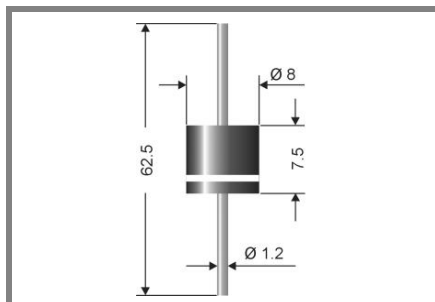


HE 12FA ... HE 12FG



Axial lead diode

| Type | Repetitive peak reverse voltage V_{RRM} V | Surge peak reverse voltage V_{RSM} V | Max. reverse recovery time $I_F = 0,5 \text{ A}$ $I_R = 1 \text{ A}$ $I_{RR} = 0,25 \text{ A}$ t_{rr} ns | Max. forward voltage $V_F^{(2)}$ |
|---------|---|--|---|-------------------------------------|
| HE 12FA | 50 | 50 | 200 | 0,82 |
| HE 12FB | 100 | 100 | 200 | 0,82 |
| HE 12FD | 200 | 200 | 200 | 0,82 |
| HE 12FG | 400 | 400 | 200 | 0,84 |

High efficiency fast silicon rectifier diode

HE 12FA...HE 12FG

Forward Current: 12 A

Reverse Voltage: 50 to 400 V

Features

- Max. solder temperature: 260°C
- Plastic material has UL classification 94V-0

Mechanical Data

- Plastic case 8 x 7,5 [mm]
- Weight approx.: 1,5 g
- Terminals: plated terminals solderable per MIL-STD-750
- Mounting position: any
- Standard packaging: 500 pieces per ammo or 1000 pieces per reel

1) Valid, if leads are kept at ambient temperature at a distance of 10 mm from case

2) $I_F = 5 \text{ A}$, $T_J = 25 \text{ °C}$

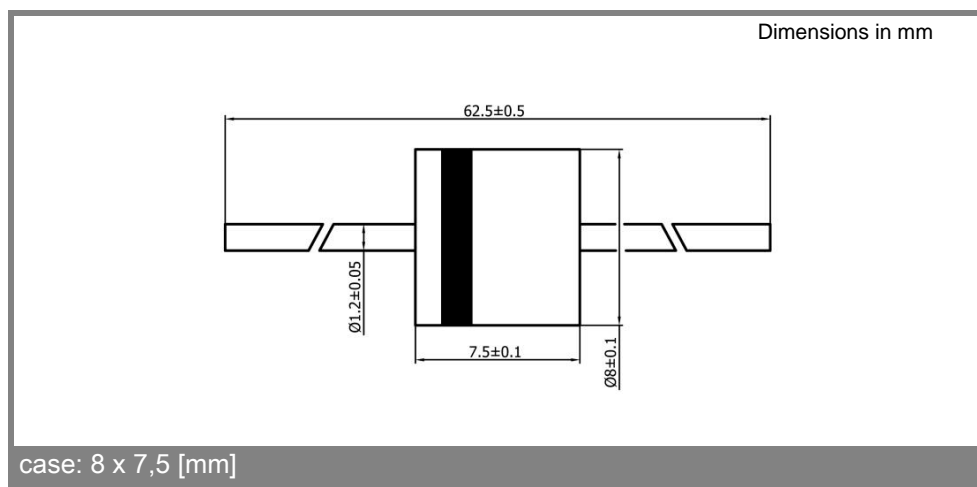
3) $T_A = 25 \text{ °C}$

4) Thermal resistance from junction to lead/terminal at a distance 0 mm from case

5) Max. junction temperature $T_J \leq 200 \text{ °C}$ in bypass mode / DC forward mode

| Absolute Maximum Ratings | | $T_A = 25 \text{ °C}$, unless otherwise specified | |
|--------------------------|---|---|------------------|
| Symbol | Conditions | Values | Units |
| I_{FAV} | Max. averaged fwd. current, R-load, $T_A = 50 \text{ °C}$ ¹⁾ | 12 | A |
| I_{FRM} | Repetitive peak forward current $f > 15 \text{ Hz}$ ¹⁾ | 80 | A |
| I_{FSM} | Peak forward surge current 50 Hz half sinus-wave ³⁾ | 650 | A |
| i^2t | Rating for fusing, $t < 10 \text{ ms}$ ³⁾ | 2100 | A ² s |
| R_{thA} | Max. thermal resistance junction to ambient ¹⁾ | | K/W |
| R_{thL} | Max. thermal resistance junction to terminals ⁴⁾ | 2,5 | K/W |
| T_j | Operating junction temperature | -50...+175 ($T_j \leq 200 \text{ °C}$ in bypass mode ⁵⁾) | °C |
| T_s | Storage temperature | -50...+175 | °C |

| Characteristics | | $T_A = 25 \text{ °C}$, unless otherwise specified | |
|-----------------|--|--|-------|
| Symbol | Conditions | Values | Units |
| I_R | Maximum leakage current, $T_j = 25 \text{ °C}$; $V_R = V_{RRM}$ | <25 | µA |
| | $T_j = \text{°C}$; $V_R = V_{RRM}$ | | |
| C_j | Typical junction capacitance (at MHz and applied reverse voltage of V) | - | pF |
| Q_{rr} | Reverse recovery charge ($U_R = V$; $I_F = A$; $dI_F/dt = A/ms$) | - | µC |
| E_{RSM} | Non repetitive peak reverse avalanche energy ($I_R = mA$; $T_j = \text{°C}$; inductive load switched off) | - | mJ |



