AS ENERGI

Fast Diode Modules
AMKE 800-F17

Symbols and parameters				Values			Units
				min.	typ.	max.	
V_{RRM}	Repetitive peak reverse voltage	T_j = 25°C			1700		V
I_F	Forward current (actual value)	T_j = 175°C	T_C = 25°C T_C = 100°C		953 601		A A
I_{FRM}	Repetitive peak forward current				1600		A
I_{FSM}	Surge forward current	10 ms	T_j = 25°C T_j = 150°C		4160 3712		A A
i^2t	I^2t value, rating for fusing	10 ms	T_j = 25°C T_j = 150°C		86528 68895		A^2s A^2s
V_F	Forward voltage	I_F = 800 A chiplevel	T_j = 25°C T_j = 150°C		2.00 2.15	2.40 2.57	V V
V_{F0}	Forward threshold voltage	chiplevel	T_j = 25°C T_j = 150°C		1.32 1.08	1.56 1.22	V V
r_F	On-state slope resistance, forward slope resistance	chiplevel	T_j = 25°C T_j = 150°C		0.86 1.34	1.05 1.69	mΩ mΩ
I_R	Reverse current	$V_R = V_{RRM}$	T_j = 25°C T_j = 150°C			0.68 200	mA mA
Q_{RR}	Reverse recovery charge	I_F = 800 A di/dt_{off} = 4000 A/µs V_R = 1200 V	T_j = 150°C		210		µC
I_{RRM}	Peak reverse recovery current		T_j = 150°C		400		A
t_{rr}	Reverse recovery time		T_j = 150°C		1.2		µs
E_{rr}	Energy dissipation during reverse recovery		T_j = 150°C		140		mJ
$R_{th(j-c)}$	Thermal resistance, junction to case	per diode				0.58	K/W
$R_{th(c-s)}$	Thermal resistance, junction to heatsink	per diode/module (λ_{grease}=0.81 W/ (m*K))			0.045		K/W
		per diode/module, pre-applied phase change			-		K/W
L_{CE}	Parasitic collector-emitter inductance				15		nH
$R_{CC'+EE'}$	Resistance of the interconnections	measured per switch	T_C = 25°C T_C = 125°C		0.23 0.3		mΩ mΩ
T_j	Junction temperature			-40		+175	°C
T_{stg}	Storage temperature range			-40		+125	°C
V_{isol}	Insulation test voltage (r.m.s.)	a.c. 50 Hz; r.m.s.;	1 s 1 min		4800 4000		V V
M_S	Mounting torque on heatsink			3		5	Nm
M_t	Mounting torque for terminals			2.5		5	Nm
a	Maximum allowable acceleration				5*9.81		m/s^2
W	Weight				330		g

