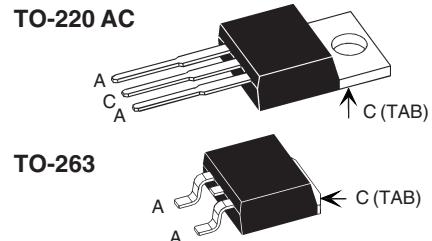
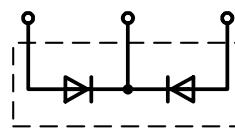


HiPerFRED™ Epitaxial Diode with common cathode and soft recovery

I_{FAV} = 2x15 A
V_{RRM} = 200 V
t_{rr} = 25 ns

V _{RSM}	V _{RRM}	Type
V	V	
200	200	DSEC 29-02A
200	200	DSEC 29-02AS



A = Anode, C = Cathode, TAB = Cathode

Symbol	Conditions	Maximum Ratings	
I _{FRMS}		35	A
I _{FAVM}	T _C = 150°C; rectangular, d = 0.5	15	A
I _{FSM}	T _{VJ} = 45°C; t _p = 10 ms (50 Hz), sine	140	A
E _{AS}	T _{VJ} = 25°C; non-repetitive I _{AS} = 2.5 A; L = 180 µH	0.8	mJ
I _{AR}	V _A = 1.5·V _R typ.; f = 10 kHz; repetitive	0.3	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	0.45...0.55 4...5	Nm lb.in.
Weight	typical	2 / 4	g

Symbol	Conditions	Characteristic Values	
		typ.	max.
I _R ①	T _{VJ} = 25°C; V _R = V _{RRM} T _{VJ} = 150°C; V _R = V _{RRM}	100 0.5	µA mA
V _F ②	I _F = 15 A; T _{VJ} = 150°C T _{VJ} = 25°C	0.86 1.06	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	ns
I _{RM}	V _R = 100 V; I _F = 25 A; -di _F /dt = 100 A/µs T _{VJ} = 100°C	3.5	4.4 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.

