

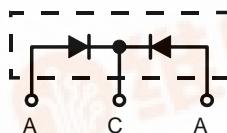


Common Cathode Fast Recovery Epitaxial Diode (FRED)

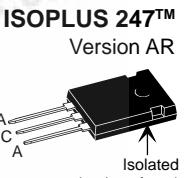
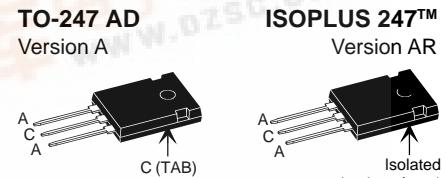
V_{RSM}	V_{RRM}	Type
V	V	
200	200	DSEK 60-02A
200	200	DSEK 60-02AR

DSEK 60

$I_{FAVM} = 2 \times 34 A$
 $V_{RRM} = 200 V$
 $t_{rr} = 35 ns$



TO-247 AD
Version A



A = Anode, C = Cathode

* Patent pending

Symbol	Test Conditions	Maximum Ratings per leg		
I_{FRMS}	$T_{VJ} = T_{VJM}$	50	A	
I_{FAVM} ①	$T_c = 115^\circ C$; rectangular, $d = 0.5$	34	A	
I_{FRM}	$t_p < 10 \mu s$; rep. rating, pulse width limited by T_{VJM}	375	A	
I_{FSM}	$T_{VJ} = 45^\circ C$; $t = 10 ms$ (50 Hz), sine $t = 8.3 ms$ (60 Hz), sine	325	A	
		350	A	
	$T_{VJ} = 150^\circ C$; $t = 10 ms$ (50 Hz), sine $t = 8.3 ms$ (60 Hz), sine	290	A	
		310	A	
I^2t	$T_{VJ} = 45^\circ C$ $t = 10 ms$ (50 Hz), sine $t = 8.3 ms$ (60 Hz), sine	530	A^2s	
		510	A^2s	
	$T_{VJ} = 150^\circ C$; $t = 10 ms$ (50 Hz), sine $t = 8.3 ms$ (60 Hz), sine	420	A^2s	
		400	A^2s	
T_{VJ}		-40...+150	$^\circ C$	
T_{VJM}		150	$^\circ C$	
T_{stg}		-40...+150	$^\circ C$	
P_{tot}	$T_c = 25^\circ C$	125	W	
M_d^*	Mounting torque	0.8...1.2	Nm	
F_c	mounting force with clip	20...120	N	
V_{ISOL} **	50/60 Hz, RMS, $t = 1$ minute, leads-to-tab	2500	V-	
Weight		6	g	

* Version A only; ** Version AR only

Symbol	Test Conditions	Characteristic Values per leg	
		typ.	max.
I_R	$T_{VJ} = 25^\circ C$ $V_R = V_{RRM}$ $T_{VJ} = 25^\circ C$ $V_R = 0.8 \cdot V_{RRM}$ $T_{VJ} = 125^\circ C$ $V_R = 0.8 \cdot V_{RRM}$	200 50 5	μA μA mA
V_F	$I_F = 30 A$; $T_{VJ} = 150^\circ C$ $T_{VJ} = 25^\circ C$	0.85 1.10	V
V_{TO}	For power-loss calculations only	0.72	V
r_T	$T_{VJ} = T_{VJM}$	4.2	$m\Omega$
R_{thJC}		0.25	K/W
R_{thCH}			K/W
t_{rr}	$I_F = 1 A$; $-di/dt = 100 A/\mu s$; $V_R = 30 V$; $T_{VJ} = 25^\circ C$	35	50 ns
I_{RM}	$V_R = 100 V$; $I_F = 30 A$; $-di_F/dt = 100 A/\mu s$ $L \leq 0.05 \mu H$; $T_{VJ} = 25^\circ C$	4	5 A

① I_{FAVM} rating includes reverse blocking losses at T_{VJM} , $V_R = 0.8 V_{RRM}$, duty cycle $d = 0.5$. Data according to IEC 60747 refer to a single diode unless otherwise stated.

