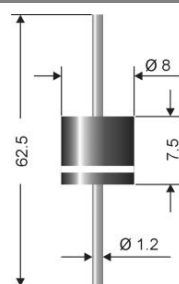


HE 12FA ... HE 12FG



Axial lead diode

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

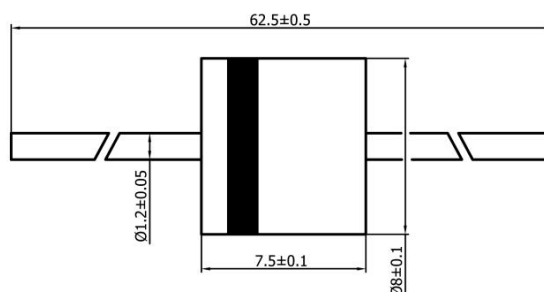
- 1) Valid, if leads are kept at ambient temperature at a distance of 10 mm from case
- 2) $I_F = 5 \text{ A}$, $T_J = 25 \text{ °C}$
- 3) $T_A = 25 \text{ °C}$
- 4) Thermal resistance from junction to lead/terminal at a distance 0 mm from case
- 5) Max. junction temperature $T_J \leq 200 \text{ °C}$ in bypass mode / DC forward mode

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

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 ($I_R = \text{mA}$; $T_J = \text{°C}$; inductive load switched off)	-	mJ

Dimensions in mm



case: 8 x 7,5 [mm]

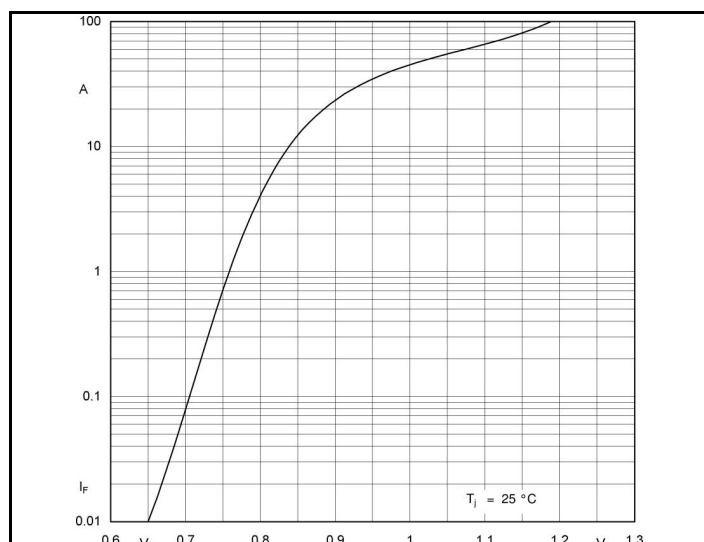


Fig. 1 Forward characteristic (typical values) ¹⁾

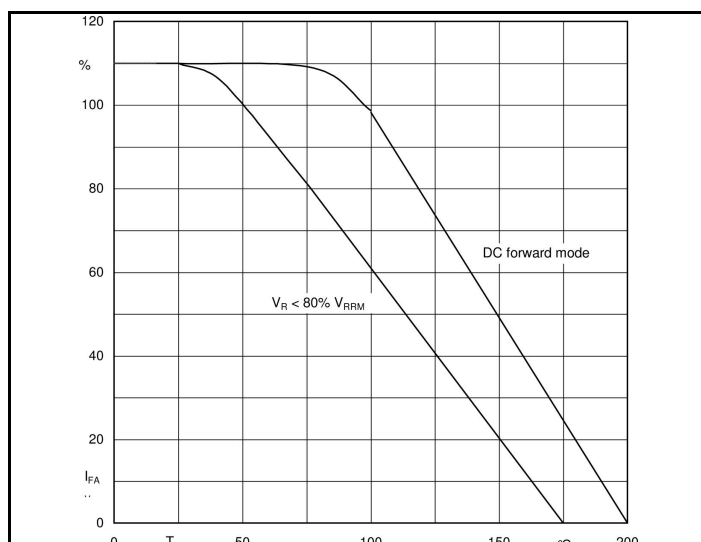


Fig. 2 Rated forward current vs. ambient temperature ¹⁾

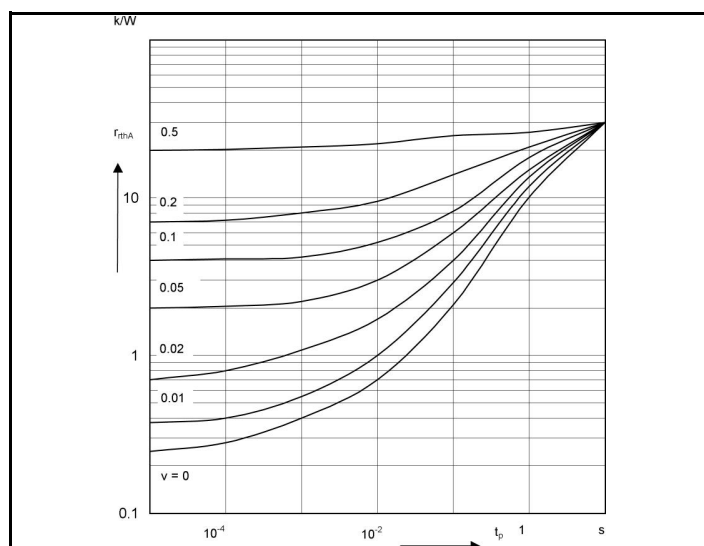


Fig. 3 Pulse thermal resistance vs. pulse duration ¹⁾

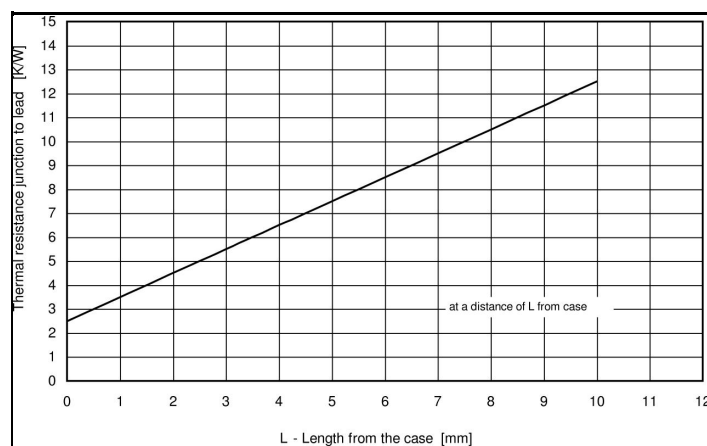


Fig. 4, Thermal resistance versus distance from case