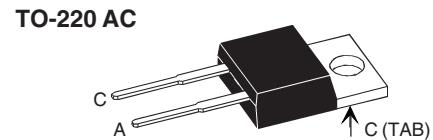
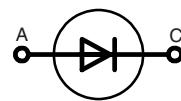


HiPerFRED™ Epitaxial Diode with soft recovery

I_{FAV} = 15 A
V_{RRM} = 600 V
t_{rr} = 25 ns

V _{RSM} V	V _{RRM} V	Type
600	600	DSEP 15-06B



A = Anode, C = Cathode, TAB = Cathode

Symbol	Conditions	Maximum Ratings		Features
I _{FRMS}		35	A	
I _{FAVM}	T _C = 130°C; rectangular, d = 0.5	15	A	
I _{FSM}	T _{VJ} = 45°C; t _p = 10 ms (50 Hz), sine	110	A	
E _{AS}	T _{VJ} = 25°C; non-repetitive; I _{AS} = 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 _{RM} -values • Soft recovery behaviour • Epoxy meets UL 94V-0
I _{AR}	V _A = 1.5·V _R typ.; f = 10 kHz; repetitive	0.1	A	
T _{VJ}		-55...+175	°C	
T _{VJM}		175	°C	
T _{stg}		-55...+150	°C	
P _{tot}	T _C = 25°C	95	W	
M _d	mounting torque	0.4...0.6	Nm	
Weight	typical	2	g	

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

Applications

- Antiparallel diode for high frequency switching devices
- Antisaturation diode
- Snubber diode
- Free wheeling diode in converters and motor control circuits
- Rectifiers in switch mode power supplies (SMPS)
- Inductive heating
- Uninterruptible power supplies (UPS)
- Ultrasonic cleaners and welders

Advantages

- Avalanche voltage rated for reliable operation
- Soft reverse recovery for low EMI/RFI
- Low I_{RM} reduces:
 - Power dissipation within the diode
 - Turn-on loss in the commuting switch

