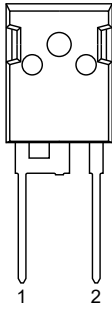
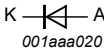


Symbol	Parameter	Conditions		Min	Typ	Max	Unit
		$I_F = 60\text{ A}$; $V_R = 400\text{ V}$; $di_F/dt = 200\text{ A}/\mu\text{s}$; $T_j = 125\text{ }^\circ\text{C}$; Fig. 7		-	101	-	ns

5. Pinning information

Table 2. Pinning information

Pin	Symbol	Description	Simplified outline	Graphic symbol
1	K	cathode	 TO-247 (SOD142)	
2	A	anode		
mb	mb	mounting base; connected to cathode		

6. Ordering information

Table 3. Ordering information

Type number	Package		
	Name	Description	Version
BYC60W-600P	TO-247	Plastic Single-ended through-hole package; Heatsink mounted; 1 mounting hole; 2-lead TO-247	SOD142

7. Limiting values

Table 4. Limiting values
In accordance with the Absolute Maximum Rating System (IEC 60134).

Symbol	Parameter	Conditions		Min	Max	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	δ = 0.5 ; T _{mb} ≤ 41 °C; square-wave pulse; Fig. 1; Fig. 2; Fig. 3		-	60	A
I _{FRM}	repetitive peak forward current	δ = 0.5 ; t _p = 25 μs; T _{mb} ≤ 41 °C; square-wave pulse		-	120	A
I _{FSM}	non-repetitive peak forward current	t _p = 10 ms; T _{j(init)} = 25 °C; sine-wave pulse; Fig. 4		-	600	A
		t _p = 8.3 ms; T _{j(init)} = 25 °C; sine-wave pulse; Fig. 4		-	660	A
T _{stg}	storage temperature			-55	175	°C
T _j	junction temperature			-	175	°C

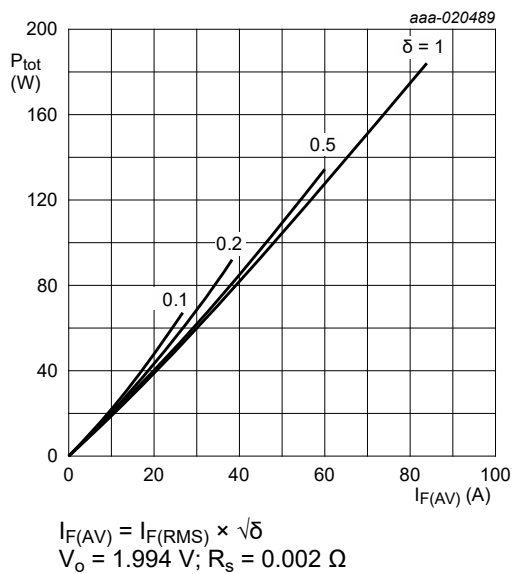


Fig. 1. Forward power dissipation as a function of average forward current; square waveform; maximum values

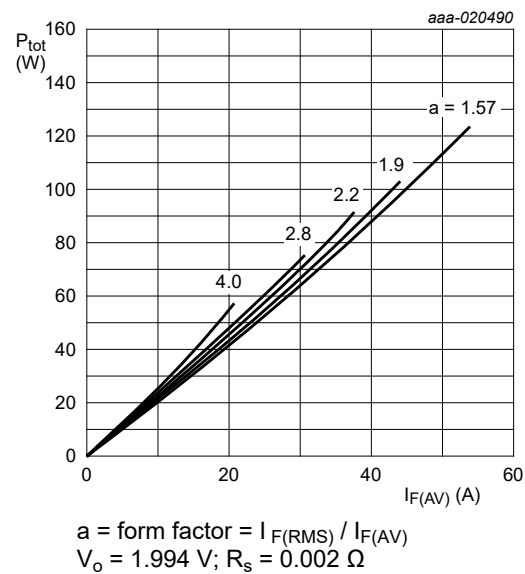


Fig. 2. Forward power dissipation as a function of average forward current; sinusoidal waveform; maximum values

