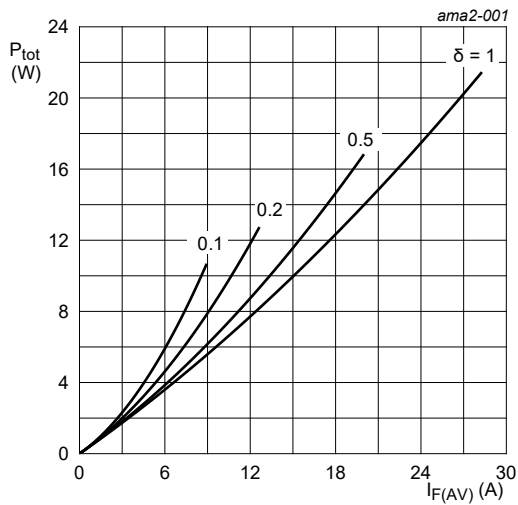


7. Limiting values

Table 4. Limiting values

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

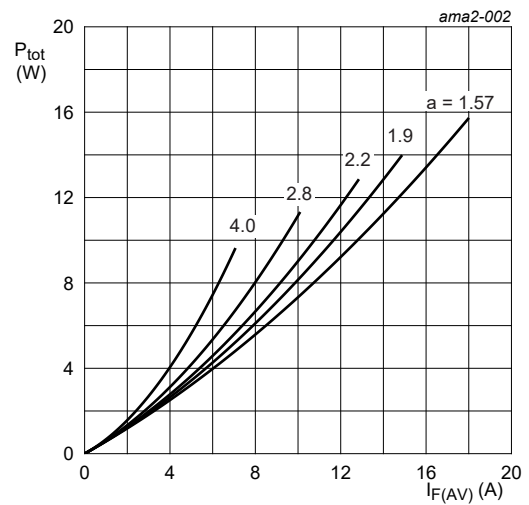
Symbol	Parameter	Conditions	Min	Max	Unit
V_{RRM}	repetitive peak reverse voltage		-	100	V
V_{RWM}	limiting crest working reverse voltage		-	100	V
V_R	limiting reverse voltage	DC	-	100	V
$I_{F(AV)}$	average forward current	$\delta = 0.5$; $T_{mb} \leq 133\text{ }^\circ\text{C}$; square-wave pulse; per diode; Fig. 1 ; Fig. 2 ; Fig. 3	-	20	A
$I_{O(AV)}$	average output current	$\delta = 0.5$; $T_{mb} \leq 130\text{ }^\circ\text{C}$; square-wave pulse; both diodes conducting	-	40	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; per diode; Fig. 4	-	380	A
		$t_p = 8.3\text{ ms}$; $T_{j(\text{init})} = 25\text{ }^\circ\text{C}$; sine-wave pulse; per diode	-	418	A
T_{stg}	storage temperature		-40	150	$^\circ\text{C}$
T_j	junction temperature		-	150	$^\circ\text{C}$



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

$$V_o = 0.557\text{ V}; R_s = 0.0071\ \Omega$$

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



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

$$V_o = 0.570\text{ V}; R_s = 0.0071\ \Omega$$

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

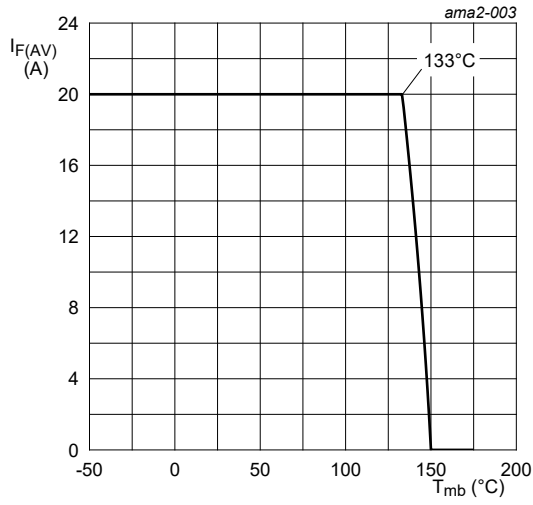


Fig. 3. Average forward current as a function of mounting base temperature; maximum values; per diode

