

1. General description

Power Schottky diode in TO252 (DPAK) surface-mountable plastic package.



2. Features and benefits

- High junction temperature up to 175°C
- Low forward voltage drop, negligible switching losses
- High efficiency

3. Applications

- DC to DC converters
- Freewheeling diode
- OR-ing diode
- Switched mode power supply rectifier

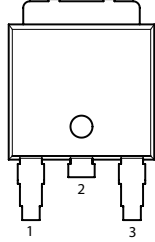
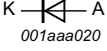
4. Quick reference data

Table 1. Quick reference data

Symbol	Parameter	Conditions	Notes	Values			Unit
Absolute maximum rating							
V _{RRM}	repetitive peak reverse voltage			200			V
I _{F(AV)}	average forward current	δ = 0.5 ; square-wave pulse; T _{mb} ≤ 145 °C; Fig. 1 ; Fig. 2 ; Fig. 3		30			A
Symbol	Parameter	Conditions	Notes	Min	Typ	Max	Unit
Static characteristics							
V _F	forward voltage	I _F = 30 A; T _j = 25 °C; Fig. 6		-	0.93	1.03	V
I _R	reverse current	V _R = 200 V; T _j = 25 °C		-	0.1	5	μA

5. Pinning information

Table 2. Pinning information

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

6. Ordering information

Table 3. Ordering information

Type number	Package name	Orderable part number	Packing method	Small packing quantity	Package version	Package issue date
WN3S30200DT	TO252	WN3S30200DTJ	Reel	2500	TO252d	07-Sep-2022

7. Marking

Table 4. Marking codes

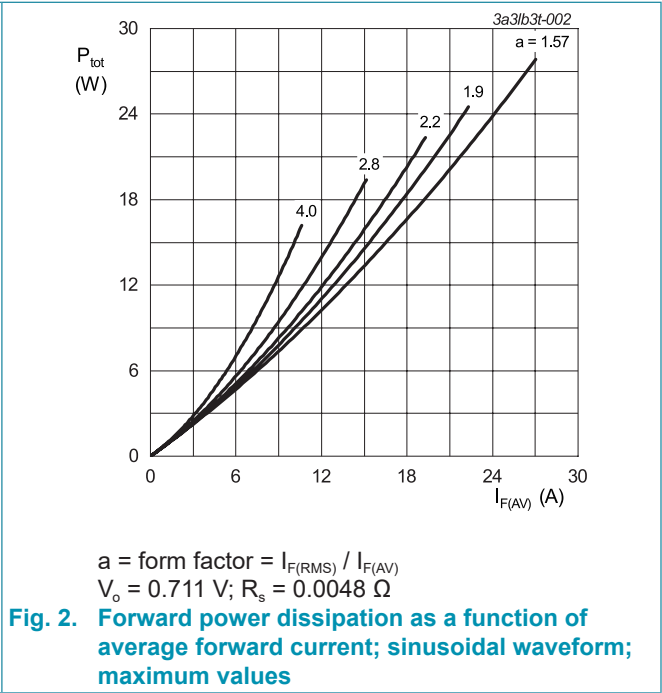
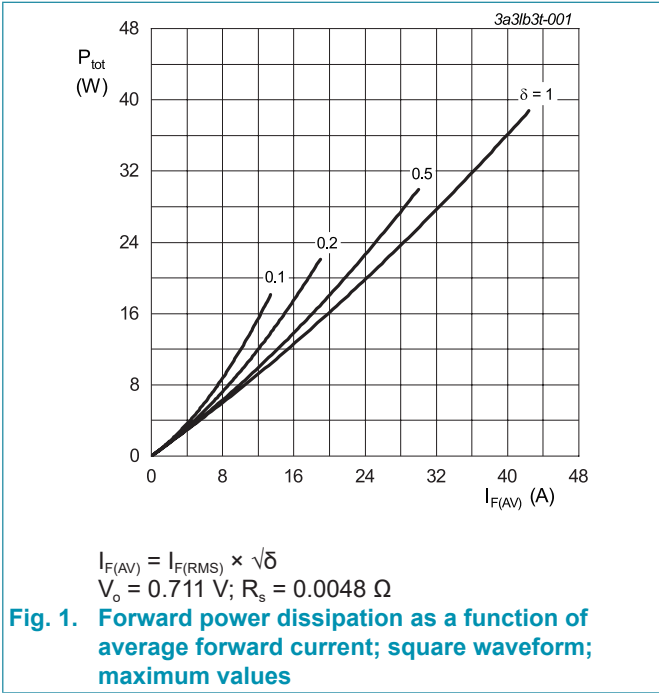
Type number	Marking codes
WN3S30200DT	WN3S30 200DT

8. Limiting values

Table 5. Limiting values
In accordance with the Absolute Maximum Rating System (IEC 60134).