Features

- 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

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

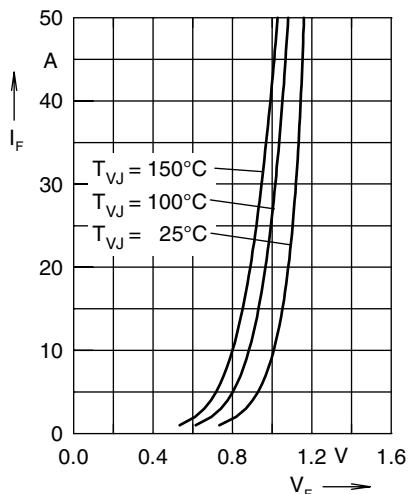


Fig. 1 Forward current I_F versus V_F

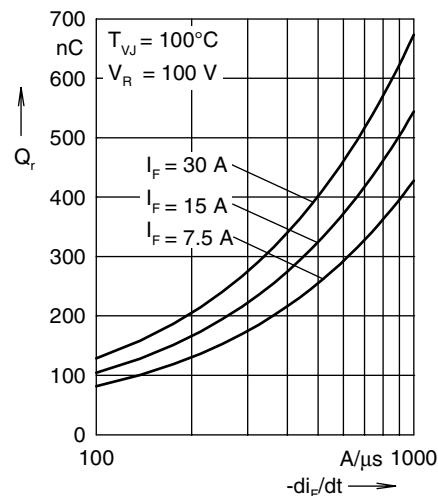


Fig. 2 Typ. reverse recovery charge Q_r

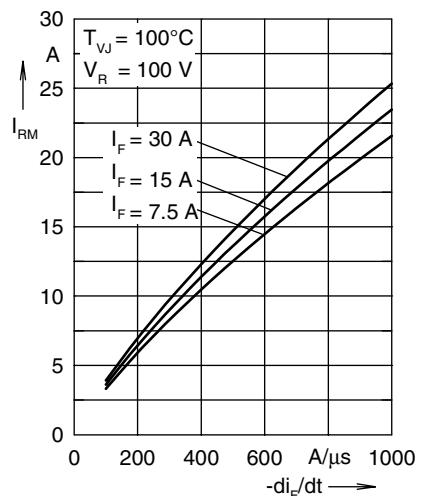


Fig. 3 Typ. peak reverse current I_{RM}

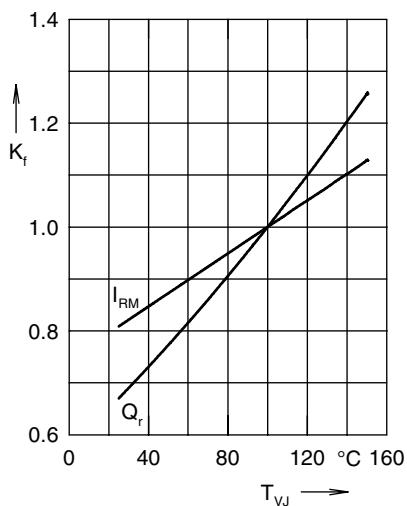


Fig. 4 Typ. dynamic parameters Q_r , I_{RM}

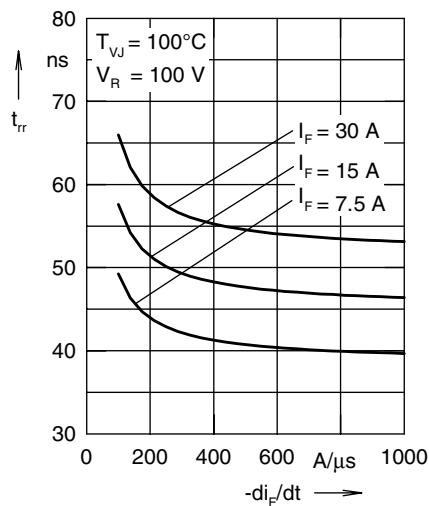


Fig. 5 Typ. recovery time t_{rr} versus $-di_F/dt$

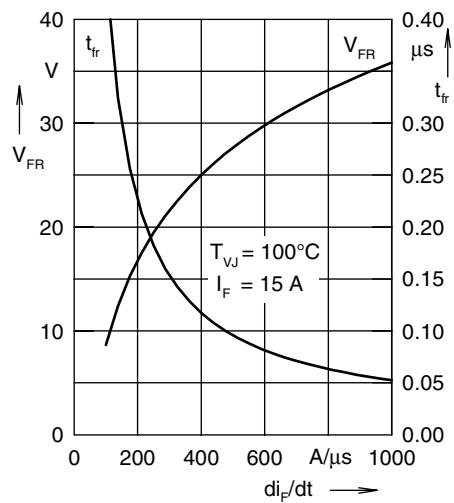


Fig. 6 Typ. peak forward voltage V_{FR} and t_{tr}

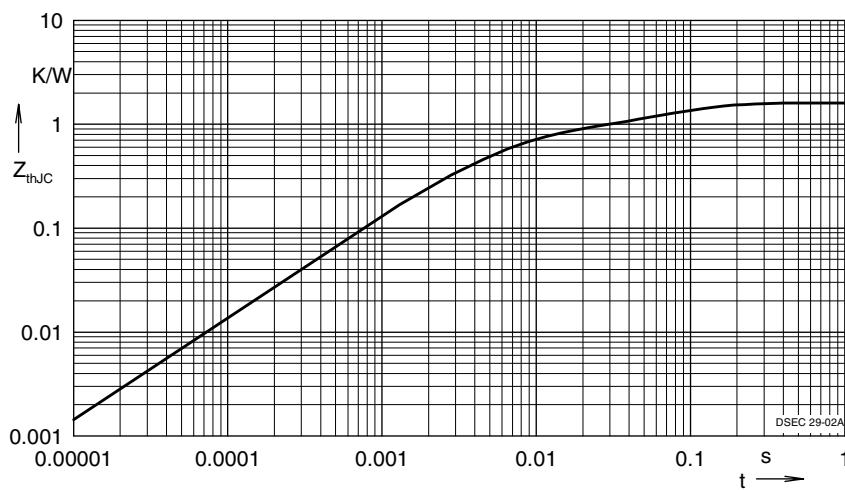


Fig. 7 Transient thermal resistance junction to case

IXYS reserves the right to change limits, test conditions and dimensions.

Constants for Z_{thJC} calculation:

i	R_{thi} (K/W)	t_i (s)
1	0.851	0.0052
2	0.328	0.0003
4	0.421	0.0409