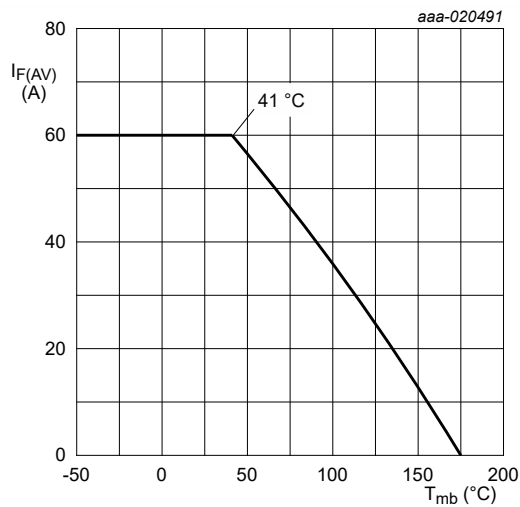


Fig. 3. Non-repetitive peak forward current as a function of pulse width; sinusoidal waveform; maximum values

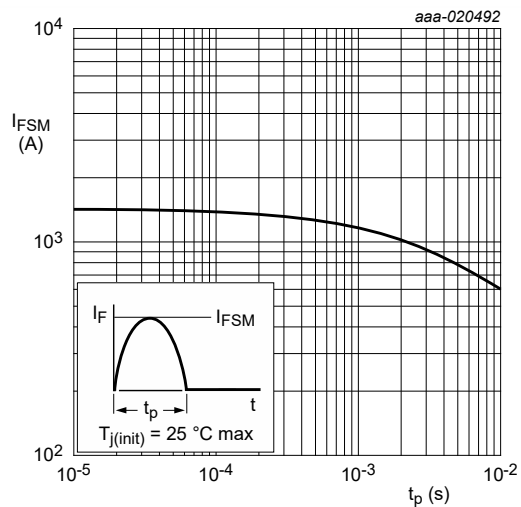
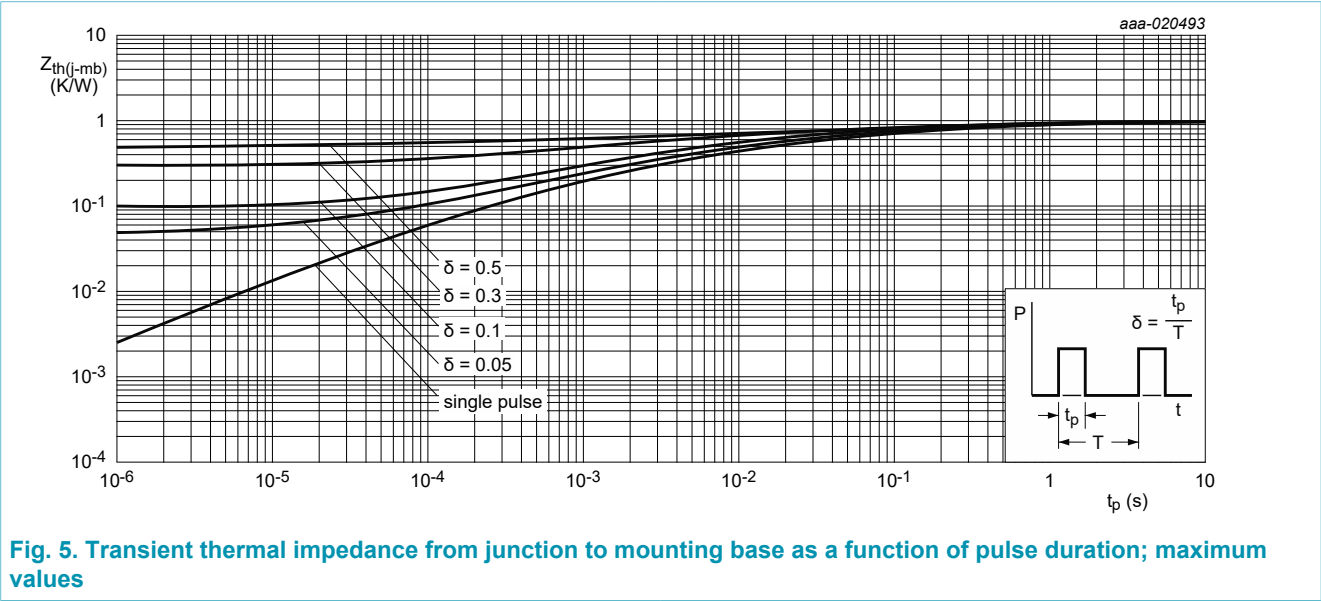


Fig. 4. Non-repetitive peak forward current as a function of pulse width; sinusoidal waveform; maximum values