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

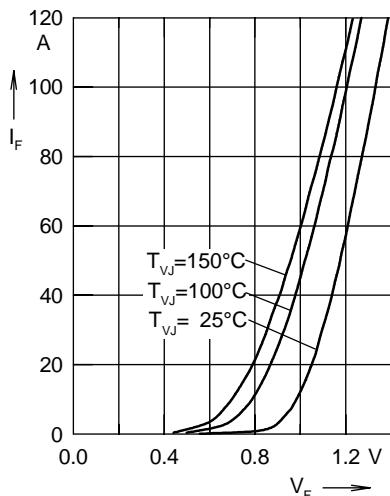


Fig. 1 Forward current I_F versus V_F

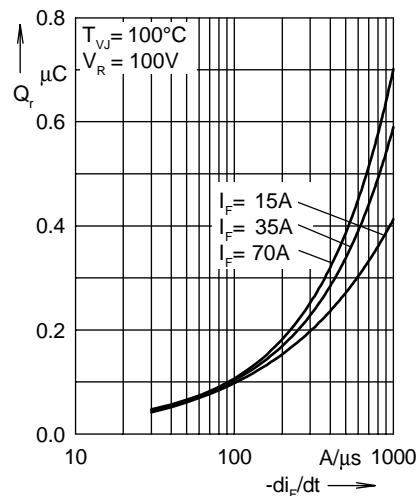


Fig. 2 Typ. reverse recovery charge Q_r versus $-di_F/dt$

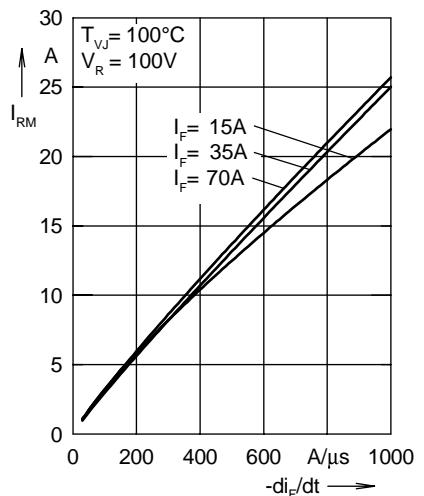


Fig. 3 Typ. peak reverse current I_{RM} versus $-di_F/dt$

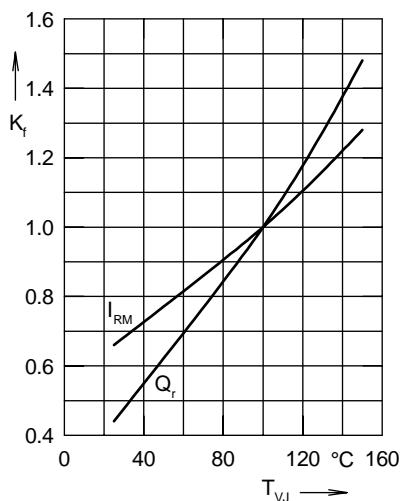


Fig. 4 Dynamic parameters Q_r , I_{RM} versus T_{VJ}

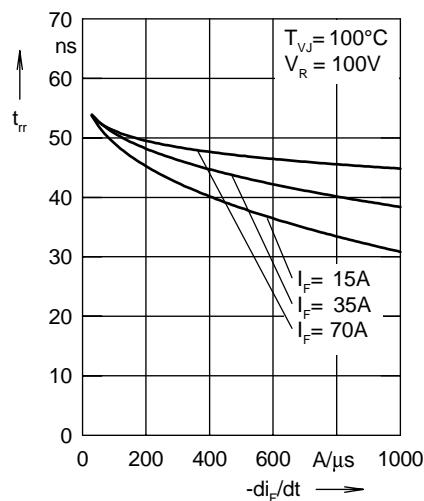


Fig. 5 Typ. recovery time t_{rr} versus $-di_F/dt$

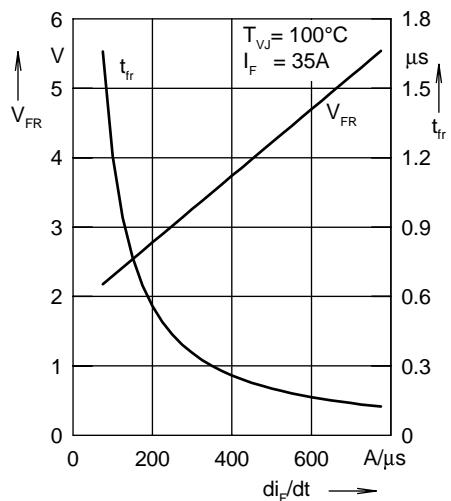


Fig. 6 Typ. peak forward voltage V_{FR} and t_{rr} versus di_F/dt

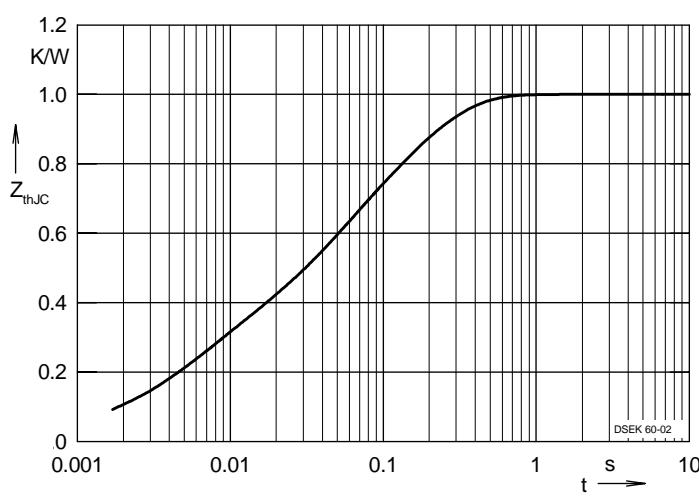
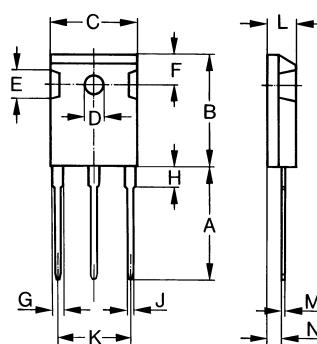


Fig. 7 Transient thermal impedance junction to case

Dimensions



Dim.	Millimeter Min.	Millimeter Max.	Inches Min.	Inches Max.
A	19.81	20.32	0.780	0.800
B	20.80	21.46	0.819	0.845
C	15.75	16.26	0.610	0.640
D*	3.55	3.65	0.140	0.144
E	4.32	5.49	0.170	0.216
F	5.4	6.2	0.212	0.244
G	1.65	2.13	0.065	0.084
H	-	4.5	-	0.177
J	1.0	1.4	0.040	0.055
K	10.8	11.0	0.426	0.433
L	4.7	5.3	0.185	0.209
M	0.4	0.8	0.016	0.031
N	2.2	2.54	0.087	0.102

* ISOPLUS 247™ without hole