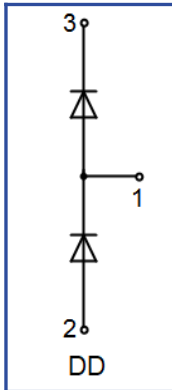
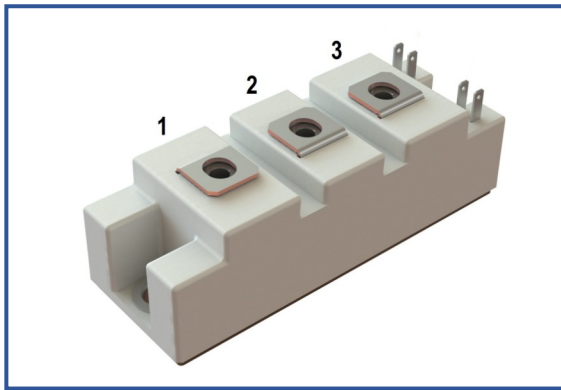


Industry standard 34mm half-bridge rectifier module

1700 V 200 A



Chip features

- fast and soft reverse recovery
- low voltage drop

Design features

- copper baseplate
- Al₂O₃ DBC substrate
- ultrasonically welded power terminals
- Improved thermal cycling
- RoHS compliant

Typical application

- AC motor drives
- solar inverter
- air conditioning
- high power converters and UPS

Maximum rated values

Definition	Symbol	Conditions	Value	Unit
Diode				
Repetitive peak reverse voltage	V_{RRM}		1700	V
Maximum allowable forward current (continuous)	I_{F25}	$T_{vj(max)} = 175^{\circ}C; T_c = 25^{\circ}C.$	219	A
	I_{F80}	$T_{vj(max)} = 175^{\circ}C; T_c = 80^{\circ}C.$	166	A
Repetitive peak forward current ^{*1}	I_{FRM}	$I_{FRM} = 3 \times I_{Fnom}; t_p = 1 \text{ ms}.$	600	A
Junction operating temperature	$T_{vj(op)}$		-40...+150	°C
Module				
Storage temperature	T_{stg}		-55...+50	°C
Isolation voltage	U_{isol}	AC sin 50 Hz; t = 1 min.	4000	V

Characteristics

Definition	Symbol	Conditions	Value			Unit.	
			min.	typ.	max.		
Diode							
Forward voltage drop	V_F	$I_F = 200 \text{ A}; t_u = 1000 \mu\text{s}.$	$T_{vj} = 25^{\circ}C$	-	1.98	-	V
			$T_{vj} = 150^{\circ}C$	-	2.16	-	V
Reverse recovery time	t_{rr}		$T_{vj} = 25^{\circ}C$	-	-	-	ns
			$T_{vj} = 150^{\circ}C$	-	-	-	ns
Peak reverse current	I_{RM}	$V_R = 920 \text{ V}; I_F = 200 \text{ A}; di_F/dt = 3400 \text{ A}/\mu\text{s}.$	$T_{vj} = 25^{\circ}C$	-	-	-	A
			$T_{vj} = 150^{\circ}C$	-	-	-	A
Recovered charge	Q_r		$T_{vj} = 25^{\circ}C$	-	-	-	μC
			$T_{vj} = 150^{\circ}C$	-	-	-	μC
Reverse recovery energy	E_{rec}		$T_{vj} = 25^{\circ}C$	-	-	-	mJ
			$T_{vj} = 150^{\circ}C$	-	-	-	mJ

*1 Pulse width and repetition rate should be such that device junction temperature does not exceed maximum T_{vj} rating.

