



# Rectifier Diode Modules

## AMKE 81



$V_{RSM}$ V	$V_{RRM}$ V	$I_{FRMS} = 310 \text{ A}$ (maximum value for continuous operation) $I_{FAV} = 160 \text{ A}$ (sin. 180; $T_c = 95^\circ\text{C}$ )		
900	800	AMKE 81-08		
1300	1200	AMKE 81-12		
1700	1600	AMKE 81-16		

Symbols and parameters			Values	Units
$I_{FAV}$	Mean forward current	$\sin 180; T_c = 85 \text{ (100)}^\circ\text{C}$	82 (57)	A
$I_D$	Direct output current	$P3/120; T_a = 45^\circ\text{C}; B2/B6$ $P3/180F; T_a = 35^\circ\text{C}; B2/B6$	63 / 70 135 / 175	A A
$I_{FSM}$	Surge forward current	$T_{vj} = 25^\circ\text{C}; 10 \text{ ms}$ $T_{vj} = 125^\circ\text{C}; 10 \text{ ms}$	2000 1750	A A
$i^2t$	$I^2t$ value, rating for fusing	$T_{vj} = 25^\circ\text{C}; 8.3...10 \text{ ms}$ $T_{vj} = 125^\circ\text{C}; 8.3...10 \text{ ms}$	20000 15000	$\text{A}^2\text{s}$ $\text{A}^2\text{s}$
$V_F$	Forward voltage	$T_{vj} = 25^\circ\text{C}; I_F = 300 \text{ A}$	max. 1.55	V
$V_{(TO)}$	On-state threshold voltage	$T_{vj} = 125^\circ\text{C}$	max. 0.85	V
$r_T$	On-state slope resistance	$T_{vj} = 125^\circ\text{C}$	max. 1.8	$\text{m}\Omega$
$I_{RD}$	Direct reverse current	$T_{vj} = 125^\circ\text{C}; V_{RD} = V_{RRM}$	max. 4.5	mA
$R_{th(j-c)}$	Thermal resistance, junction to case	per diode / per module	0.4	K/W
$R_{th(c-s)}$	Thermal resistance, junction to heatsink	per diode / per module	0.2	K/W
$T_{vj}$	(Virtual) junction temperature		-40 ... +125	$^\circ\text{C}$
$T_{stg}$	Storage temperature range		-40 ... +125	$^\circ\text{C}$
$V_{isol}$	Insulation test voltage (r.m.s.)	a.c. 50 Hz; r.m.s.; 1s / 1min. a.c. 50 Hz; r.m.s.; 1s / 1min. for AMK ... H4	3600 / 3000 4800 / 4000	$\text{V}^\sim$ $\text{V}^\sim$
$M_s$	Mounting torque on heatsink		$5 \pm 15\%$	Nm
$M_t$	Mounting torque for terminals		$3 \pm 15\%$	Nm
$a$	Maximum allowable acceleration		$5 * 9.81$	$\text{m}/\text{s}^2$
$W$	Weight		95	g

