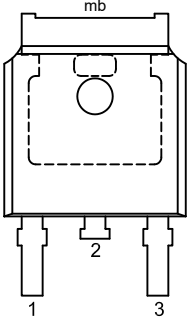
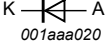


5. Pinning information

Table 2. Pinning information

Pin	Symbol	Description	Simplified outline	Graphic symbol
1	n.c.	not connected	 DPAK (TO252N)	
2	K	cathode[1]		
3	A	anode		
mb	mb	mounting base; connected to cathode		

[1] It is not possible to connect to pin 2 of the SOT428 package.

6. Ordering information

Table 3. Ordering information

Type number	Package		
	Name	Description	Version
BYV10ED-600P	DPAK	plastic single-ended surface-mounted package (DPAK); 3 leads (one lead cropped)	TO252N

7. Marking

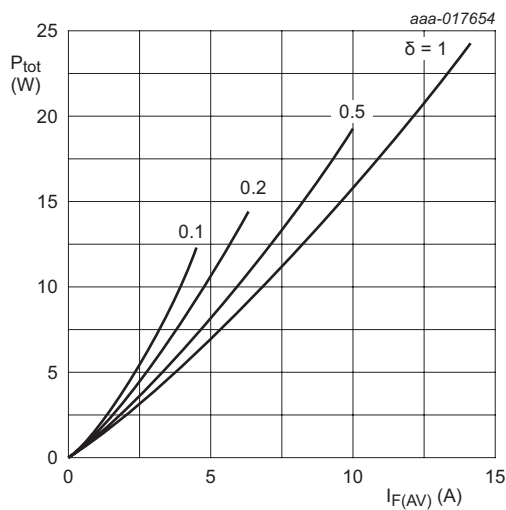
Table 4. Marking codes

Type number	Marking code
BYV10ED-600P	BYV10ED-600P

8. Limiting values

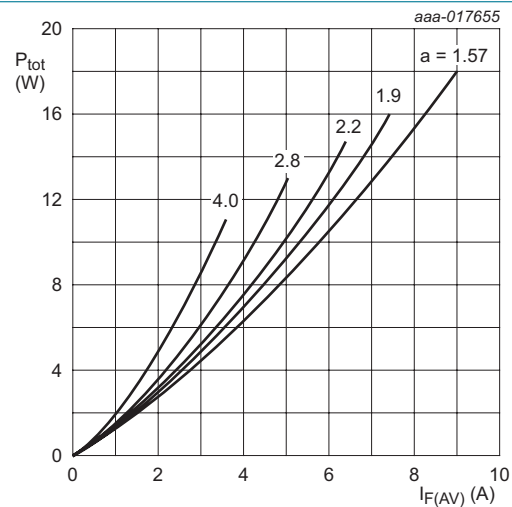
Table 5. Limiting values
In accordance with the Absolute Maximum Rating System (IEC 60134).

Symbol	Parameter	Conditions	Values	Unit
V_{RRM}	repetitive peak reverse voltage		600	V
V_{RWM}	crest working reverse voltage		600	V
V_R	reverse voltage	DC	600	V
$I_{F(AV)}$	average forward current	$\delta = 0.5$; square-wave pulse; $T_{mb} \leq 118\text{ }^{\circ}\text{C}$; Fig. 1 ; Fig. 2 ; Fig. 3	10	A
I_{FRM}	repetitive peak forward current	$\delta = 0.5$; $t_p = 25\text{ }\mu\text{s}$; $T_{mb} \leq 118\text{ }^{\circ}\text{C}$; square-wave pulse	20	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; Fig. 4	70	A
		$t_p = 8.3\text{ ms}$; $T_{j(\text{init})} = 25\text{ }^{\circ}\text{C}$; sine-wave pulse;	80	A
T_{stg}	storage temperature		-40 to 175	$^{\circ}\text{C}$
T_j	junction temperature		175	$^{\circ}\text{C}$



$I_{F(AV)} = I_{F(RMS)} \times \sqrt{\delta}$
 $V_o = 1.241\text{ V}; R_s = 0.034\text{ }\Omega$

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



$a = \text{form factor} = I_{F(RMS)} / I_{F(AV)}$
 $V_o = 1.241\text{ V}; R_s = 0.034\text{ }\Omega$