Symbol	Parameter	Conditions	Notes	Values	Unit
V _{RRM}	repetitive peak reverse voltage			200	V
V _{RWM}	crest working reverse voltage			200	V
V _R	reverse voltage	DC		200	V
I _{F(AV)}	average forward current	δ = 0.5 ; square-wave pulse; T _{mb} ≤ 145 °C; Fig. 1; Fig. 2; Fig. 3		30	A
I _{FSM}	non-repetitive peak forward current	t _p = 10 ms; T _{j(init)} = 25 °C; sine-wave pulse; Fig. 4		300	A
		t _p = 8.3 ms; T _{j(init)} = 25 °C; sine-wave pulse		330	A
T _{stg}	storage temperature			-40 to 175	°C
T _j	junction temperature		[1]	-40 to 175	°C

[1] The heat generated must be less than the thermal conductivity from Junction to Ambient: $dP_{tot}/dT_j < 1/R_{th(j-a)}$



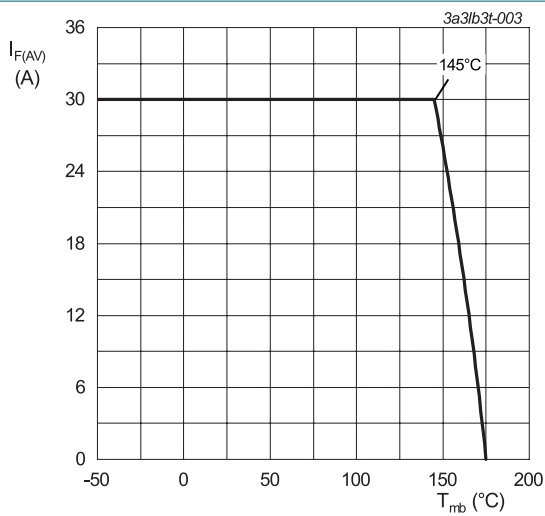


Fig. 3. Average forward current as a function of mounting base temperature; maximum values

