

Standard Rectifier

V_{RRM} = 2x 1200 V

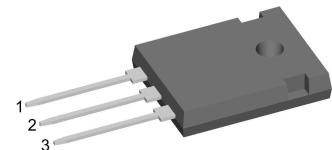
I_{FAV} = 30 A

V_F = 1.2 V

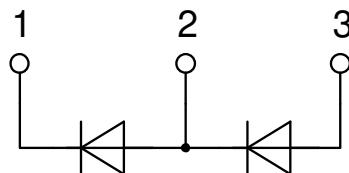
Phase leg

Part number

DMA30P1200HB



Backside: anode/cathode



Features / Advantages:

- Planar passivated chips
- Very low leakage current
- Very low forward voltage drop
- Improved thermal behaviour
- High commutation robustness
- High surge capability

Applications:

- Diode for main rectification
- For single and three phase bridge configurations

Package: TO-247

- Industry standard outline
- RoHS compliant
- Epoxy meets UL 94V-0

Disclaimer Notice

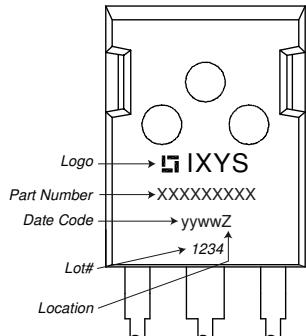
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Rectifier

Symbol	Definition	Conditions	Ratings			
			min.	typ.	max.	
V_{RSM}	max. non-repetitive reverse blocking voltage	$T_{VJ} = 25^\circ\text{C}$			1300	V
V_{RRM}	max. repetitive reverse blocking voltage	$T_{VJ} = 25^\circ\text{C}$			1200	V
I_R	reverse current	$V_R = 1200 \text{ V}$ $V_R = 1200 \text{ V}$	$T_{VJ} = 25^\circ\text{C}$ $T_{VJ} = 150^\circ\text{C}$		40 1.5	μA mA
V_F	forward voltage drop	$I_F = 30 \text{ A}$ $I_F = 60 \text{ A}$ $I_F = 30 \text{ A}$ $I_F = 60 \text{ A}$	$T_{VJ} = 25^\circ\text{C}$ $T_{VJ} = 150^\circ\text{C}$		1.26 1.53 1.20 1.57	V V
I_{FAV}	average forward current	$T_C = 130^\circ\text{C}$ 180° sine	$T_{VJ} = 175^\circ\text{C}$		30	A
V_{F0} r_F	threshold voltage slope resistance } for power loss calculation only		$T_{VJ} = 175^\circ\text{C}$		0.81 12.7	V $\text{m}\Omega$
R_{thJC}	thermal resistance junction to case				0.8	K/W
R_{thCH}	thermal resistance case to heatsink			0.3		K/W
P_{tot}	total power dissipation		$T_C = 25^\circ\text{C}$		185	W
I_{FSM}	max. forward surge current	$t = 10 \text{ ms}; (50 \text{ Hz}), \text{sine}$ $t = 8,3 \text{ ms}; (60 \text{ Hz}), \text{sine}$ $t = 10 \text{ ms}; (50 \text{ Hz}), \text{sine}$ $t = 8,3 \text{ ms}; (60 \text{ Hz}), \text{sine}$	$T_{VJ} = 45^\circ\text{C}$ $V_R = 0 \text{ V}$ $T_{VJ} = 150^\circ\text{C}$ $V_R = 0 \text{ V}$		370 400 315 340	A
I^2t	value for fusing	$t = 10 \text{ ms}; (50 \text{ Hz}), \text{sine}$ $t = 8,3 \text{ ms}; (60 \text{ Hz}), \text{sine}$ $t = 10 \text{ ms}; (50 \text{ Hz}), \text{sine}$ $t = 8,3 \text{ ms}; (60 \text{ Hz}), \text{sine}$	$T_{VJ} = 45^\circ\text{C}$ $V_R = 0 \text{ V}$ $T_{VJ} = 150^\circ\text{C}$ $V_R = 0 \text{ V}$		685 665 495 480	A^2s A^2s A^2s A^2s
C_J	junction capacitance	$V_R = 400 \text{ V}; f = 1 \text{ MHz}$	$T_{VJ} = 25^\circ\text{C}$	11		pF

Package TO-247

Symbol	Definition	Conditions	min.	typ.	max.	Unit
I_{RMS}	RMS current	per terminal			70	A
T_{VJ}	virtual junction temperature		-55		175	°C
T_{op}	operation temperature		-55		150	°C
T_{stg}	storage temperature		-55		150	°C
Weight				6		g
M_d	mounting torque		0.8		1.2	Nm
F_c	mounting force with clip		20		120	N

