

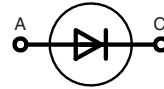
# HiPerFRED™ Epitaxial Diode with soft recovery

$$I_{FAVM} = 6 \text{ A}$$

$$V_{RRM} = 600 \text{ V}$$

$$t_{rr} = 20 \text{ ns}$$

$V_{RSM}$ V	$V_{RRM}$ V	Type	Marking on product
600	600	DSEP 6-06BS	P6QGUI



## TO-252AA (DPAK)



Symbol	Conditions	Maximum Ratings	
$I_{FRMS}$ $I_{FAVM}$ ①	$T_{VJ} = T_{VJM}$ $T_C = 140^\circ\text{C}$ ; rectangular, $d = 0.5$	26	A
$I_{FSM}$	$T_{VJ} = 45^\circ\text{C}$ ; $t = 10 \text{ ms}$ (50 Hz), sine	40	A
$E_{AS}$	$T_{VJ} = 25^\circ\text{C}$ ; non-repetitive $I_{AS} = 0.8 \text{ A}$ ; $L = 180 \mu\text{H}$	0.1	mJ
$I_{AR}$	$V_A = 1.5 \cdot V_R$ typ.; $f = 10 \text{ kHz}$ ; repetitive	0.1	A
$T_{VJ}$		-40...+175	$^\circ\text{C}$
$T_{VJM}$		175	$^\circ\text{C}$
$T_{stg}$		-40...+150	$^\circ\text{C}$
$P_{tot}$	$T_C = 25^\circ\text{C}$	55	W
Weight	typ.	0.3	g

## Features

- Planar passivated chips
- Very short recovery time
- Extremely low switching losses
- Low  $I_{RM}$ -values
- Soft recovery behaviour

## Applications

- Anti saturation diode
- Snubber diode
- Free wheeling diode in converters and motor control circuits
- Rectifiers in switch mode power supplies (SMPS)
- Inductive heating and melting
- Uninterruptible power supplies (UPS)
- Ultrasonic cleaners and welders

Symbol	Conditions	Characteristic Values	
		typ.	max.
$I_R$	$T_{VJ} = 25^\circ\text{C}$ $V_R = V_{RRM}$ $T_{VJ} = 150^\circ\text{C}$ $V_R = V_{RRM}$	5	$\mu\text{A}$
$V_F$	$I_F = 6 \text{ A}$ ; $T_{VJ} = 150^\circ\text{C}$ $T_{VJ} = 25^\circ\text{C}$	1.74	V
$R_{thJC}$		2.8	K/W
$t_{rr}$	$I_F = 1 \text{ A}$ ; $-di/dt = 200 \text{ A}/\mu\text{s}$ $V_R = 30 \text{ V}$ ; $T_{VJ} = 25^\circ\text{C}$	20	ns
$I_{RM}$	$I_F = 10 \text{ A}$ ; $-di/dt = 100 \text{ A}/\mu\text{s}$ $V_R = 100 \text{ V}$ ; $T_{VJ} = 100^\circ\text{C}$	1.5	2 A

①  $I_{FAVM}$  rating includes reverse blocking losses at  $T_{VJM}$ ,  $V_R = 0.6 V_{RRM}$ , duty cycle  $d = 0.5$

Data according to IEC 60747

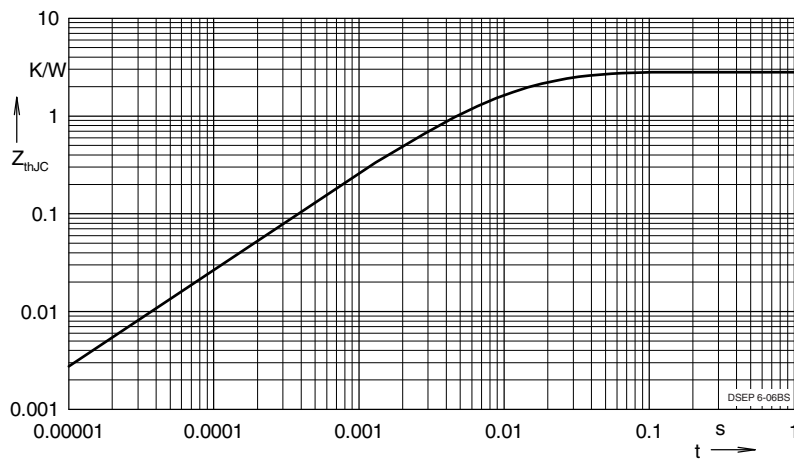


Fig. 7 Transient thermal resistance junction to case