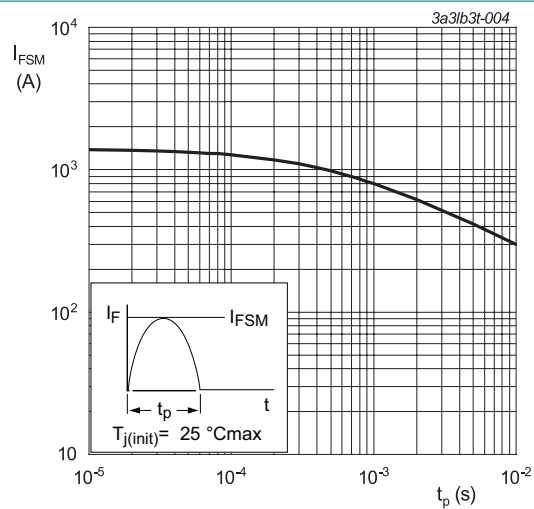
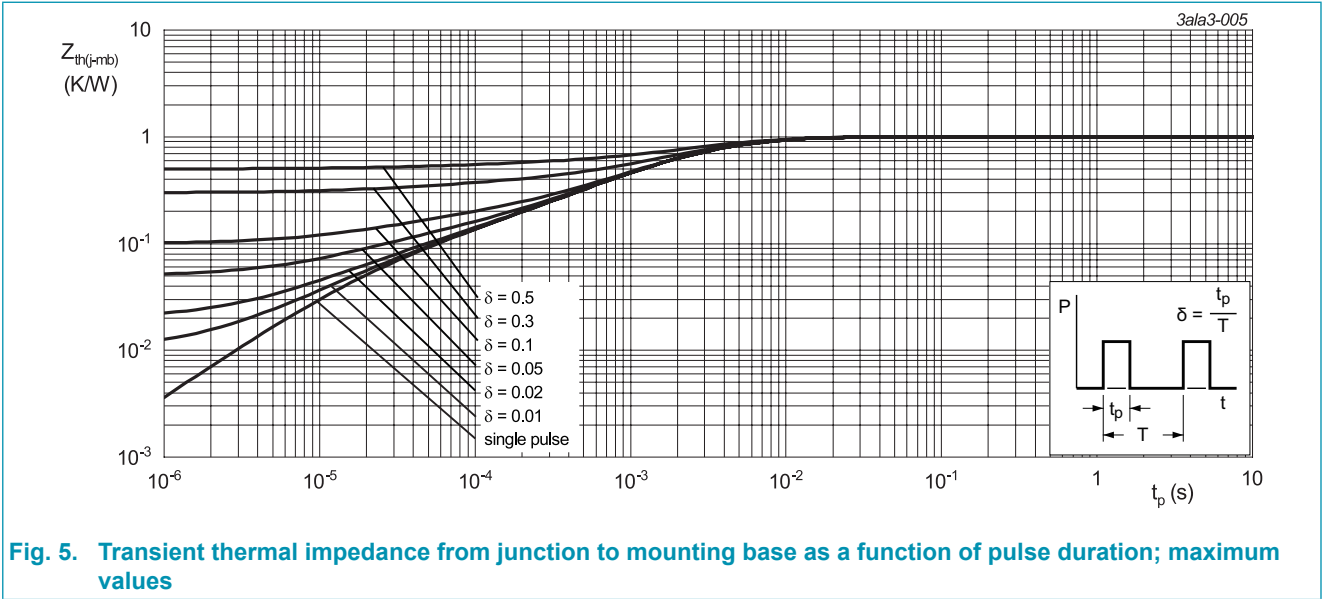


Fig. 4. Non-repetitive peak forward current as a function of pulse width; sinusoidal waveform; maximum values

9. Thermal characteristics

Table 6. Thermal characteristics

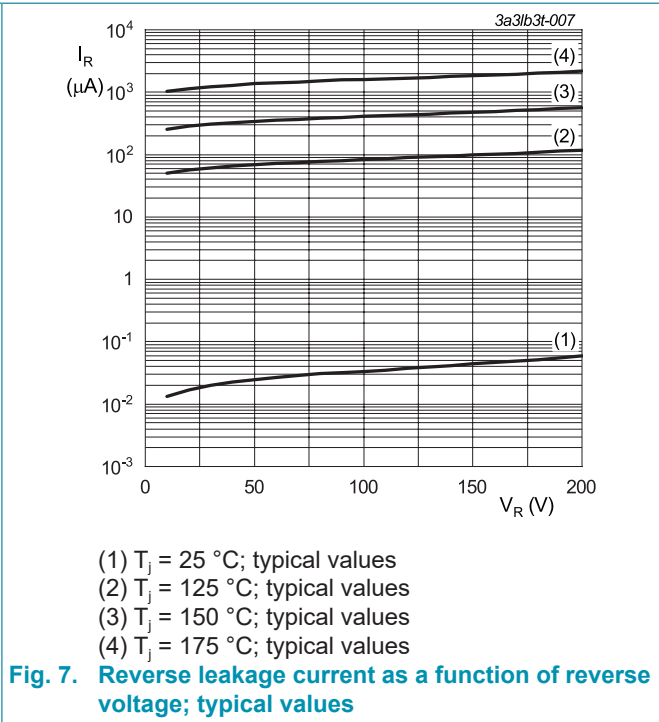
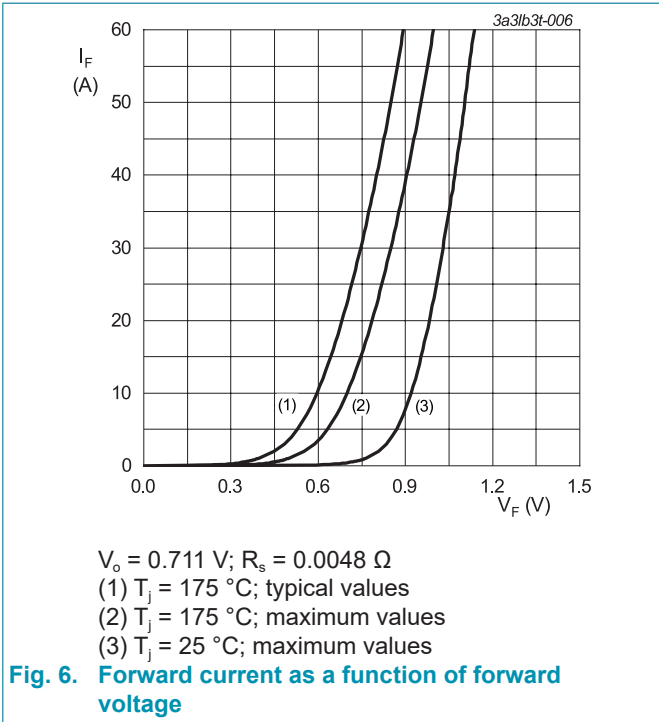
Symbol	Parameter	Conditions	Notes	Min	Typ	Max	Unit
$R_{th(j-mb)}$	thermal resistance from junction to mounting base	Fig. 5		-	-	1	K/W
$R_{th(j-a)}$	thermal resistance from junction to ambient	in free air		-	50	-	K/W

