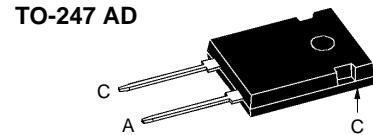
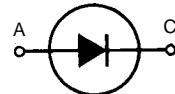


Fast Recovery Epitaxial Diode (FRED)

DSEI 60

I_{FAVM} = 69 A
V_{RRM} = 200 V
t_{rr} = 35 ns

V _{RSM}	V _{RRM}	Type
V	V	
200	200	DSEI 60-02A



A = Anode, C = Cathode

Symbol	Test Conditions	Maximum Ratings	
I _{FRMS}	T _{VJ} = T _{VJM}	98	A
I _{FAVM} ①	T _C = 85°C; rectangular, d = 0.5	69	A
I _{FRM}	t _p < 10 µs; rep. rating, pulse width limited by T _{VJM}	800	A
I _{FSM}	T _{VJ} = 45°C; t = 10 ms (50 Hz), sine t = 8.3 ms (60 Hz), sine	600	A
		650	A
	T _{VJ} = 150°C; t = 10 ms (50 Hz), sine t = 8.3 ms (60 Hz), sine	540	A
		580	A
I ² t	T _{VJ} = 45°C t = 10 ms (50 Hz), sine t = 8.3 ms (60 Hz), sine	1800	A ² s
		1770	A ² s
	T _{VJ} = 150°C; t = 10 ms (50 Hz), sine t = 8.3 ms (60 Hz), sine	1460	A ² s
		1410	A ² s
T _{VJ}		-40...+150	°C
T _{VJM}		150	°C
T _{stg}		-40...+150	°C
P _{tot}	T _C = 25°C	150	W
M _d	Mounting torque	0.8...1.2	Nm
Weight		6	g

Symbol	Test Conditions	Characteristic Values	
		typ.	max.
I _R	T _{VJ} = 25°C V _R = V _{RRM} T _{VJ} = 25°C V _R = 0.8 • V _{RRM} T _{VJ} = 125°C V _R = 0.8 • V _{RRM}	50	µA
		40	µA
		11	mA
V _F	I _F = 60 A; T _{VJ} = 150°C T _{VJ} = 25°C	0.88	V
		1.08	V
V _{T0}	For power-loss calculations only	0.70	V
r _T	T _{VJ} = T _{VJM}	4.0	mΩ
R _{thJC}		0.75	K/W
R _{thCK}		35	K/W
R _{thJA}		0.25	K/W
t _{rr}	I _F = 1 A; -di/dt = 200 A/µs; V _R = 30 V; T _{VJ} = 25°C	35	50 ns
I _{RM}	V _R = 100 V; I _F = 60 A; -di _F /dt = 200 A/µs L ≤ 0.05 µH; T _{VJ} = 100°C	8	10 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