8. Thermal characteristics

Table 5. Thermal characteristics

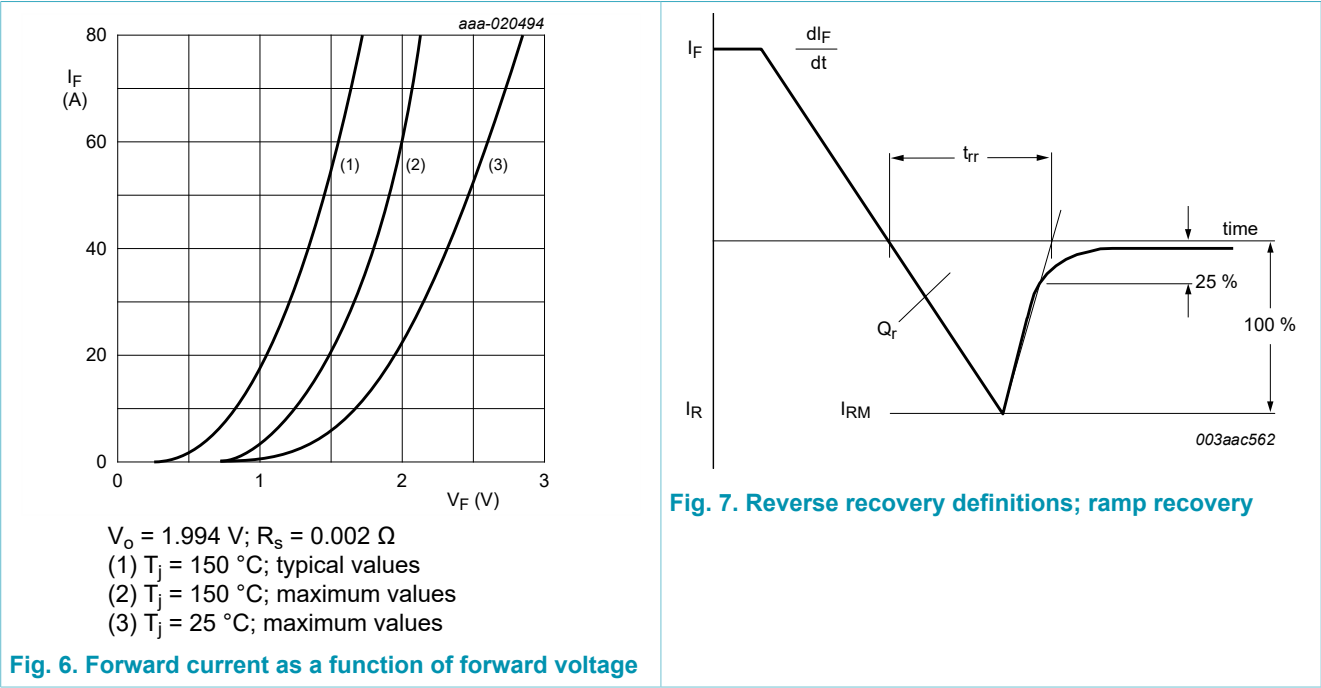
Symbol	Parameter	Conditions	Min	Typ	Max	Unit
$R_{th(j-mb)}$	thermal resistance from junction to mounting base	with heatsink compound; Fig. 5	-	-	1	K/W
$R_{th(j-a)}$	thermal resistance from junction to ambient free air	in free air	-	45	-	K/W



9. Characteristics

Table 6. Characteristics

Symbol	Parameter	Conditions		Min	Typ	Max	Unit
Static characteristics							
V _F	forward voltage	I _F = 60 A; T _j = 25 °C; Fig. 6		-	2	2.6	V
		I _F = 60 A; T _j = 150 °C; Fig. 6		-	1.55	2	V
I _R	reverse current	V _R = 600 V; T _j = 25 °C		-	2	10	μA
		V _R = 600 V; T _j = 125 °C		-	-	500	μA
Dynamic characteristics							
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		-	-	50	ns
		I _F = 60 A; V _R = 400 V; dI _F /dt = 200 A/μs; T _j = 25 °C; Fig. 7		-	40	-	ns
		I _F = 60 A; V _R = 400 V; dI _F /dt = 200 A/μs; T _j = 125 °C; Fig. 7		-	101	-	ns
I _{RM}	peak reverse recovery current	I _F = 60 A; V _R = 400 V; dI _F /dt = 200 A/μs; T _j = 25 °C; Fig. 7		-	3.7	-	A
		I _F = 60 A; V _R = 200 V; dI _F /dt = 200 A/μs; T _j = 125 °C; Fig. 7		-	11	-	A
Q _r	recovered charge	I _F = 60 A; V _R = 400 V; dI _F /dt = 200 A/μs; T _j = 25 °C; Fig. 7		-	74	-	nC
		I _F = 60 A; V _R = 400 V; dI _F /dt = 200 A/μs; T _j = 125 °C; Fig. 7		-	559	-	nC