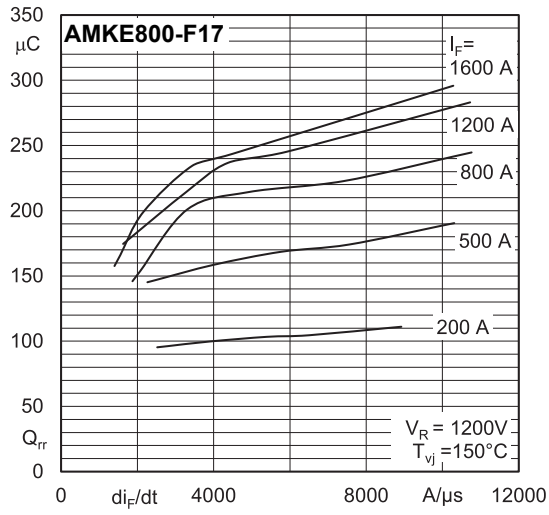

Fig. 1: Typ. recovery charge vs. current decrease

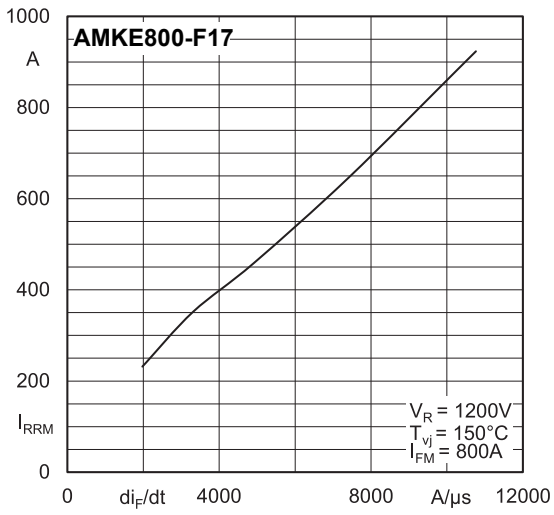

Fig. 2: Peak recovery current vs. current decrease

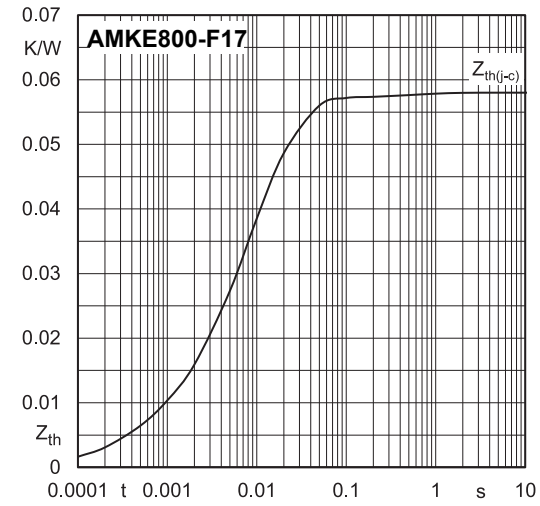

Fig. 3: Transient thermal impedance vs. time

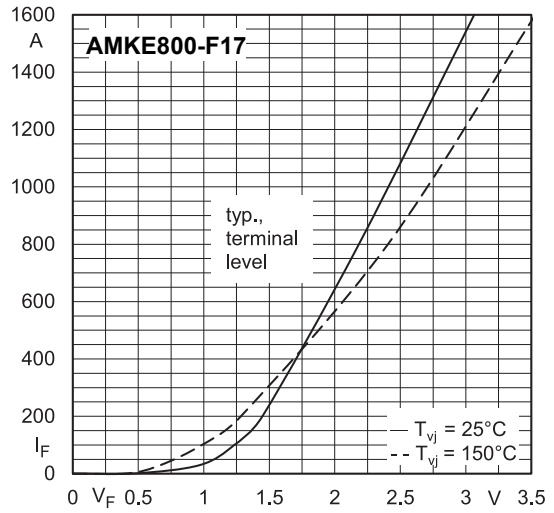