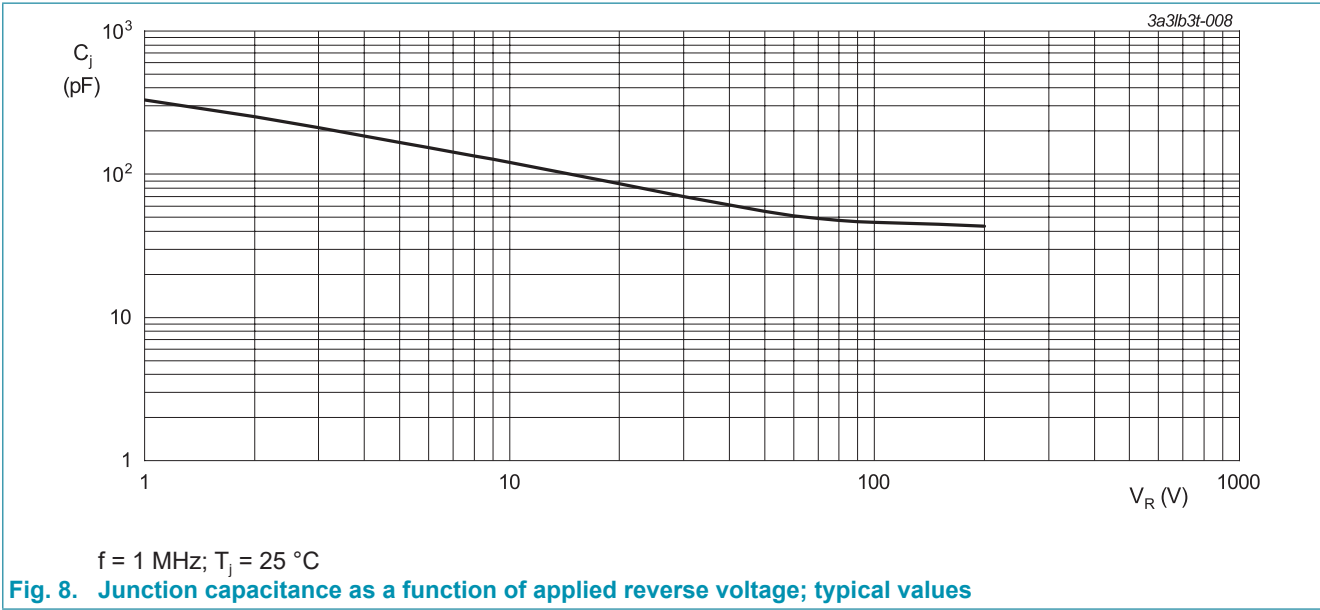


10. Characteristics

Table 7. Characteristics

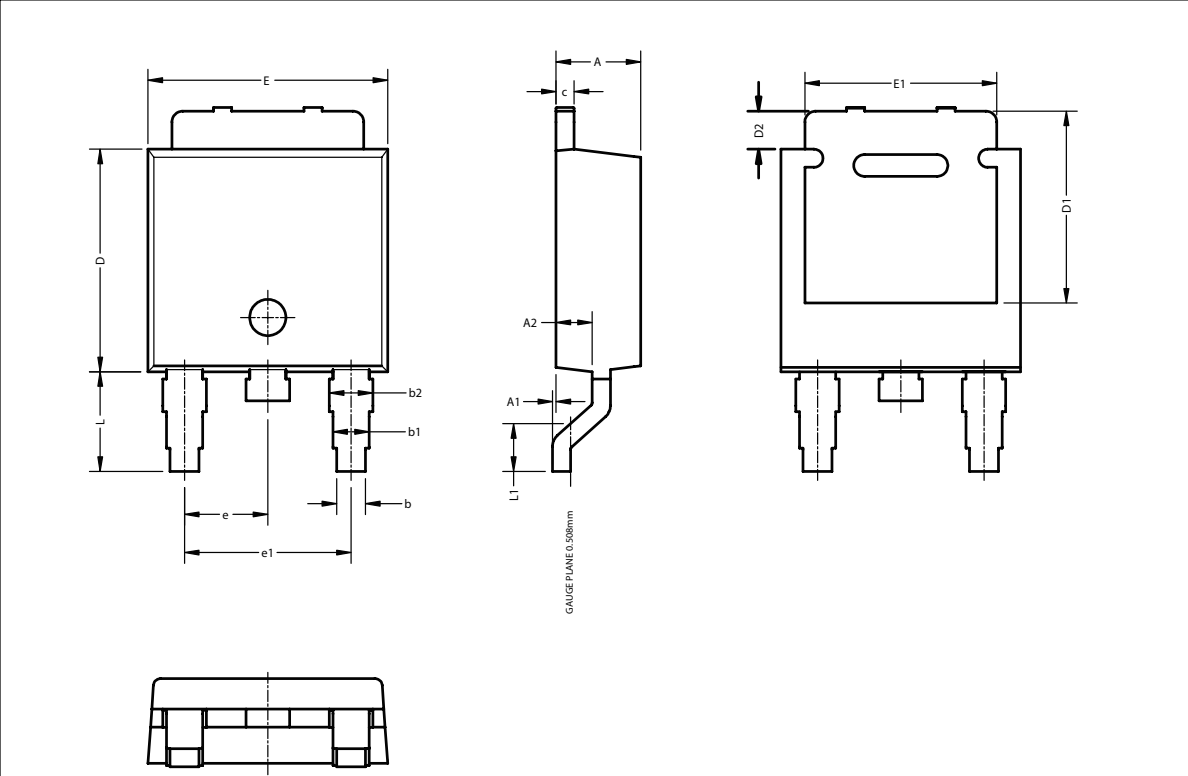
Symbol	Parameter	Conditions	Notes	Min	Typ	Max	Unit
Static characteristics							
V _F	forward voltage	I _F = 30 A; T _J = 25 °C; Fig. 6		-	0.93	1.03	V
		I _F = 30 A; T _J = 125 °C; Fig. 6		-	0.80	-	V
		I _F = 10 A; T _J = 25 °C; Fig. 6		-	0.80	-	V
		I _F = 10 A; T _J = 125 °C; Fig. 6		-	0.67	-	V
		I _F = 5 A; T _J = 25 °C; Fig. 6		-	0.75	-	V
		I _F = 5 A; T _J = 125 °C; Fig. 6		-	0.60	-	V
I _R	reverse current	V _R = 200 V; T _J = 25 °C; Fig. 7 ; Fig. 8		-	0.1	5	μA
		V _R = 200 V; T _J = 125 °C; Fig. 7 ; Fig. 8		-	0.2	-	mA





11. Package outline

Plastic single-ended surface-mounted package (DPAK); 3 leads (one lead cropped) TO252



Note:
1. All dimensions do not include mold flash & gate remain and metal protrusion.

Unit	A	A1	A2	b	b1	b2	c	D	D1	D2	E	E1	e	e1	L	L1
min	2.16	0.00	0.90	0.70	0.86	1.06	0.46	5.97	5.05	0.98	6.45	5.20	2.30	4.60	2.60	1.25
mm																
nom																
max	2.41	0.10	1.10	0.90	1.11	1.32	0.58	6.22	5.35	1.18	6.75	5.40			2.90	1.65

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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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