ADI16-18F
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(°C)	VALUES	UNIT
Current	$I_{F(AV)}$	Average forward current	180° half sine wave 50Hz Ths=150°C	150	11	A
	I_{FSM}	Surge forward current	10ms half sine wave VR=0.6VRRM	150	250	A
Characteristics	V_{RRM}	Repetitive peak reverse voltage	V_{RRM} tp=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	℃
	W	Weight			5	g
	M_d	Mounting torque			2.2 -2.8	Nm

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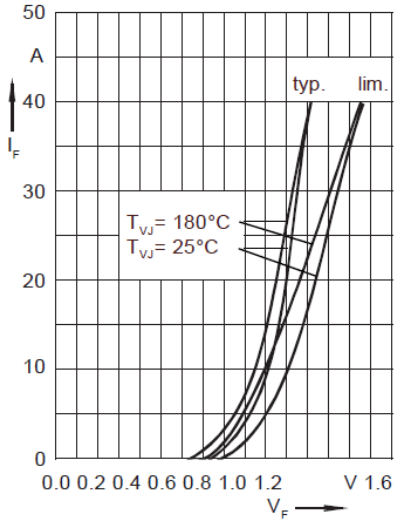


Fig. 1 Forward characteristics

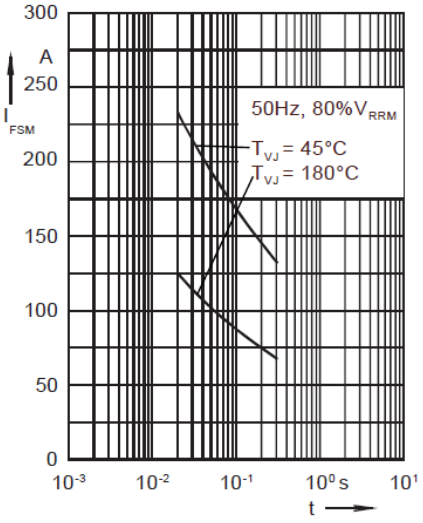


Fig. 2 Surge overload current
I_{FSM}: crest value, t: duration

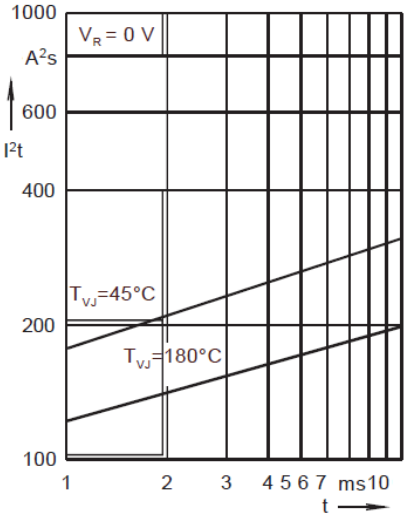


Fig. 3 I^2t versus time (1-10 ms)