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

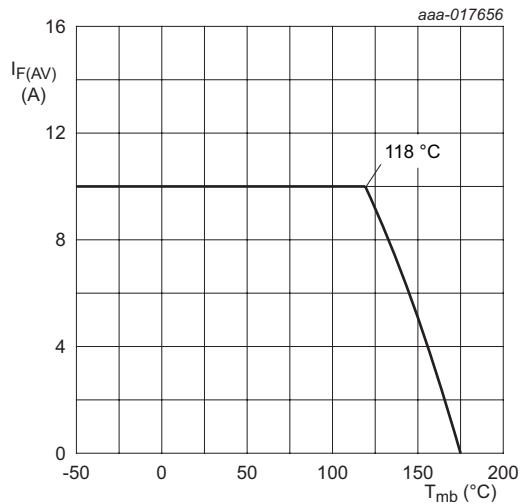


Fig. 3. Forward current as a function of mounting base temperature; maximum values

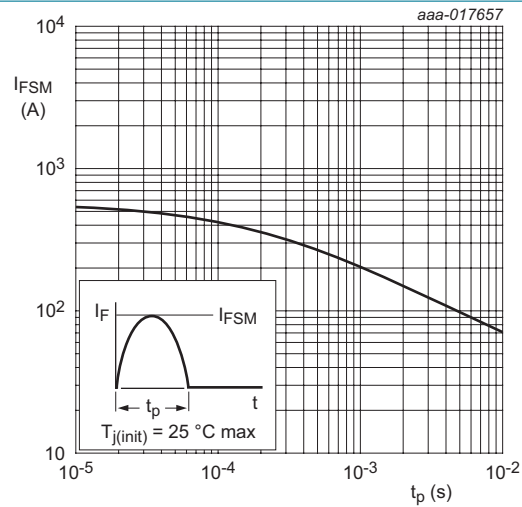
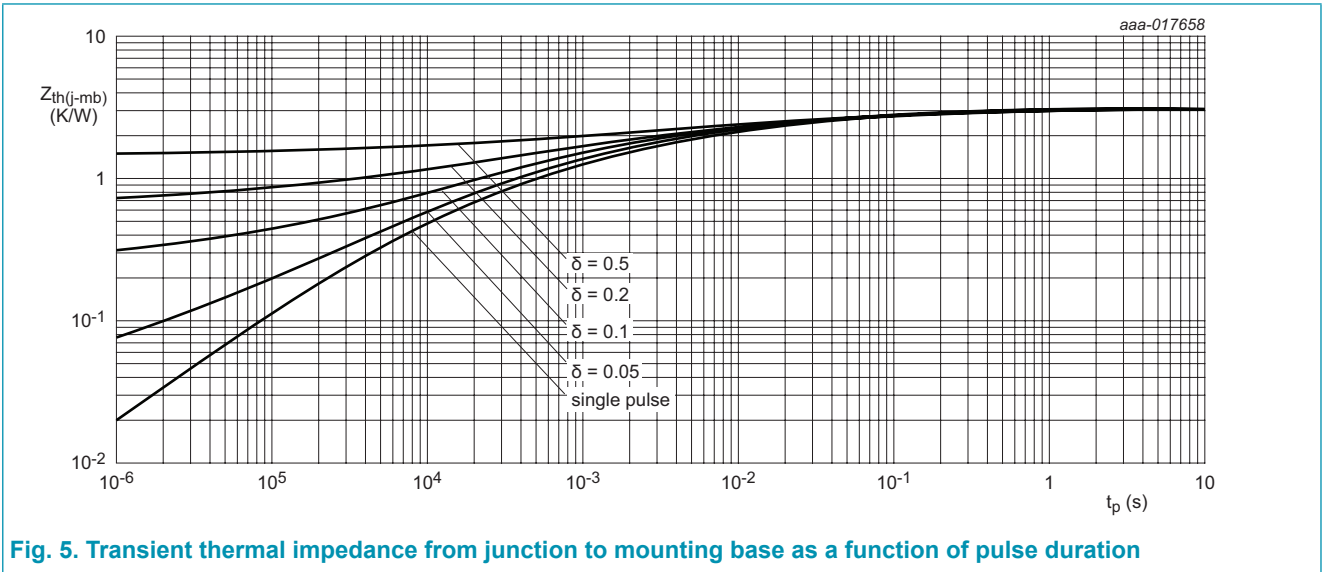


Fig. 4. Non-repetitive peak forward current as a function of pulse width; sinusoidal waveform; maximum values