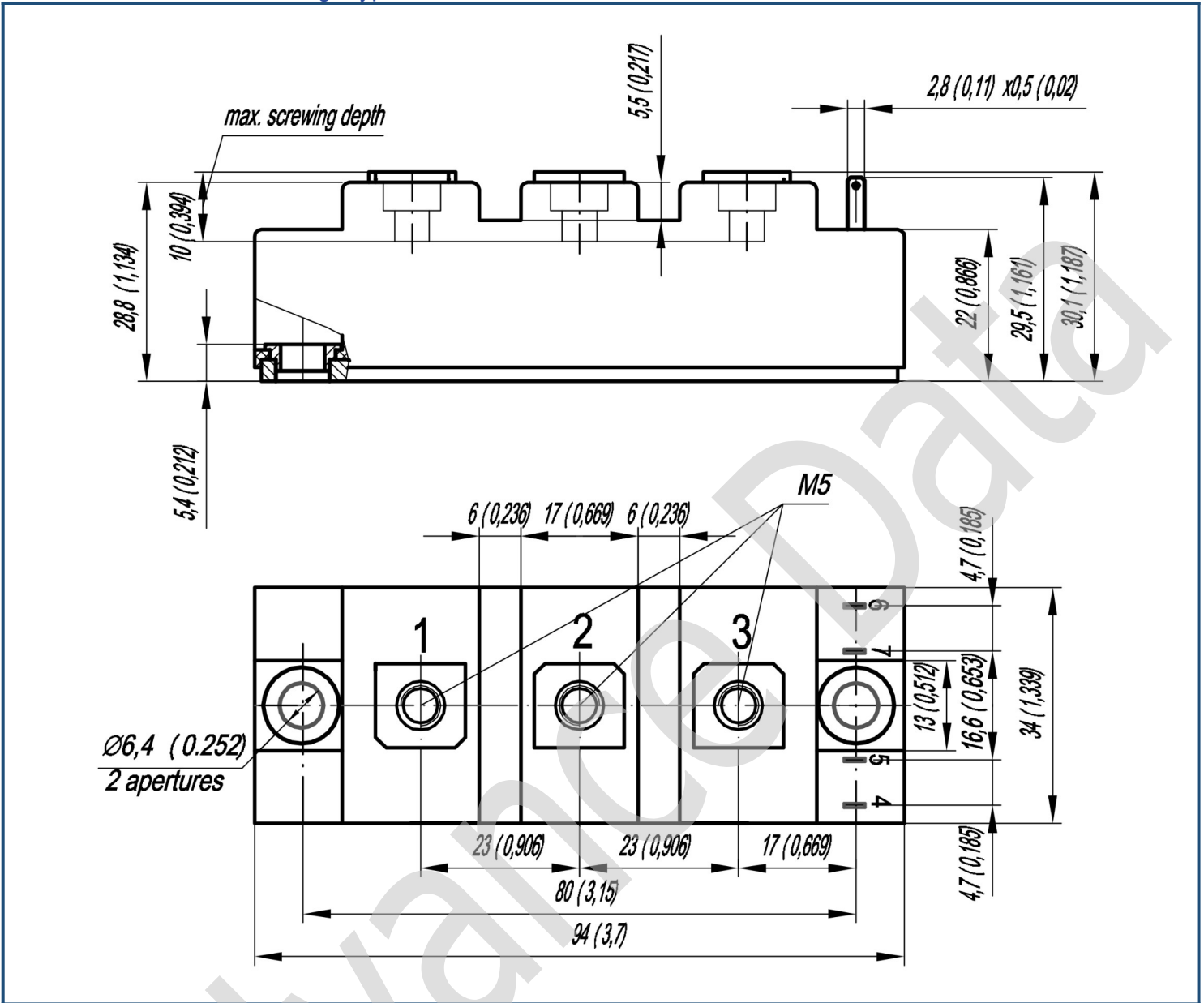
Characteristics

Definition	Symbol	Conditions	Value			Unit.	
			min.	typ.	max.		
Diode							
Threshold voltage	$V_{(T0)}$	$T_{vj} = 150^{\circ}\text{C}; I_{F1} = 50 \text{ A}; I_{F2} = 200 \text{ A};$	-	-	0.90	V	
Forward slope resistance	r_T	$t_u = 1000 \mu\text{s}$	-	-	8.80	m Ω	
Thermal resistance junction to case	$R_{th(JC-D)}$	DC; $I_{CE} = 200 \pm 10 \text{ A}; I_{test} = 0.5 \text{ A}.$	-	-	0.240	K/W	
Module							
Pin resistance	R_{Pxy}	$T_{vj} = 25^{\circ}\text{C}.$	R_{P12}	-	0.47	0.50	m Ω
			R_{P13}	-	0.66	0.66	
Parasitic inductance between terminals	L_{Pce}		-	27	-	nH	
Thermal resistance case to heatsink	R_{thCH}	per module	-	0.02	0.04	K/W	
Mounting torque for screws to heatsink	M_s	to heatsink M6	3.00	-	5.00	N*m	
Mounting torque for terminal screws	M_t	to terminals M5	1.80	2.00	2.20	N*m	
Weight	W		-	150	170	g	

“-” — data will be refined as additional tests are conducted and statistics are collected.

Notes:

- Insulating material operating temperature 125°C max;
- Case temperature 125°C max;
- The recommended operating junction temperature $T_{vj\ op} = -40 \dots +150^{\circ}\text{C}.$

Overall dimensions: Package type – FA

Part numbering guide

MDFA	-	DD	17	SM	-	200	N	
MDFA								Module package type: FA
		DD						Half-bridge connection of diodes
			17					Voltage rating ($V_{RRM}/100$)
				SM				FRD chipset modification
						200		Current Rating
							N	Climatic version: normal climate

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