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

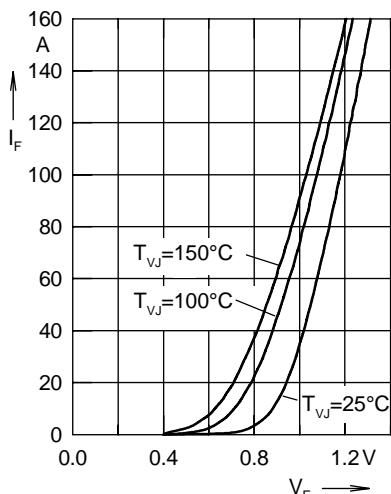


Fig. 1 Forward current I_F versus V_F

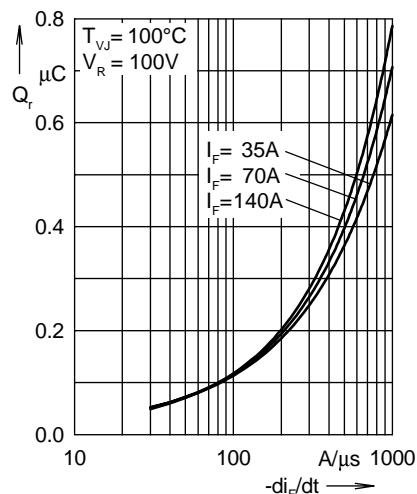


Fig. 2 Typ. reverse recovery charge Q_r versus $-di_F/dt$

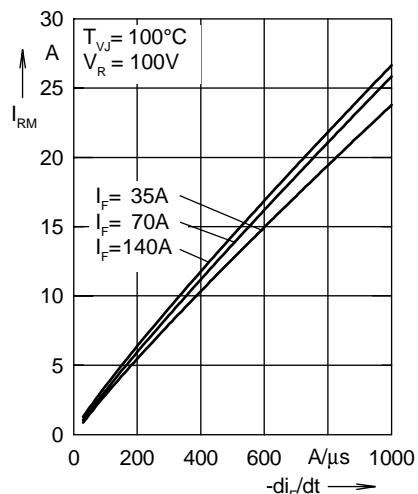


Fig. 3 Typ. peak reverse current I_{RM} versus $-di_F/dt$

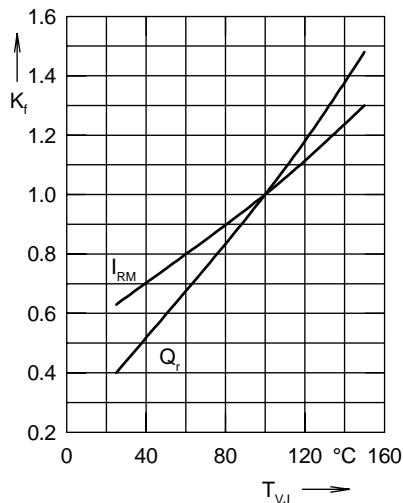


Fig. 4 Dynamic parameters Q_r , I_{RM} versus T_{VJ}

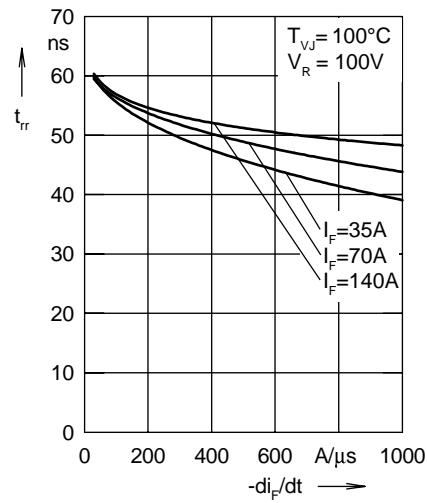


Fig. 5 Typ. recovery time t_{rr} versus $-di_F/dt$

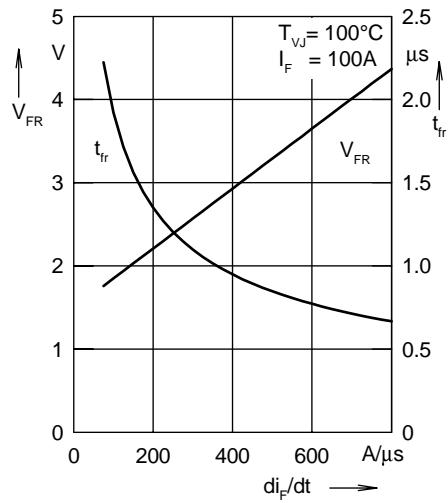


Fig. 6 Typ peak forward voltage V_{FR} and t_{rr} versus di_F/dt

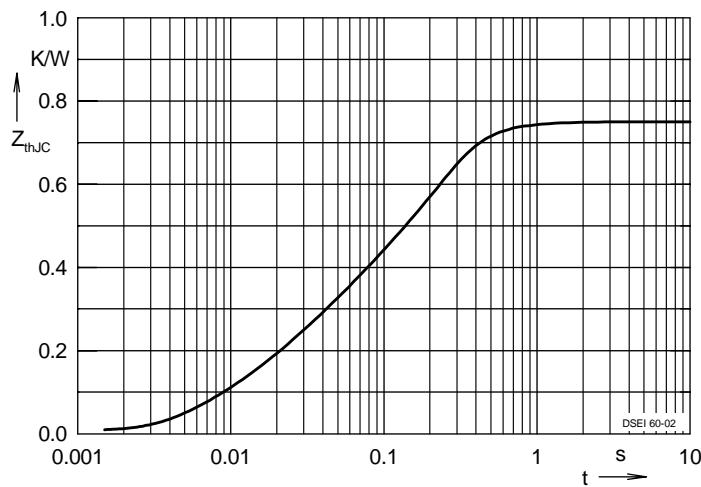
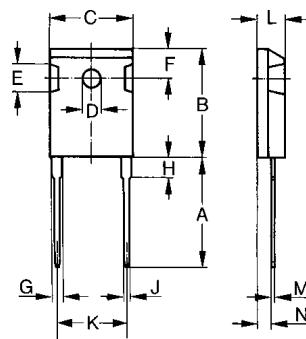


Fig. 7 Transient thermal impedance junction to case

Dimensions



Dim.	Millimeter		Inches	
	Min.	Max.	Min.	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