10. Package outline

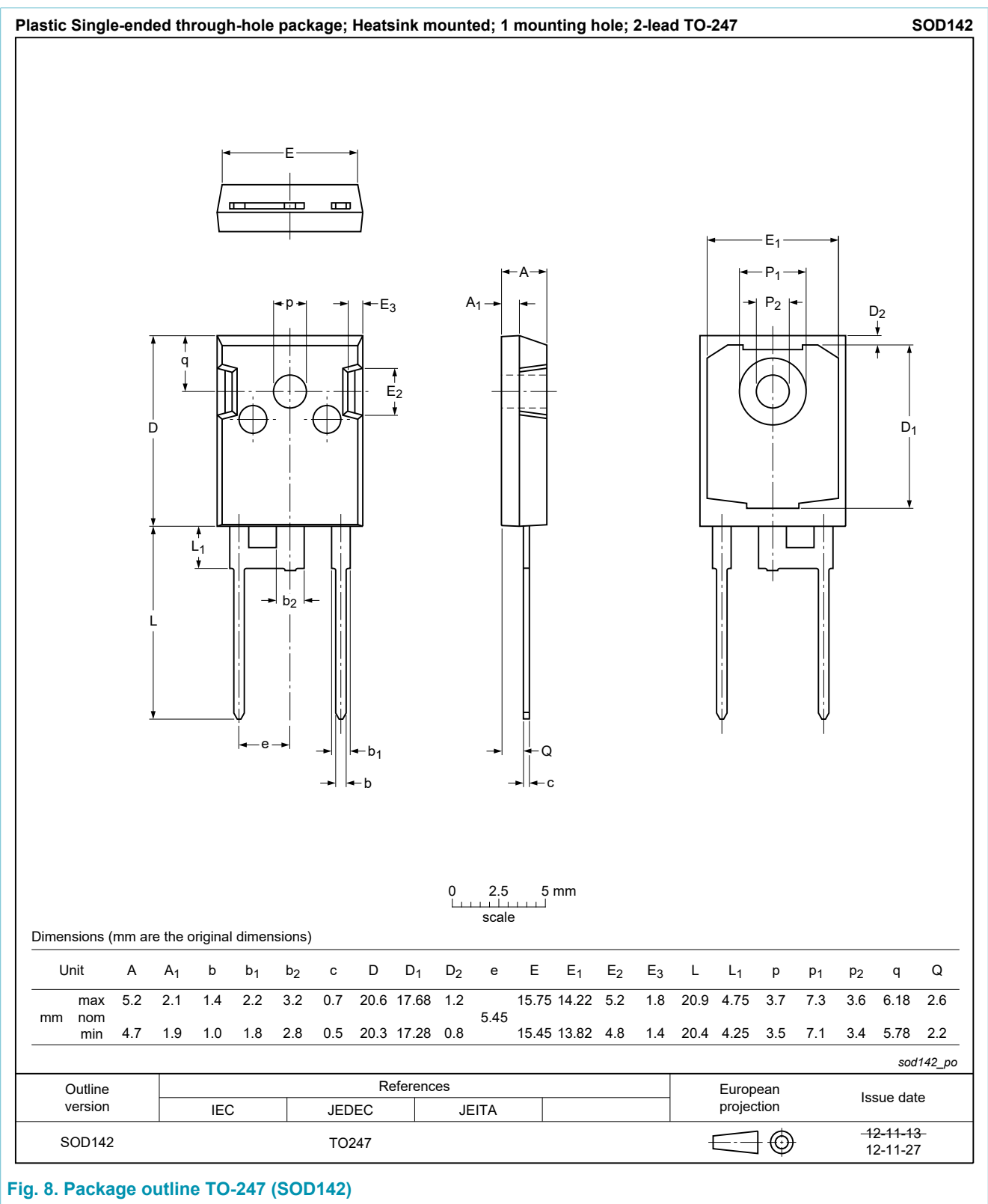


Fig. 8. Package outline TO-247 (SOD142)

11. 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.
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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