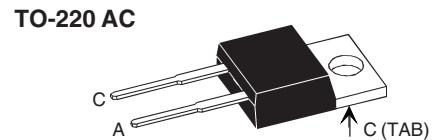
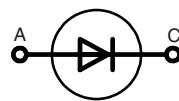


# HiPerFRED™ Epitaxial Diode with soft recovery

**I<sub>FAV</sub> = 15 A**  
**V<sub>RRM</sub> = 600 V**  
**t<sub>rr</sub> = 25 ns**

V <sub>RSM</sub> V	V <sub>RRM</sub> V	Type
600	600	DSEP 15-06B



A = Anode, C = Cathode, TAB = Cathode

Symbol	Conditions	Maximum Ratings		Features
I <sub>FRMS</sub>		35	A	
I <sub>FAVM</sub>	T <sub>C</sub> = 130°C; rectangular, d = 0.5	15	A	
I <sub>FSM</sub>	T <sub>VJ</sub> = 45°C; t <sub>p</sub> = 10 ms (50 Hz), sine	110	A	
E <sub>AS</sub>	T <sub>VJ</sub> = 25°C; non-repetitive; I <sub>AS</sub> = 1 A; L = 100 µH L = 20 mH	0.1 20	mJ mJ	• International standard package • Planar passivated chips • Very short recovery time • Extremely low switching losses • Low I <sub>RM</sub> -values • Soft recovery behaviour • Epoxy meets UL 94V-0
I <sub>AR</sub>	V <sub>A</sub> = 1.5·V <sub>R</sub> typ.; f = 10 kHz; repetitive	0.1	A	
T <sub>VJ</sub>		-55...+175	°C	
T <sub>VJM</sub>		175	°C	
T <sub>stg</sub>		-55...+150	°C	
P <sub>tot</sub>	T <sub>C</sub> = 25°C	95	W	
M <sub>d</sub>	mounting torque	0.4...0.6	Nm	
Weight	typical	2	g	

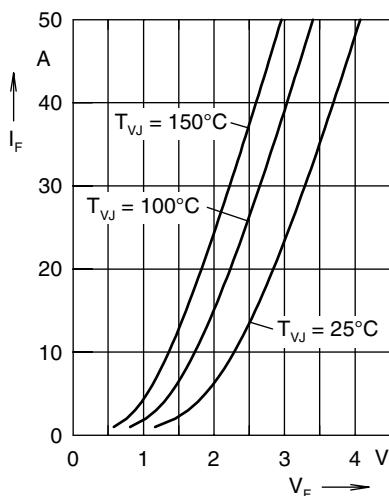
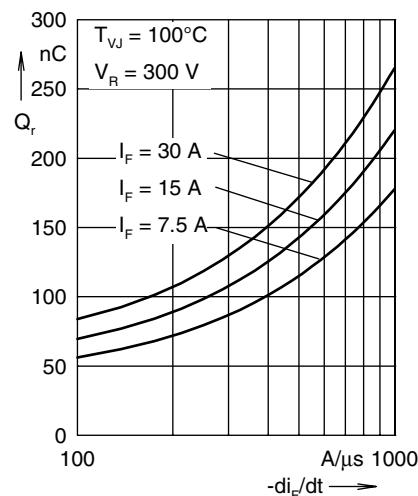
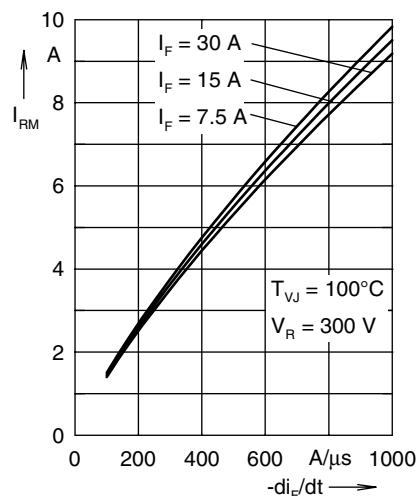
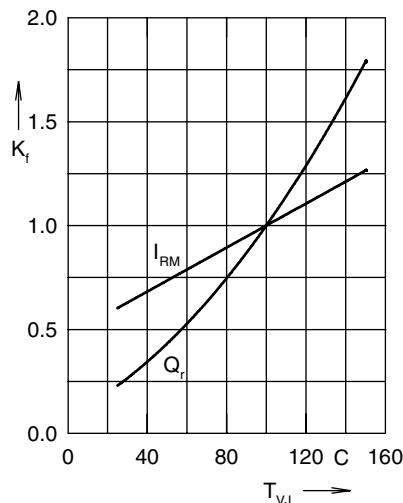
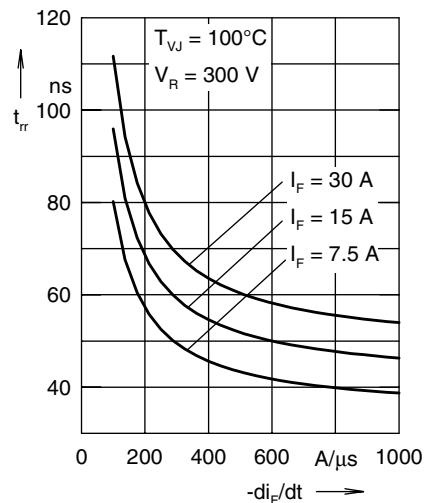
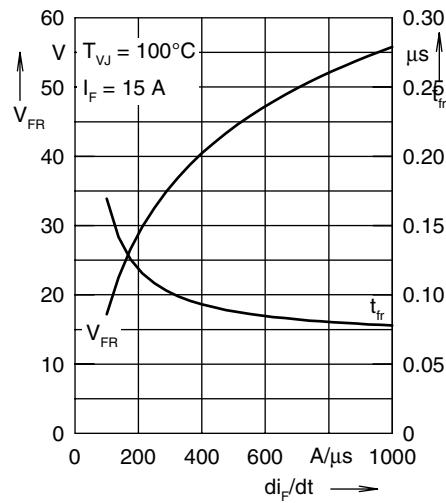
Symbol	Conditions	Characteristic Values		Advantages
		typ.	max.	
I <sub>R</sub> ①	V <sub>R</sub> = V <sub>RRM</sub> ; T <sub>VJ</sub> = 25°C V <sub>R</sub> = V <sub>RRM</sub> ; T <sub>VJ</sub> = 150°C	100 0.5	µA mA	
V <sub>F</sub> ②	I <sub>F</sub> = 15 A; T <sub>VJ</sub> = 150°C T <sub>VJ</sub> = 25°C	1.55 2.52	V V	
R <sub>thJC</sub> R <sub>thCH</sub>		0.5	1.6 K/W K/W	
t <sub>rr</sub>	I <sub>F</sub> = 1 A; -di/dt = 100 A/µs; V <sub>R</sub> = 30 V; T <sub>VJ</sub> = 25°C	25	30 ns	
I <sub>RM</sub>	V <sub>R</sub> = 100 V; I <sub>F</sub> = 25 A; -di/dt = 100 A/µs; T <sub>VJ</sub> = 100°C	2.6	A	