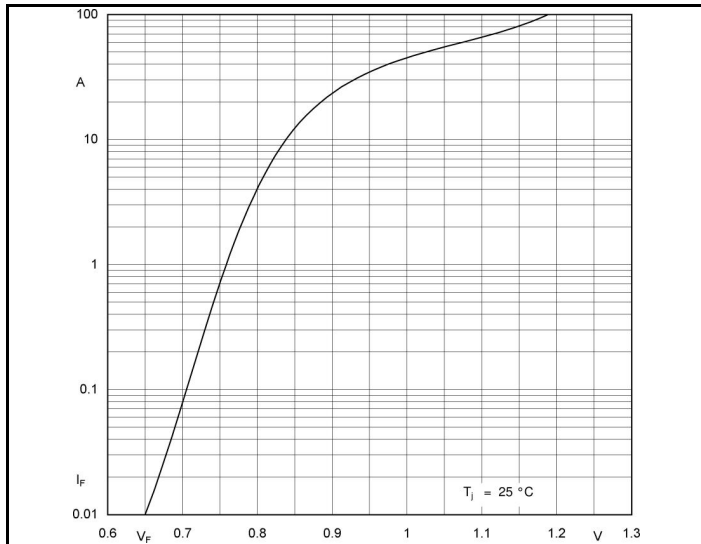


Fig. 1 Forward characteristic (typical values) ¹⁾

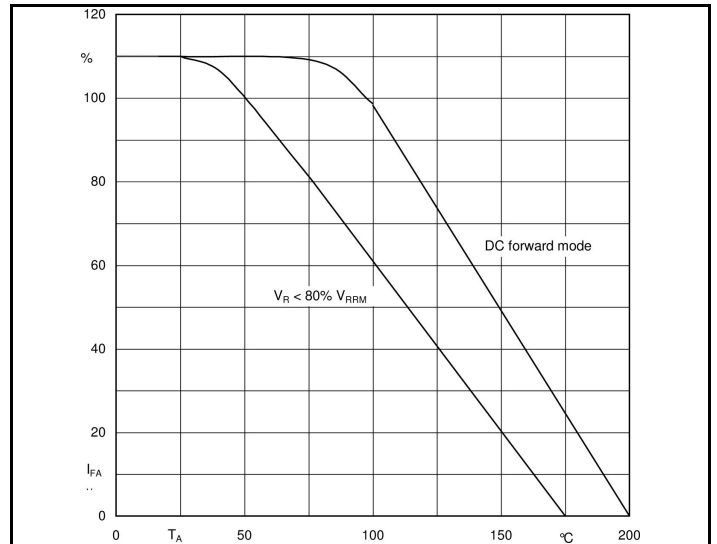


Fig. 2 Rated forward current vs. ambient temperature ¹⁾

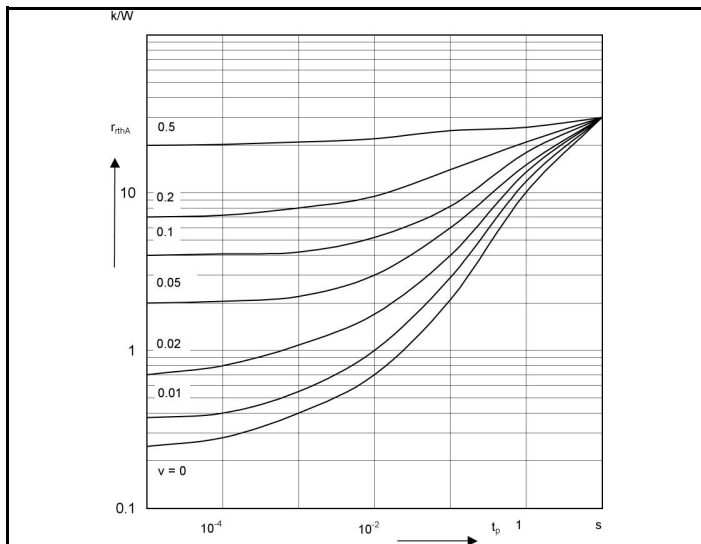


Fig. 3 Pulse thermal resistance vs. pulse duration ¹⁾

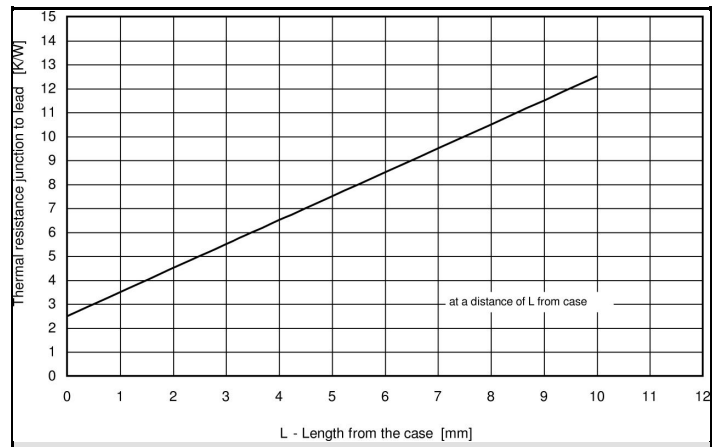


Fig. 4, Thermal resistance versus distance from case