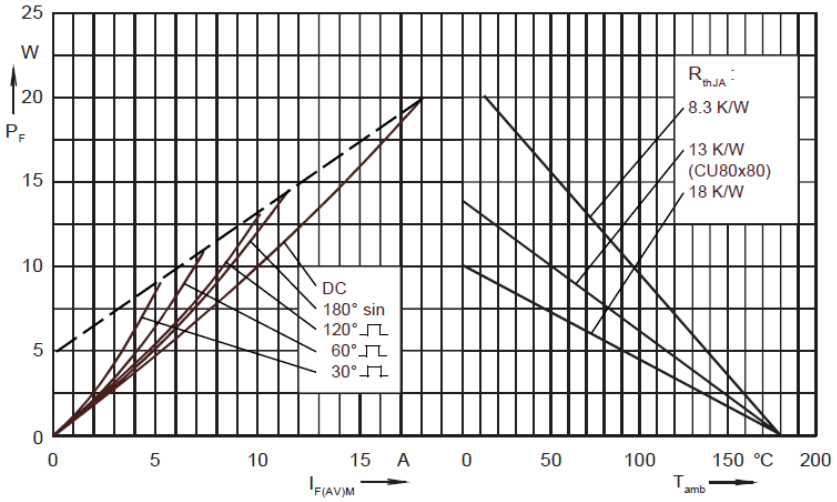


Fig. 4 Power dissipation versus forward current and ambient temperature

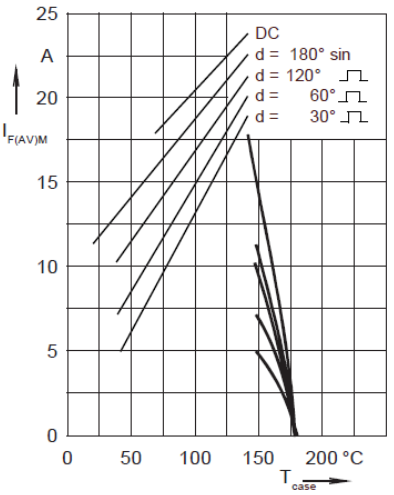
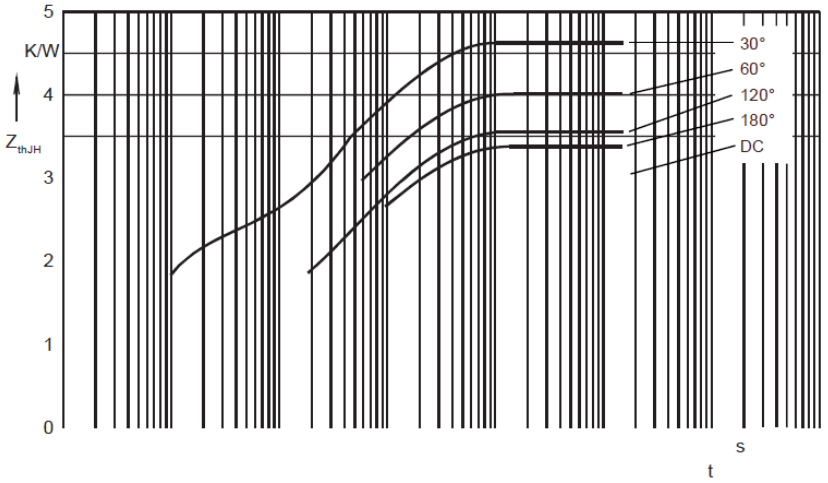


Fig. 5 Max. forward current at case temperature



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

Fig. 6 Transient thermal impedance junction to heatsink

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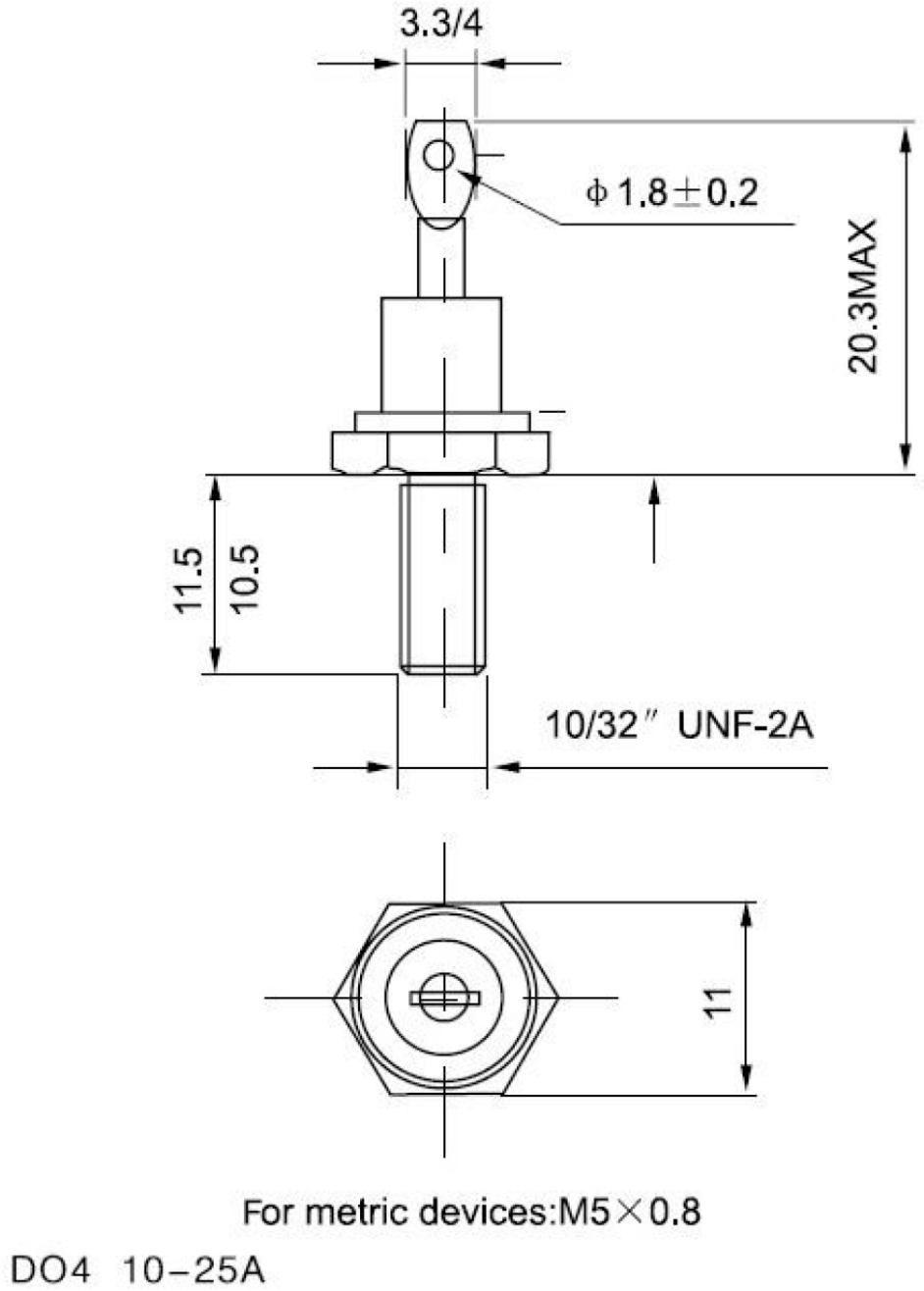
Dimensions:

S38



For metric devices:M5×0.8

DO4 10–25A

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