Dimensions see Outlines.pdf

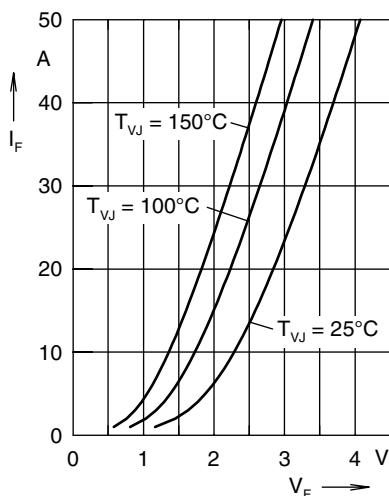


Fig. 1 Forward current I_F versus V_F

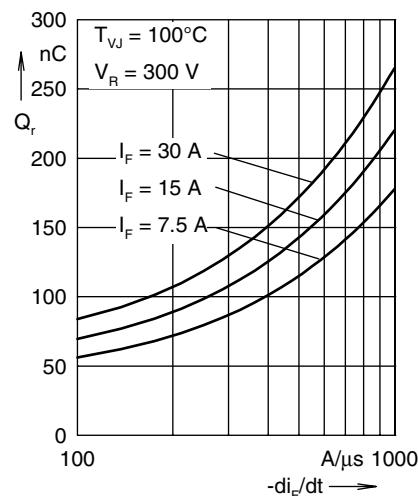


Fig. 2 Reverse recovery charge Q_r versus $-di_F/dt$

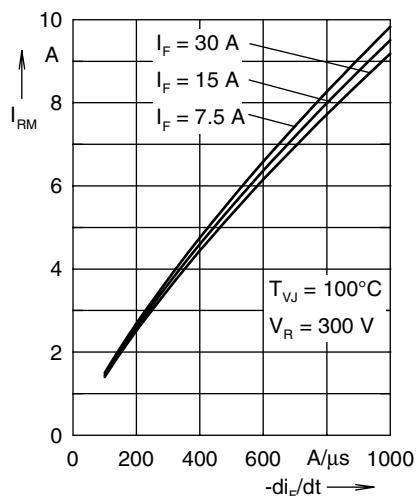


Fig. 3 Peak reverse current I_{RM} versus $-di_F/dt$

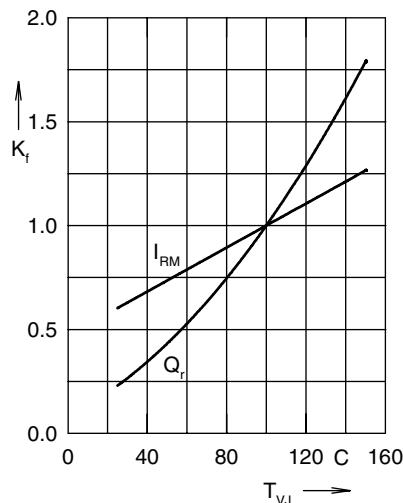


Fig. 4 Dynamic parameters Q_r , I_{RM} versus T_{VJ}

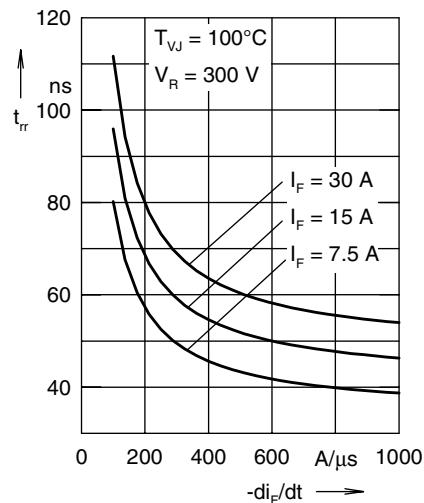


Fig. 5 Recovery time t_{rr} versus $-di_F/dt$

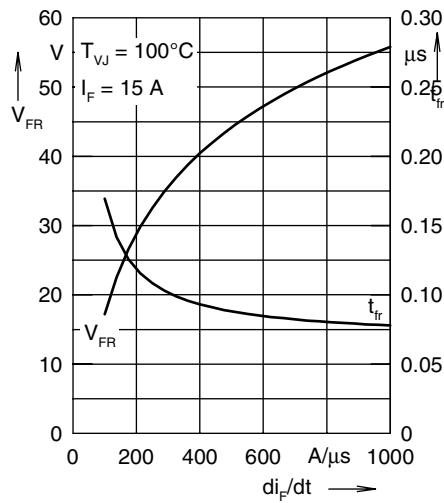


Fig. 6 Peak forward voltage V_{FR} and t_{rr} versus di_F/dt

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

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

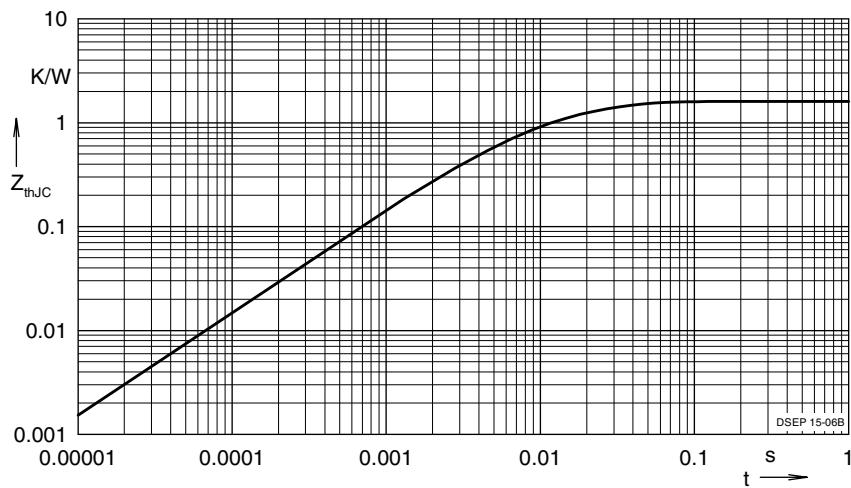


Fig. 7 Transient thermal resistance junction to case