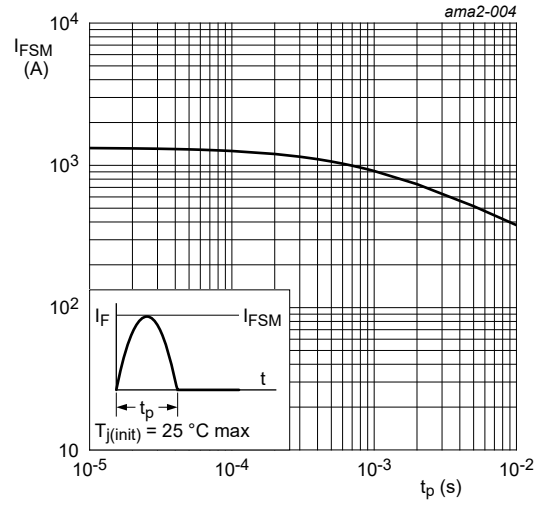


Fig. 4. Non-repetitive peak forward current as a function of pulse width; sinusoidal waveform; maximum values; per diode

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	per diode; Fig. 5	-	-	1	K/W
		both diodes conducting	-	-	0.6	K/W
R _{th(j-a)}	thermal resistance from junction to ambient	in free air	-	60	-	K/W

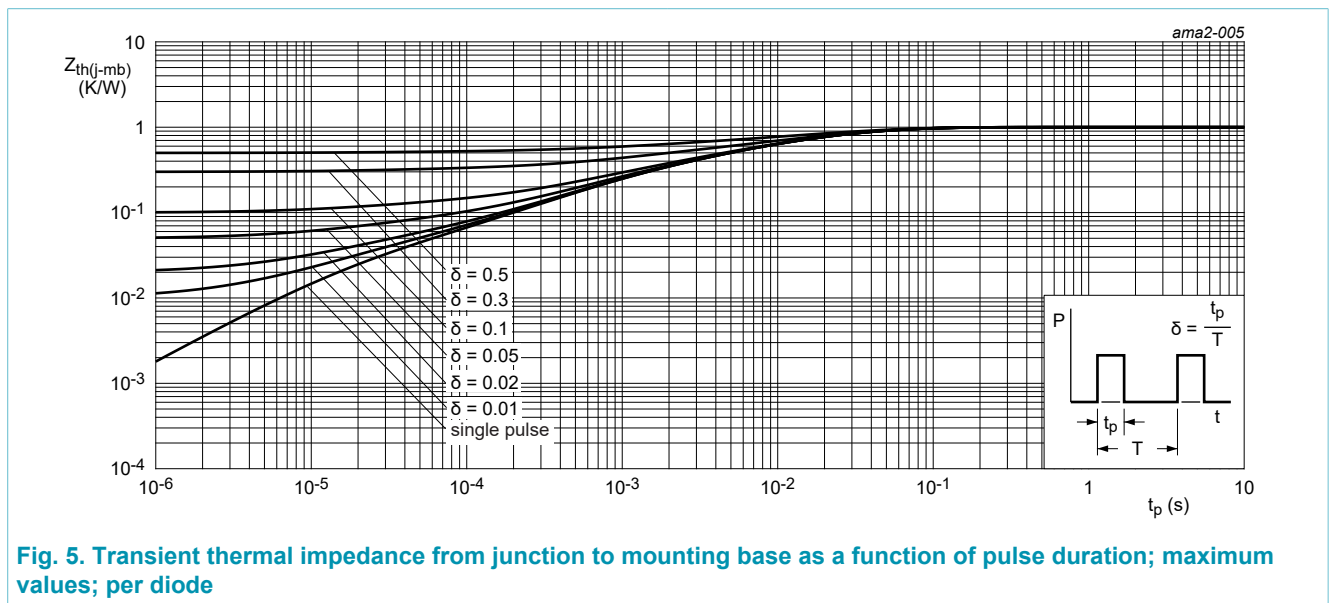
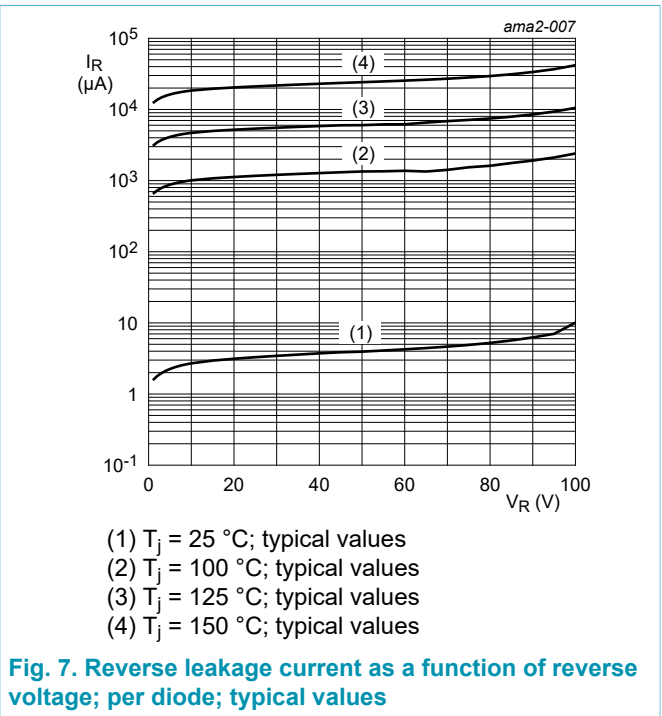
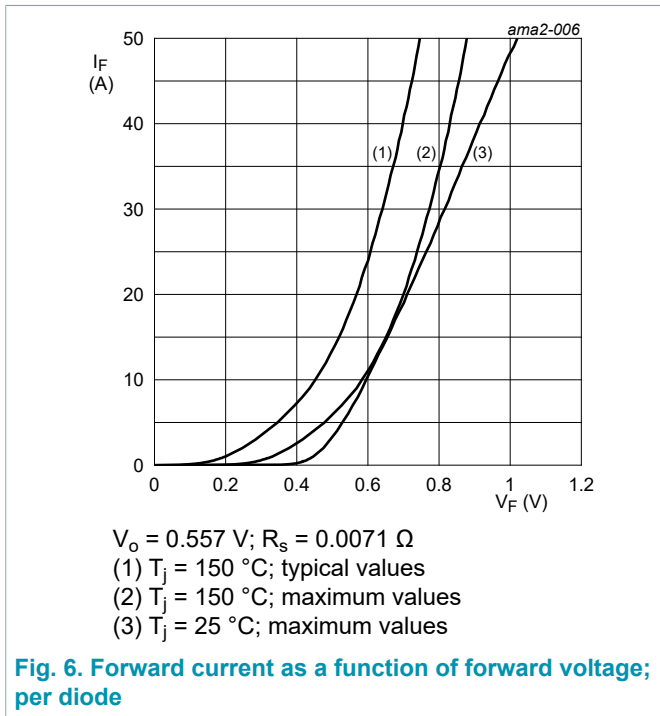