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	With heatsink compound; Fig. 5		-	-	3	K/W
$R_{th(j-a)}$	thermal resistance from junction to ambient free air	in free air		-	50	-	K/W



10. Characteristics

Table 7. Characteristics

Symbol	Parameter	Conditions		Min	Typ	Max	Unit
Static characteristics							
V _F	forward current	I _F = 10 A; T _j = 25 °C; Fig. 6		-	1.5	2	V
		I _F = 10 A; T _j = 150 °C; Fig. 6		-	-	1.6	V
I _R	reverse current	V _R = 600 V; T _j = 25 °C		-	-	10	μA
		V _R = 600 V; T _j = 150 °C		-	-	500	μA
Dynamic characteristics							
Q _r	reverse charge	I _F = 10 A; V _R = 200 V; dI _F /dt = 200 A/μs; T _j = 25 °C; Fig. 7		-	123	-	nC
		I _F = 10 A; V _R = 200 V; dI _F /dt = 200 A/μs; T _j = 125 °C; Fig. 7		-	305	-	nC
t _{rr}	reverse recovery time	I _F = 1 A; V _R = 30 V; dI _F /dt = 50 A/μs; T _j = 25 °C; Fig. 7		-	35	50	ns
		I _F = 10 A; V _R = 200 V; dI _F /dt = 200 A/μs; T _j = 25 °C; Fig. 7		-	50	-	ns
		I _F = 10 A; V _R = 200 V; dI _F /dt = 200 A/μs; T _j = 125 °C; Fig. 7		-	78	-	ns
I _{RM}	peak reverse recovery current	I _F = 10 A; V _R = 200 V; dI _F /dt = 200 A/μs; T _j = 25 °C; Fig. 7		-	4.9	-	A
		I _F = 10 A; V _R = 200 V; dI _F /dt = 200 A/μs; T _j = 125 °C; Fig. 7		-	7.8	-	A
E _{as}	non-repetitive avalanche energy	I _R = 1.2 A; T _{j(initial)} = 25 °C; L = 15 mH		10.8	-	-	mJ