Pulse test: ① Pulse Width = 5 ms, Duty Cycle < 2.0 %  
 ② Pulse Width = 300 µs, Duty Cycle < 2.0 %

Data according to IEC 60747 and per diode unless otherwise specified.

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Fig. 1 Forward current  $I_F$  versus  $V_F$ Fig. 2 Reverse recovery charge  $Q_r$  versus  $-di_F/dt$ Fig. 3 Peak reverse current  $I_{RM}$  versus  $-di_F/dt$ Fig. 4 Dynamic parameters  $Q_r$ ,  $I_{RM}$  versus  $T_{VJ}$ Fig. 5 Recovery time  $t_{rr}$  versus  $-di_F/dt$ Fig. 6 Peak forward voltage  $V_{FR}$  and  $t_{fr}$  versus  $di_F/dt$ Constants for  $Z_{thJC}$  calculation:

i	$R_{thi}$ (K/W)	$t_i$ (s)
1	0.908	0.0052
2	0.35	0.0003
3	0.342	0.017

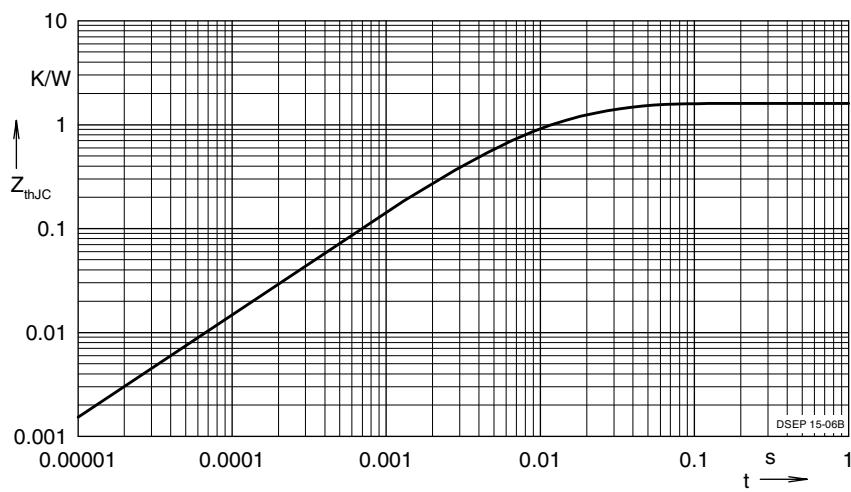


Fig. 7 Transient thermal resistance junction to case

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NOTE: Fig. 2 to Fig. 6 shows typical values