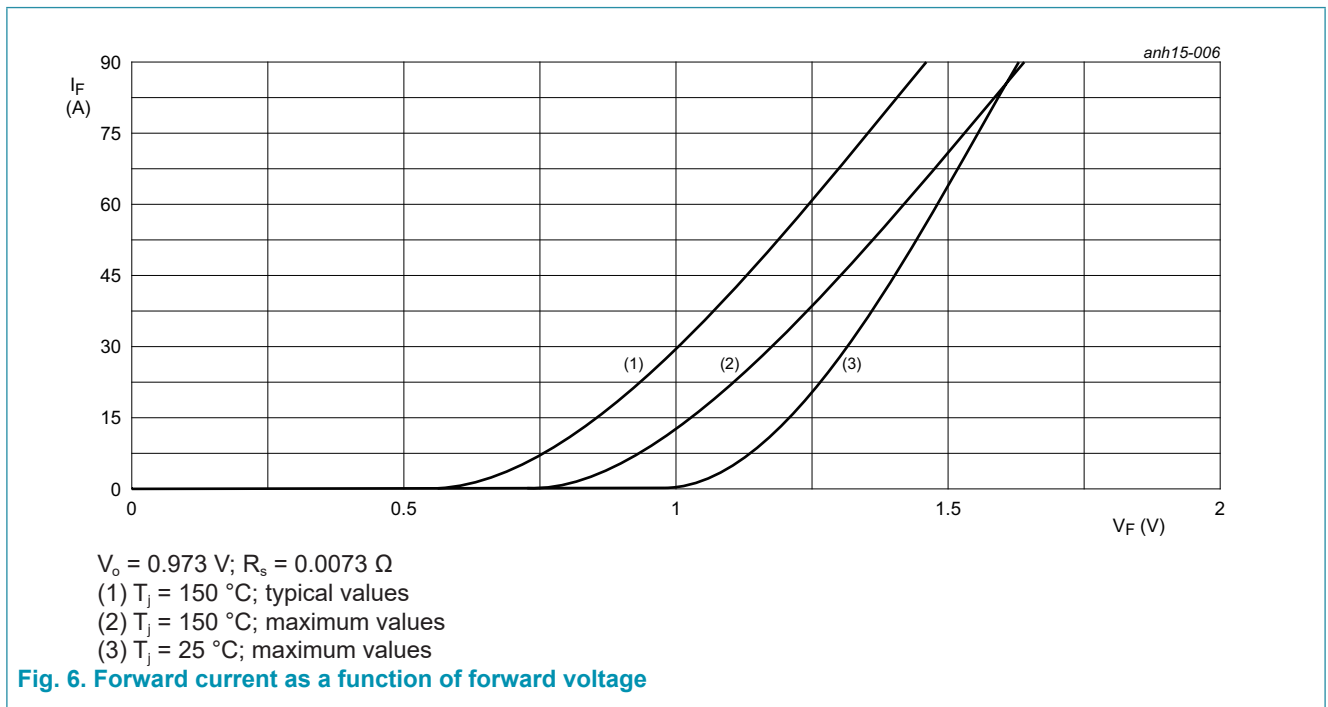


Fig. 5. Transient thermal impedance from junction to mounting base as a function of pulse duration

