

ADI16-18A

AVALANCHE DIODE



Features

- Low forward voltage drop
- Soft recovery
- Hermetic metal cases with ceramic insulators

Application

- Inverters and choppers
- AC motor control
- Snubber and free-wheeling diodes

$I_{F(AV)}$	11A
V_{RRM}	1600V
I_{FSM}	250A
I_{FRMS}	18A

SYMBOL		PARAMETERS	TESTING CONDITION	$T_j(^{\circ}C)$	VALUES	UNIT
Current	$I_{F(AV)}$	Average forward current	180° half sine wave 50Hz $T_{hs}=150^{\circ}C$	150	11	A
	I_{FSM}	Surge forward current	10ms half sine wave $V_R=0.6V_{RRM}$	150	250	A
Characteristics	V_{RRM}	Repetitive peak reverse voltage	V_{RRM} $t_p=10ms$ $V_{RSM}=V_{RRM}+100V$	150	1600	V
	V_{FM}	Peak on-state voltage	$I_{TM}=2400A$	25	1.4	V
	V_{FO}	Threshold voltage		150	Max.0.85	V
	r_F	Forward slope resistance			Max.15	mΩ
Thermal & Mechanical Data	$R_{th(j-h)}$	Thermal resistance Junction to heat sink	At 180° sine		Max.3	K/W
	T_{stg}	Storage temperature			-40-160	°C
	W	Weight			5	g
	M_d	Mounting torque			2.2-2.8	Nm

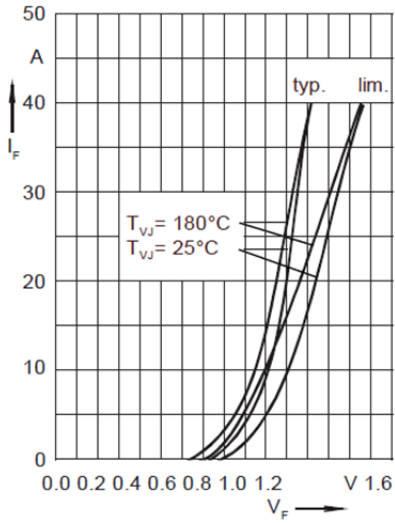


Fig. 1 Forward characteristics

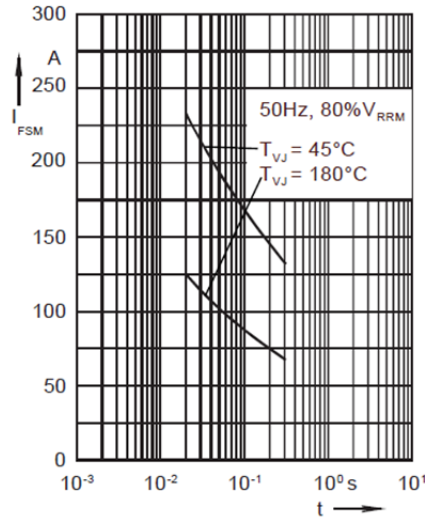


Fig. 2 Surge overload current
 I_{FSM} : crest value, t : duration

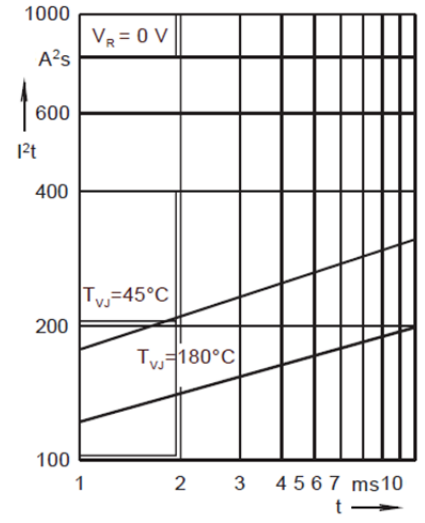


Fig. 3 I^2t versus time (1-10 ms)