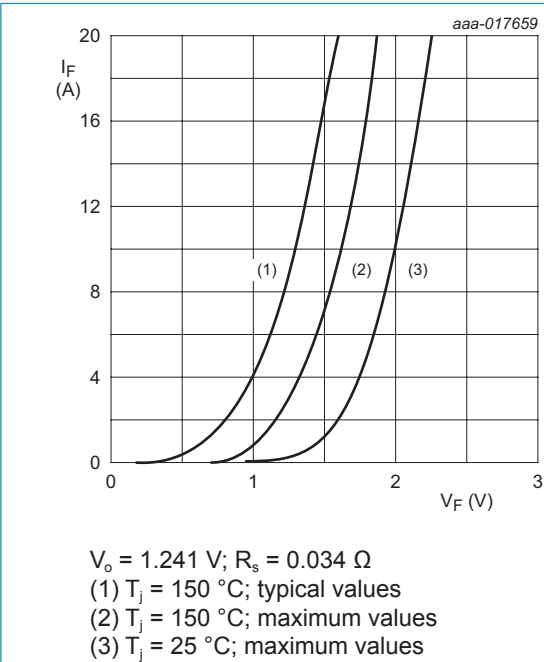


Fig. 6. Forward current as a function of forward voltage

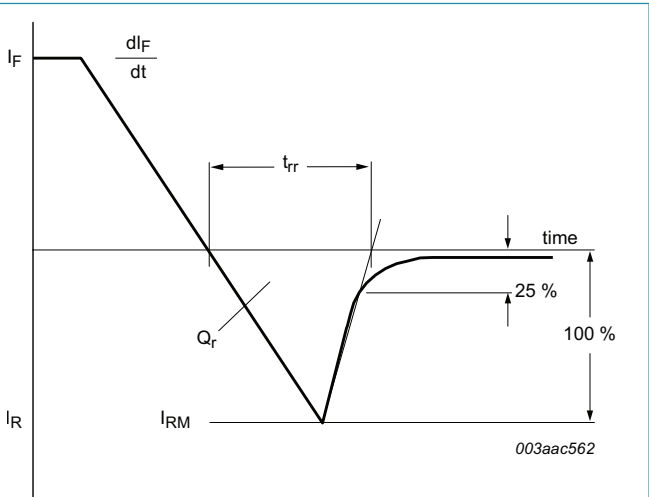


Fig. 7. Reverse recovery definitions; ramp recovery

11. Package outline

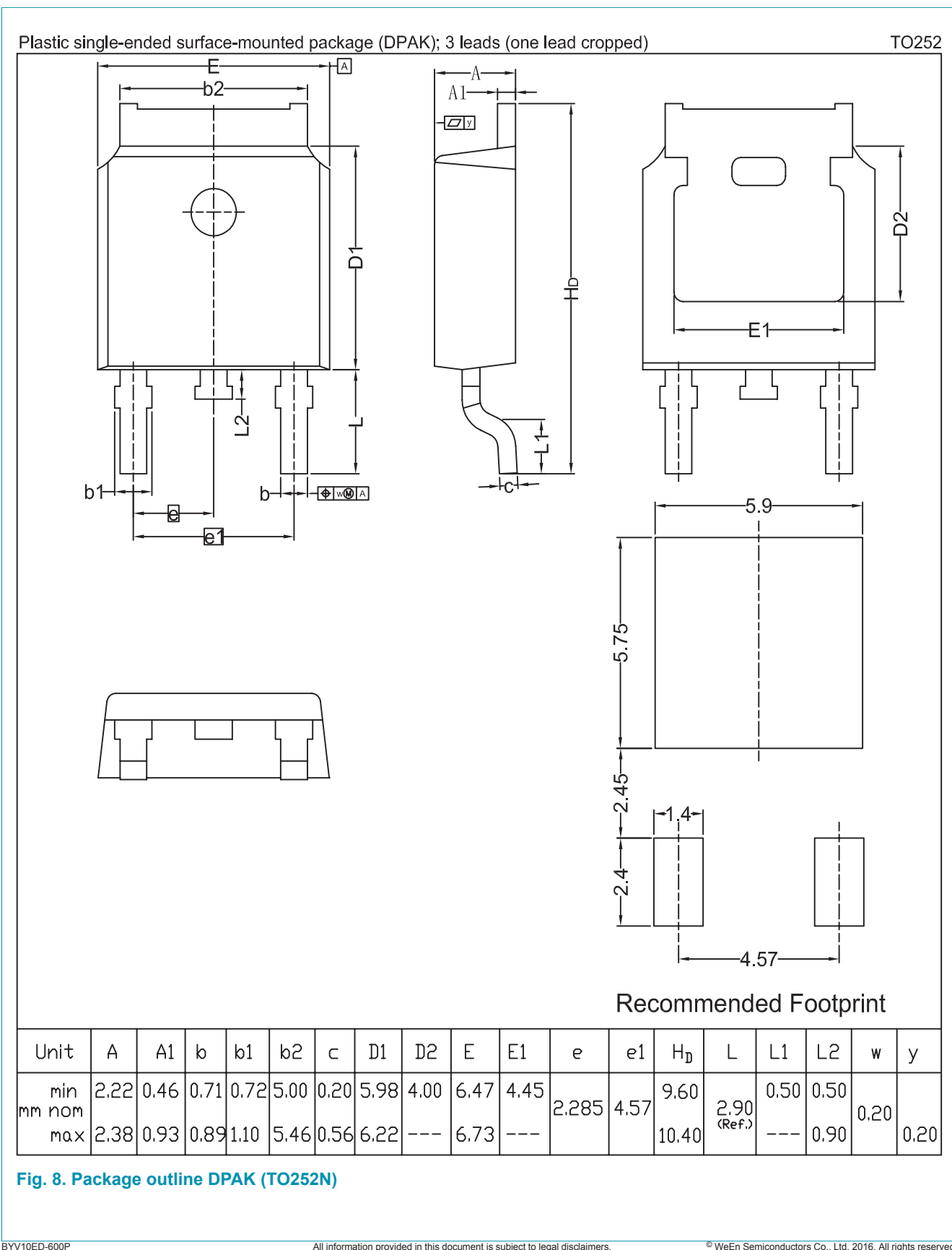


Fig. 8. Package outline DPAK (TO252N)

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.
Preliminary [short] data sheet	Qualification	This document contains data from the preliminary specification.
Product [short] data sheet	Production	This document contains the product specification.

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- [2] The term 'short data sheet' is explained in section "Definitions".
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13. Contents

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 8

13. Contents 10

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