

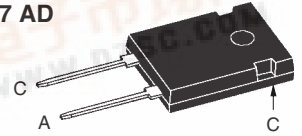
Fast Recovery Diode
SONIC-FRD™ series

I_{FAVM} = 20 A
V_{RRM} = 1800 V

V _{RSM}	V _{RRM}	Type
V	V	
1800	1800	DH 20-18A



TO-247 AD



A = Anode, C = Cathode

Symbol	Conditions	Maximum Ratings	
I _{FRMS}	T _{VJ} = T _{VJM}	70	A
I _{FAVM}	T _C = 80°C; rectangular, d = 0.5	20	A
I _{FRM}	t _p < 10 μs; rep. rating, pulse width limited by T _{VJM}	200	A
I _{FSM}	T _{VJ} = 45°C; t _p = 10 ms (50 Hz), sine	150	A
E _{AS}	T _{VJ} = 25°C; non-repetitive I _{AS} = tbd A; L = 100 μH	tbd	mJ
I _{AR}	V _A = 1.5·V _R typ.; f = 10 kHz; repetitive	tbd	A
T _{VJ}		-40...+150	°C
T _{VJM}		150	°C
T _{stg}		-40...+150	°C
P _{tot}	T _C = 25°C	140	W
M _d	Mounting torque	0.8...1.2	Nm
Weight		6	g

Features

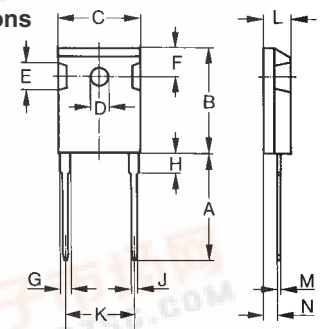
- Small temperature dependence for
 - forward voltage drop
 - reverse recovery current
- Optimized for
 - dynamic avalanche ruggedness
 - low loss performance
- Exceptionally soft recovery
- Low reverse recovery current characteristic
- Soft recovery current without tail
- Optimized for high frequency hard switching

Applications

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

Symbol	Conditions	Characteristic Values	
		typ.	max.
I _R	T _{VJ} = 25°C	20	50
	T _{VJ} = 125°C	0.4	
V _F	I _F = 20 A; T _{VJ} = 125°C	2.5	V
	T _{VJ} = 25°C	2.5	2.9
V _{T0}	For power-loss calculations only	2.1	V
r _T	T _{VJ} = T _{VJM}	44	mΩ
R _{thJC}		0.9	K/W
R _{thCH}		0.25	K/W
t _{rr}	I _F = 20 A; -di/dt = 450 A/μs; V _R = 1200 V;	230	ns
I _{RM}	T _{VJ} = 25°C	23	A
S	t _b / t _a	3.6	
RSF	di _F /dt / di _R /dt	tbd	
t _{rr}	I _F = 20 A; -di/dt = 450 A/μs; V _R = 1200 V;	400	ns
I _{RM}	T _{VJ} = 125°C	27	A
S	t _b / t _a	7	
RSF	di _F /dt / di _R /dt	tbd	

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	1.5	2.49	0.087	0.102

Data according to IEC 60747