Fig. 5. Transient thermal impedance from junction to mounting base as a function of pulse duration; maximum values; per diode

9. Characteristics

Table 6. Characteristics

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
Static characteristics						
V_F	forward voltage	$I_F = 10\text{ A}; T_j = 25\text{ }^\circ\text{C};$ Fig. 6; per diode	-	0.53	0.59	V
		$I_F = 10\text{ A}; T_j = 125\text{ }^\circ\text{C};$ Fig. 6; per diode	-	0.49	0.56	V
		$I_F = 20\text{ A}; T_j = 25\text{ }^\circ\text{C};$ Fig. 6; per diode	-	0.64	0.71	V
		$I_F = 20\text{ A}; T_j = 125\text{ }^\circ\text{C};$ Fig. 6; per diode	-	0.61	0.68	V
I_R	reverse current	$V_R = 100\text{ V}; T_j = 25\text{ }^\circ\text{C};$ Fig. 7; Fig. 8; per diode	-	-	50	μA
		$V_R = 100\text{ V}; T_j = 125\text{ }^\circ\text{C};$ Fig. 7; Fig. 8; per diode	-	-	30	mA



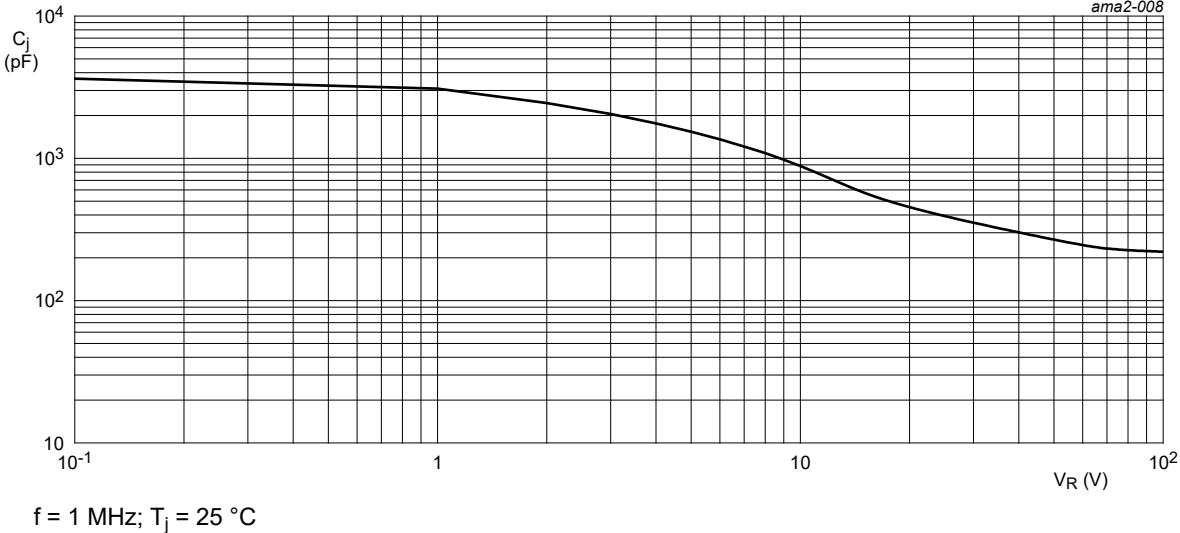
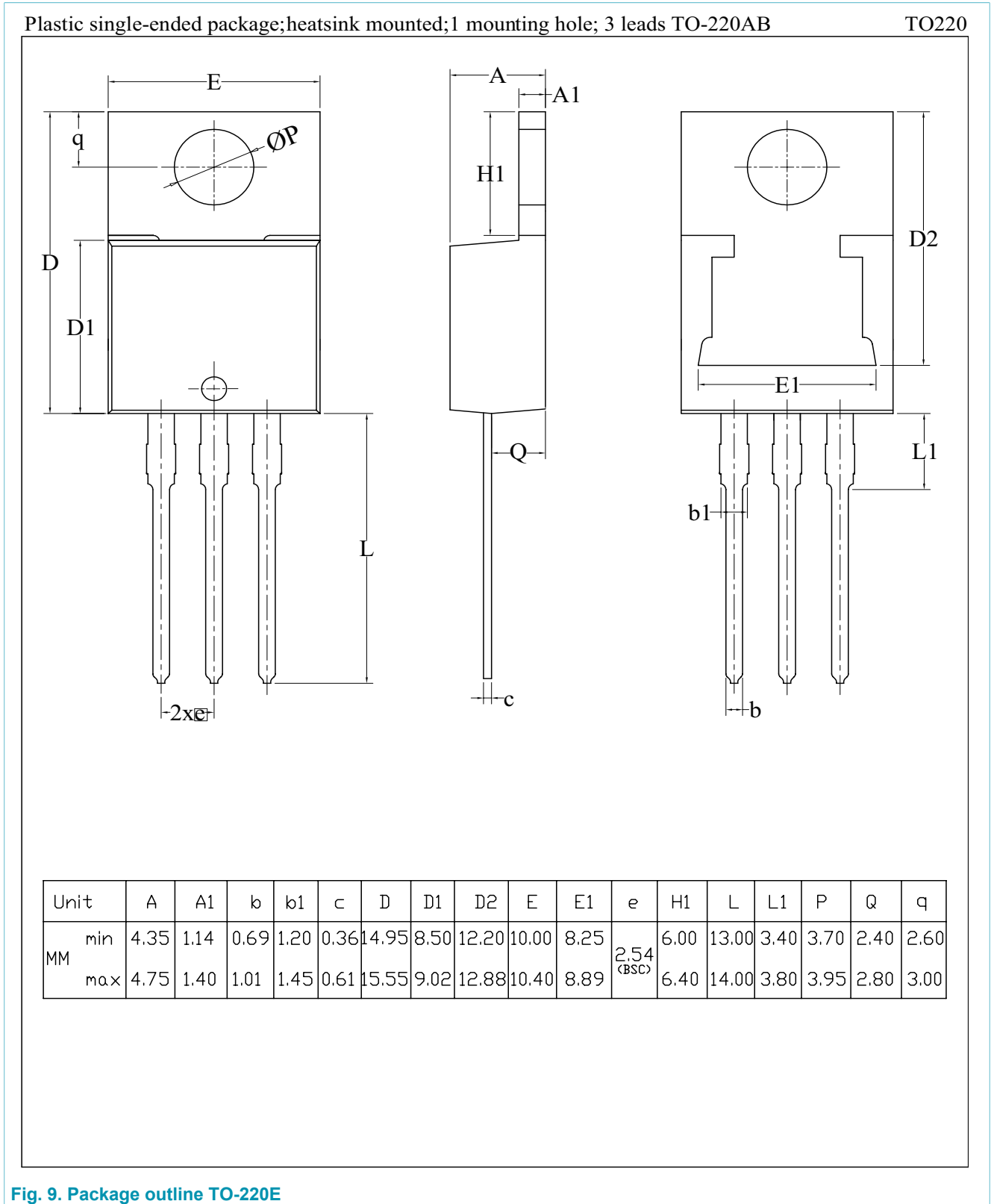


Fig. 8. Junction capacitance as a function of applied reverse voltage; per diode; typical values

10. Package outline



11. 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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Product [short] data sheet	Production	This document contains the product specification.

- [1] Please consult the most recently issued document before initiating or completing a design.
- [2] The term 'short data sheet' is explained in section "Definitions".
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