Fig. 4: Forward characteristics

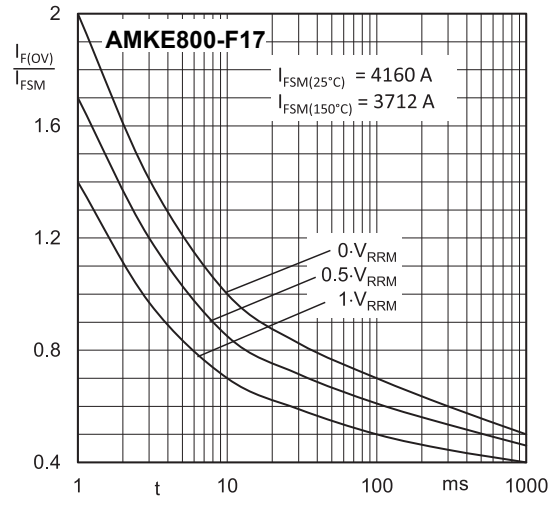

Fig. 5: Surge overload current vs. time

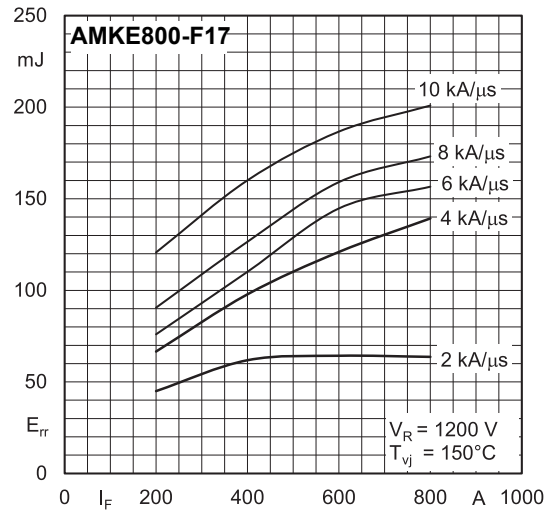

Fig. 6: Typ. turn-off energy dissipation per pulse

DIMENSIONS

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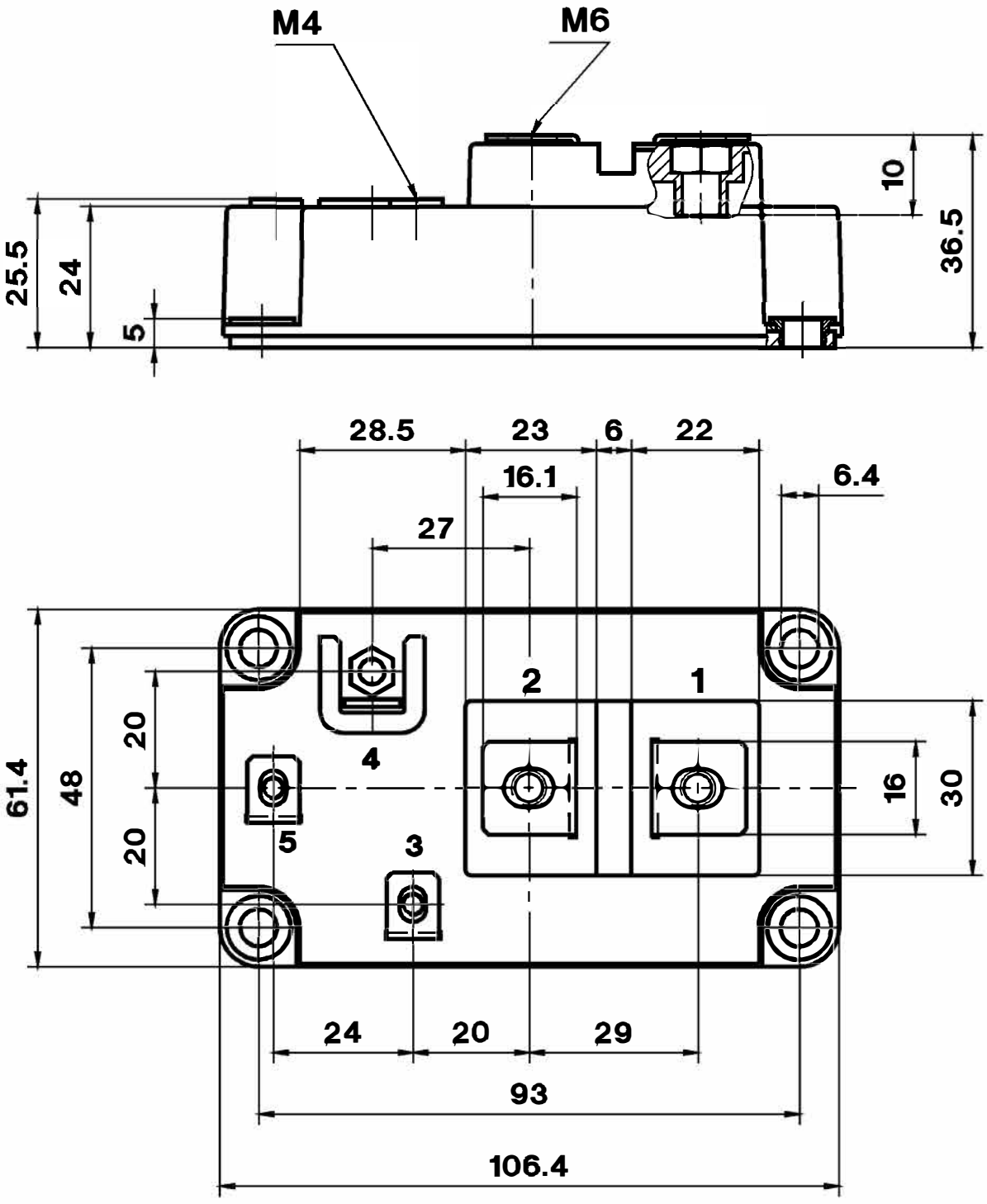

TOPOLOGY OF INTERNAL CONNECTION