## 10. Characteristics

Table 7. Characteristics

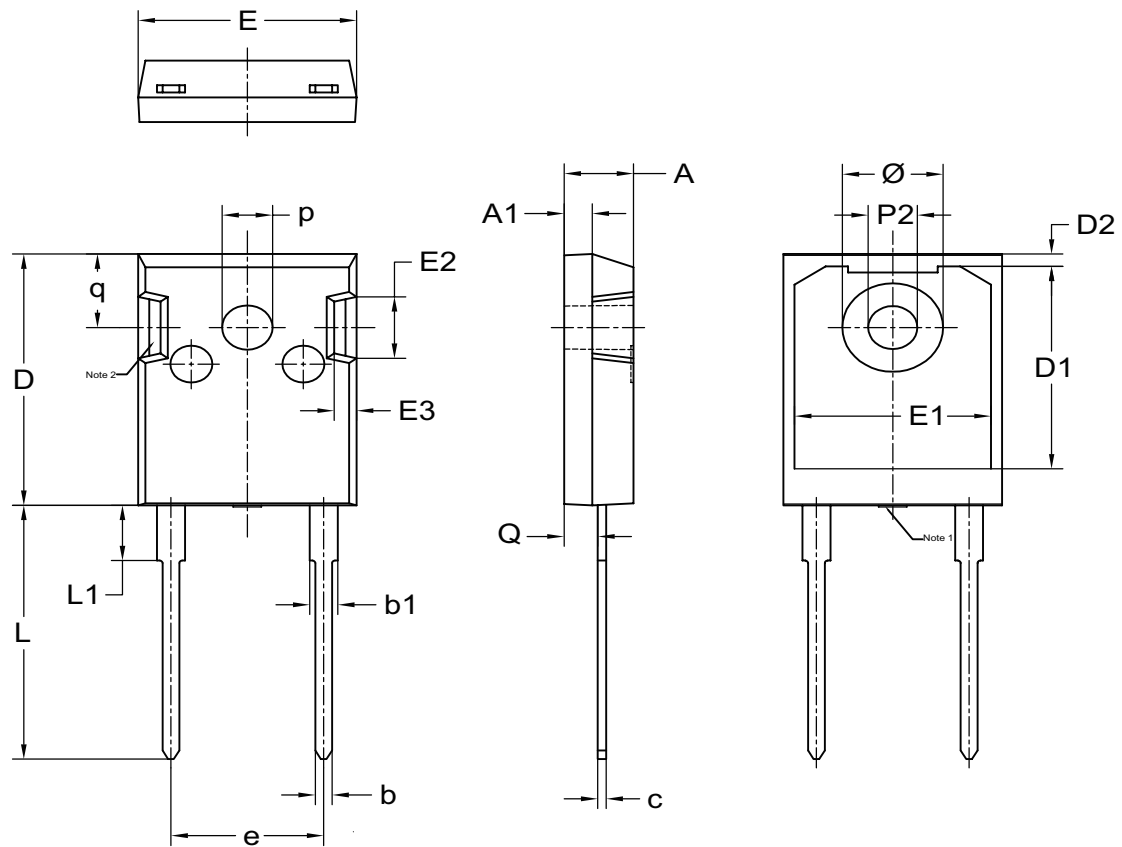
Symbol	Parameter	Conditions	Min	Typ	Max	Unit
<b>Static characteristics</b>						
$V_F$	forward current	$I_F = 45 \text{ A}; T_j = 25 \text{ }^\circ\text{C}; \text{ Fig. 6}$	-	1.2	1.4	V
		$I_F = 45 \text{ A}; T_j = 150 \text{ }^\circ\text{C}; \text{ Fig. 6}$	-	1.1	1.3	V
$I_R$	reverse current	$V_R = 1600 \text{ V}; T_j = 25 \text{ }^\circ\text{C}$	-	-	10	$\mu\text{A}$
		$V_R = 1600 \text{ V}; T_j = 150 \text{ }^\circ\text{C}$	-	-	1.5	mA



### 11. Package outline

Plastic single-ended through-hole package; heatsink mounted; 1 mounting hole; 2 leads TO-247

TO247-2L



UNIT	A	A <sub>1</sub>	b	b <sub>1</sub>	c	D	D <sub>1</sub>	D <sub>2</sub>	E	E <sub>1</sub>	E <sub>2</sub>	E <sub>3</sub>	e	L	L <sub>1</sub>	P <sub>2</sub>	p	Q	q	Ø
mm	5.20	2.10	1.40	2.20	0.70	20.60	17.78	1.20	15.75	14.22	5.20	1.80	10.90	20.72	4.75	3.60	3.70	2.60	6.18	7.30
	4.70	1.90	1.00	1.80	0.50	20.30	17.28	0.80	15.45	13.82	4.80	1.40	BSC	20.22	4.25	3.40	3.50	2.20	5.78	7.10

Note:

1. Mold resin protrusion max 0.127mm.
2. Metal exposed with Sn plating.

## 12. Legal information

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