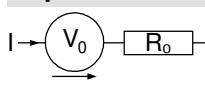
Product Marking

Part description

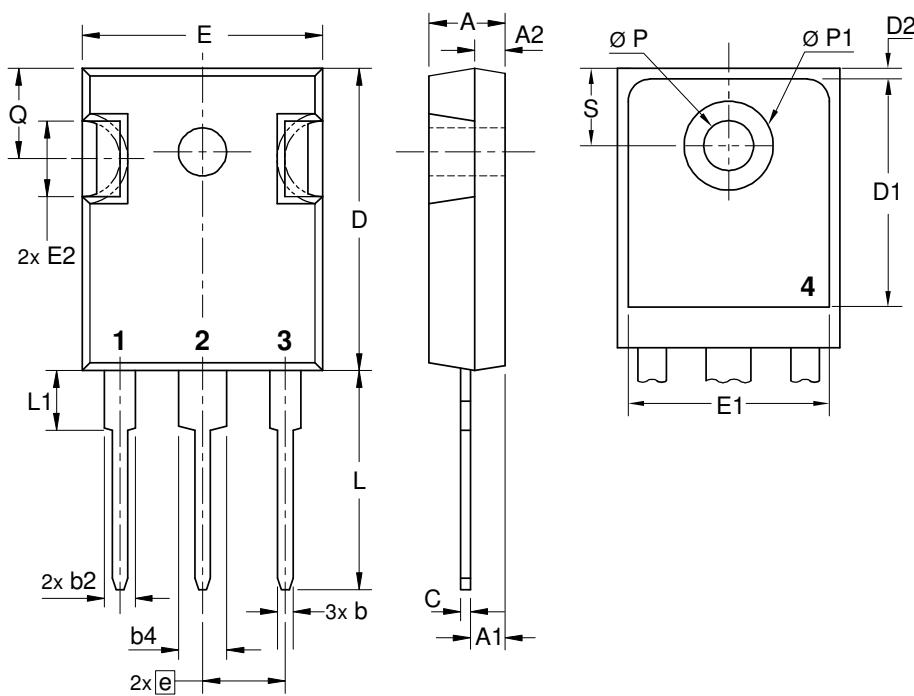
D = Diode
 M = Standard Rectifier
 A = (up to 1800V)
 30 = Current Rating [A]
 P = Phase leg
 1200 = Reverse Voltage [V]
 HB = TO-247AD (3)

Ordering	Ordering Number	Marking on Product	Delivery Mode	Quantity	Code No.
Standard	DMA30P1200HB	DMA30P1200HB	Tube	30	522386

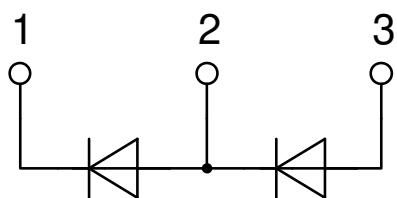
Similar Part	Package	Voltage class
DMA30P1600HB	TO-247AD (3)	1600