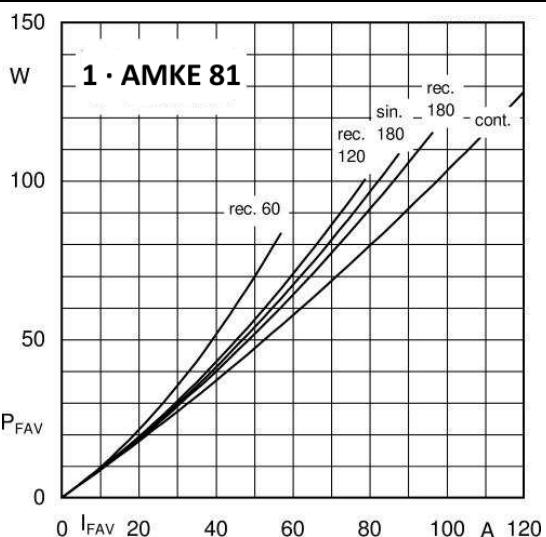


Fig. 11L Power dissipation per diode vs. forward current

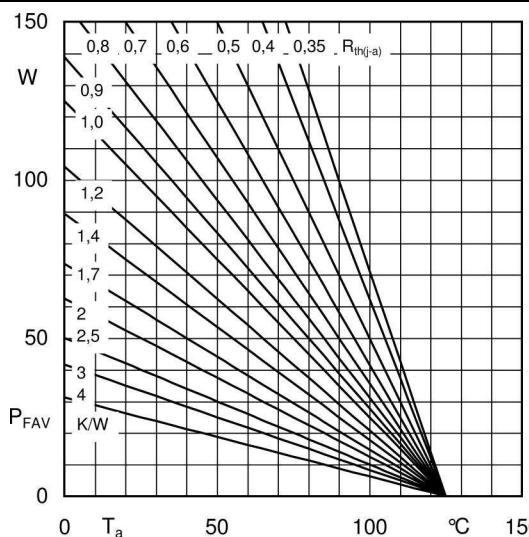


Fig. 11R Power dissipation per diode vs. ambient temperature

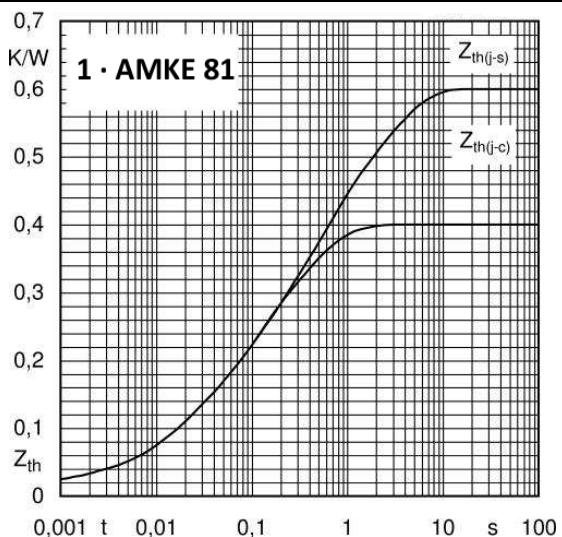


Fig. 14 Transient thermal impedance vs. time

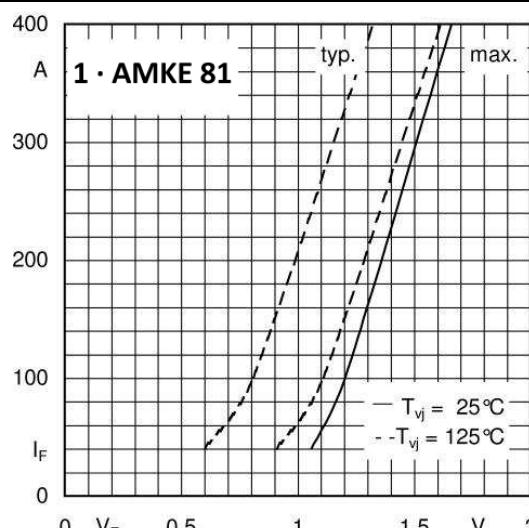


Fig. 15 Forward characteristics

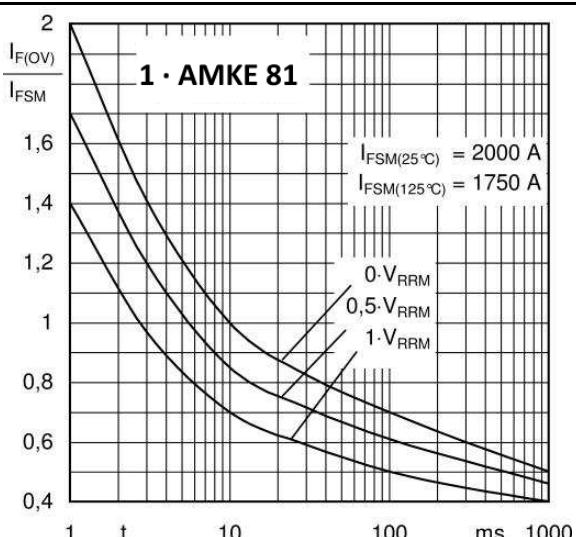
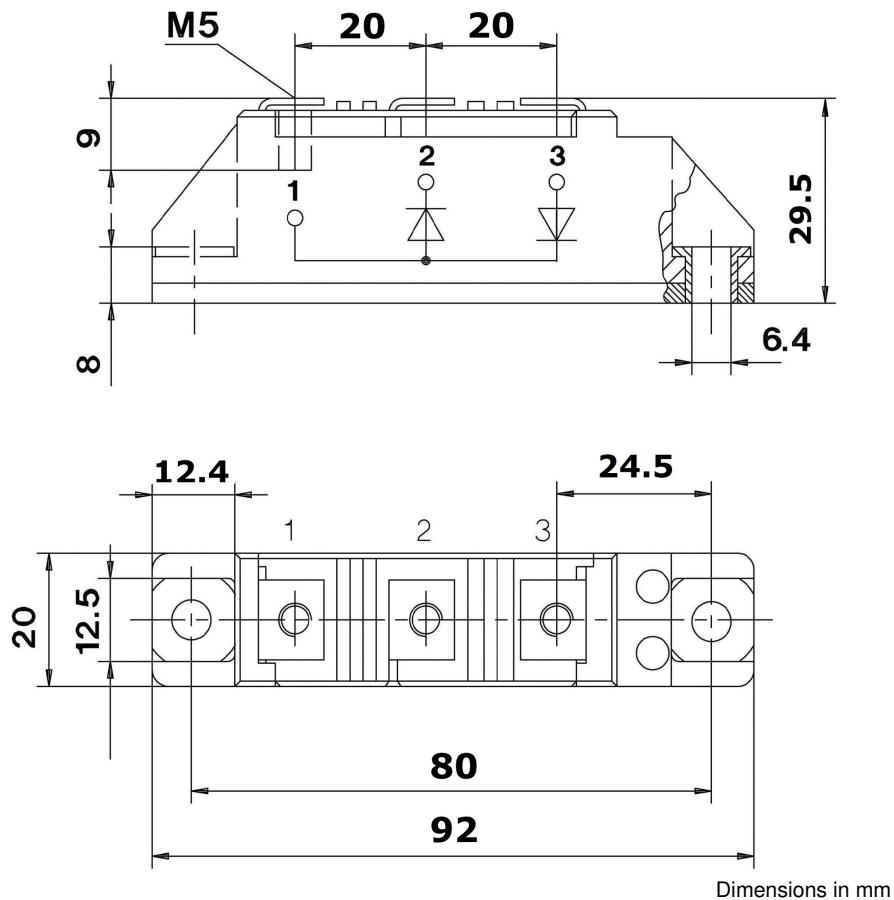


Fig. 16 Surge overload current vs. time

## DIMENSIONS



## TOPOLOGY OF INTERNAL CONNECTION