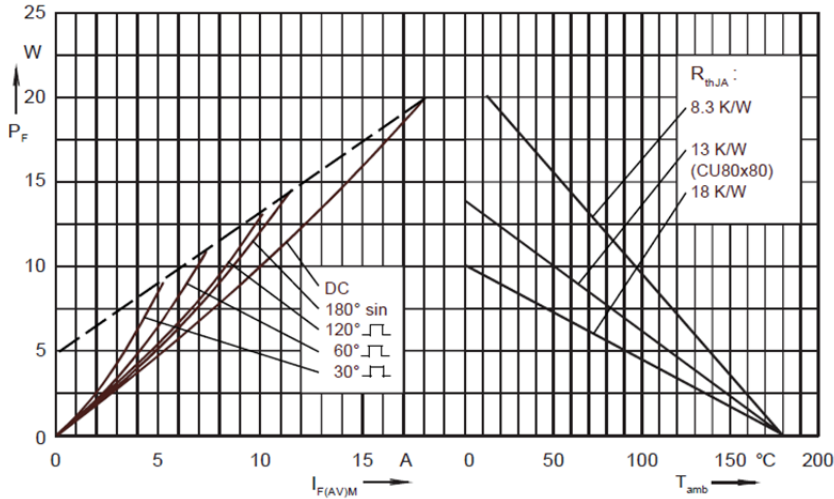


Fig. 4 Power dissipation versus forward current and ambient temperature

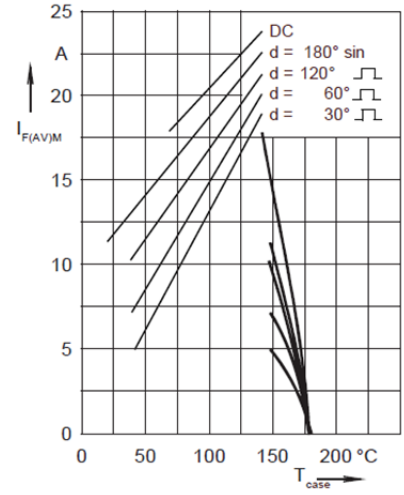


Fig. 5 Max. forward current at case temperature

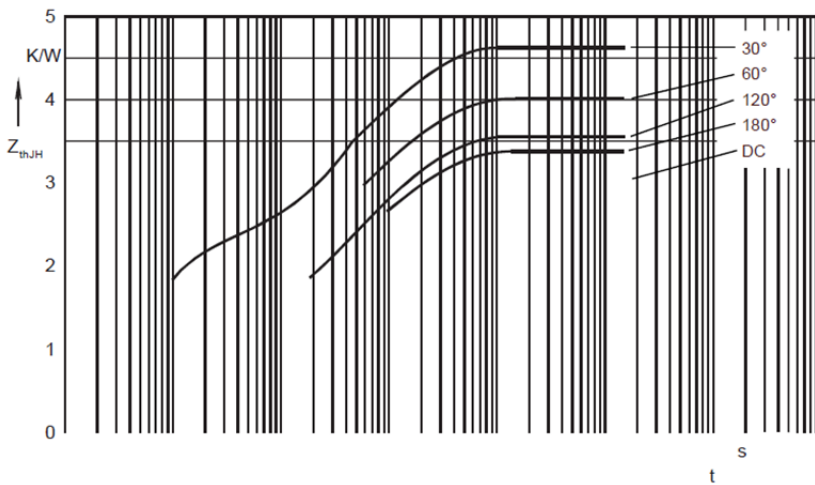


Fig. 6 Transient thermal impedance junction to heatsink

R_{thJH} for various conduction angles d :

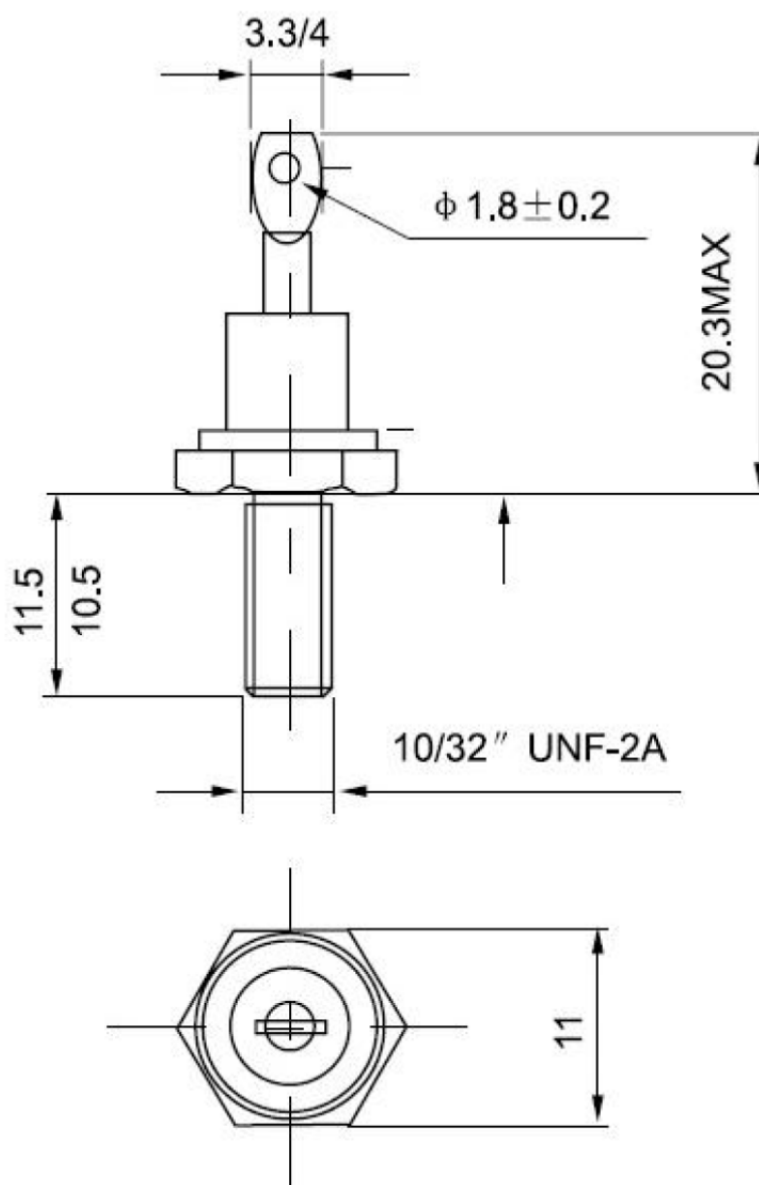
d	R_{thJH} (K/W)
DC	3.0
180°	3.35
120°	3.56
60°	4.0
30°	4.64

Constants for Z_{thJH} calculation:

i	R_{thi} (K/W)	t_i (s)
1	0.095	0.00032
2	0.515	0.0102
3	1.39	0.360
4	1.0	2.30

Dimensions:

S38



For metric devices: $M5 \times 0.8$

DO4 10-25A