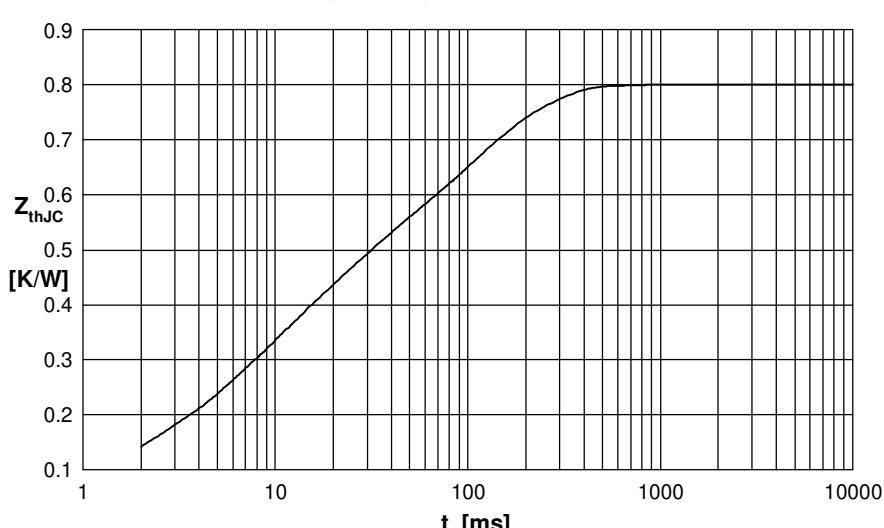
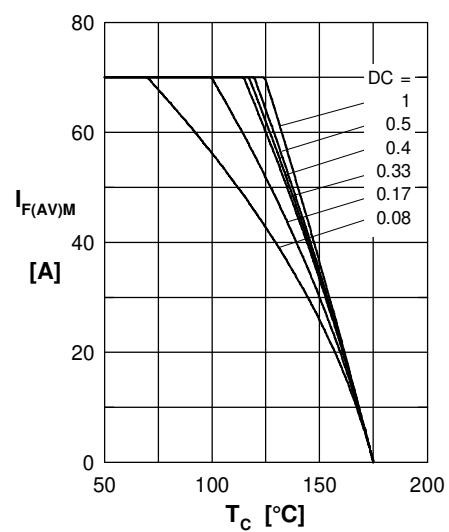
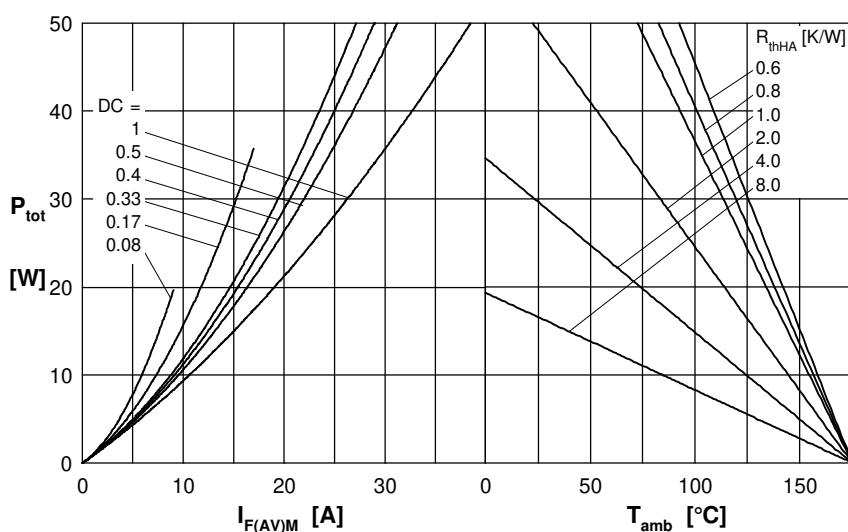
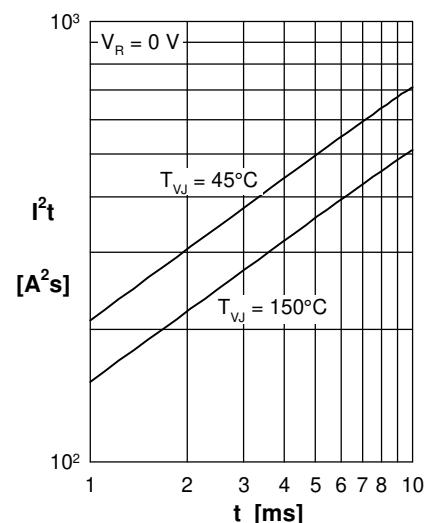
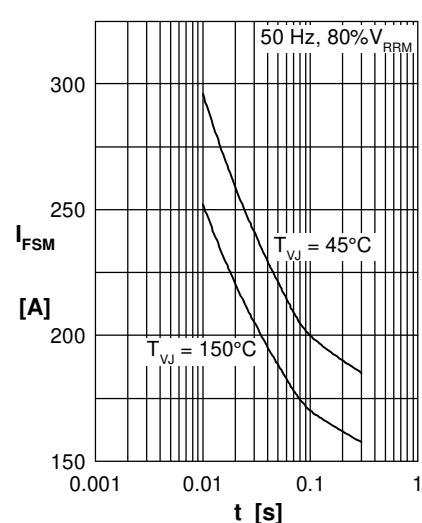
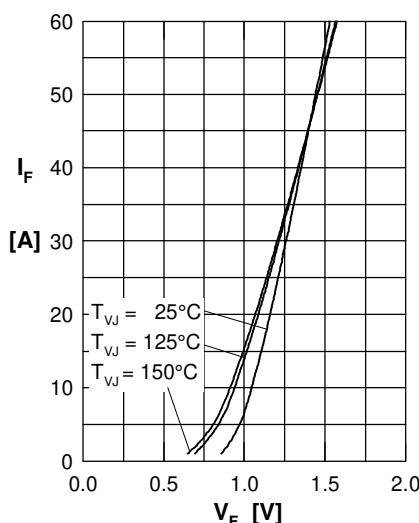
Equivalent Circuits for Simulation
** on die level*
 $T_{VJ} = 175^\circ\text{C}$

	Rectifier	
$V_{0\ max}$	threshold voltage	0.81
$R_{0\ max}$	slope resistance *	10.1

Outlines TO-247


Sym.	Inches min. max.	Millimeter min. max.
A	0.185 0.209	4.70 5.30
A1	0.087 0.102	2.21 2.59
A2	0.059 0.098	1.50 2.49
D	0.819 0.845	20.79 21.45
E	0.610 0.640	15.48 16.24
E2	0.170 0.216	4.31 5.48
e	0.215 BSC	5.46 BSC
L	0.780 0.800	19.80 20.30
L1	- 0.177	- 4.49
Ø P	0.140 0.144	3.55 3.65
Q	0.212 0.244	5.38 6.19
S	0.242 BSC	6.14 BSC
b	0.039 0.055	0.99 1.40
b2	0.065 0.094	1.65 2.39
b4	0.102 0.135	2.59 3.43
c	0.015 0.035	0.38 0.89
D1	0.515 -	13.07 -
D2	0.020 0.053	0.51 1.35
E1	0.530 -	13.45 -
Ø P1	- 0.29	- 7.39



Rectifier

 Constants for Z_{thJC} calculation:

i	R_{thi} (K/W)	t_i (s)
1	0.05	0.0006
2	0.13	0.0040
3	0.25	0.0130
4	0.37	0.1100