



<DIODE Modules>

RM800DY-34S

HIGH POWER SWITCHING USE INSULATED TYPE



dual pack

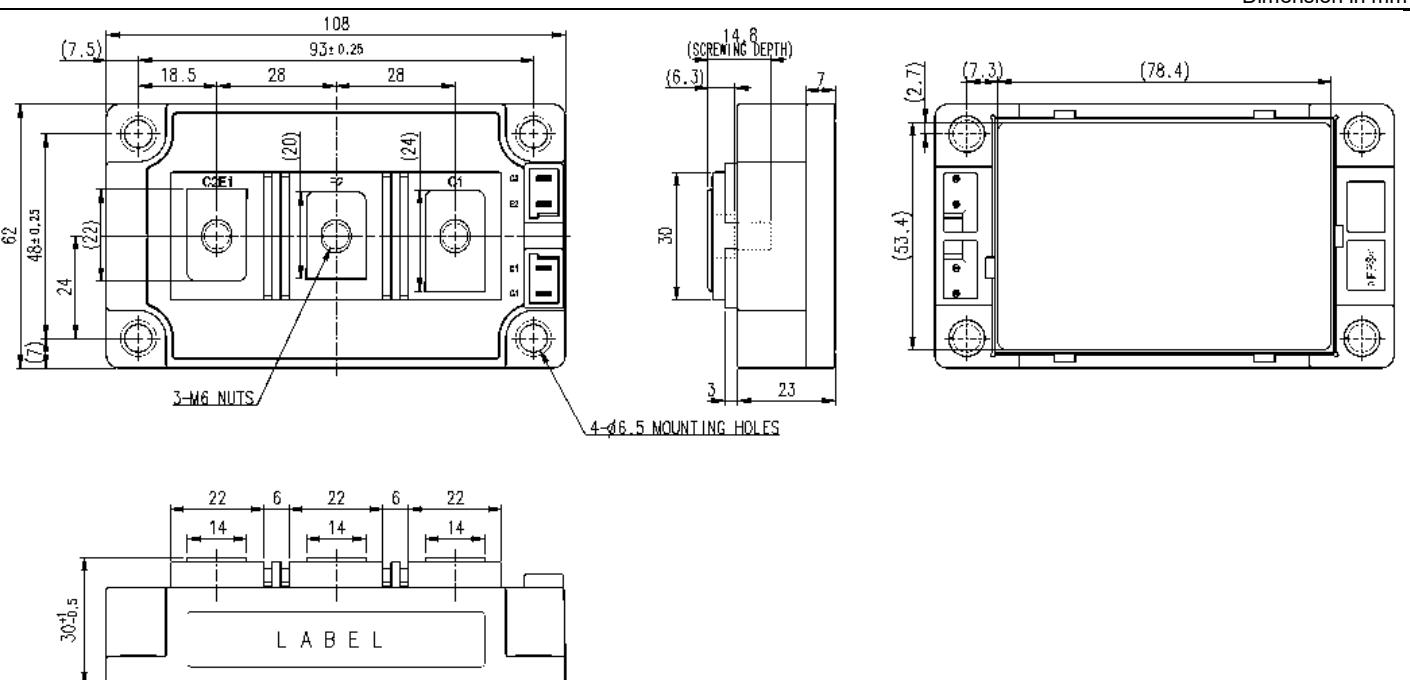
Forward current I_{DC}	8 0 0 A
Repetitive peak reverse voltage V_{RRM}	1 7 0 0 V
Maximum junction temperature T_{vjmax}	1 7 5 °C

APPLICATION

AC Motor Control, Motion/Servo Control, Power supply, Photovoltaic power, Wind power, etc.

OUTLINE DRAWING & INTERNAL CONNECTION

Dimension in mm



INTERNAL CONNECTION



Terminal code

C2E1 : A2
E2 : A1K2
C1 : K1

Tolerance otherwise specified		
Division of Dimension		Tolerance
0.5	to	3
over 3	to	6
over 6	to	30
over 30	to	120
over 120	to	400
over 400	to	1000
over 1000	to	2000
over 2000	to	4000

MAXIMUM RATINGS (T_{vj}=25 °C, unless otherwise specified)

Symbol	Item	Conditions	Rating	Unit
V _{RRM}	Repetitive peak reverse voltage	-	1700	V
V _{RSM}	Non-repetitive peak reverse voltage	-	1700	V
V _{R(DC)}	Reverse DC blocking voltage	-	1360	V
I _{DC}	Forward current	DC (Note1)	800	A
I _{FSM}	Surge non-repetitive forward current	1 cycle of half wave at 60 Hz, peak value, T _{vj} =25 °C start, V _{RM} =0 V	4000	A
I ² t	Current square time for fusing	t _w =8.3 ms, T _{vj} =25 °C start, Value for one cycle of surge current	6.0 × 10 ⁴	A ² s
V _{isol}	Isolation voltage	Terminals to base plate, RMS, f=60 Hz, AC 1 min	4000	V
T _{vjmax}	Maximum junction temperature	Instantaneous event (overload)	175	°C
T _{Cmax}	Maximum case temperature	(Note2)	125	
T _{vjop}	Operating junction temperature	Continuous operation (under switching)	-40 ~ +150	°C
T _{stg}	Storage temperature	-	-40 ~ +125	

ELECTRICAL CHARACTERISTICS (T_{vj}=25 °C, unless otherwise specified)

Symbol	Item	Conditions	Limits			Unit	
			Min.	Typ.	Max.		
I _{RRM}	Reverse current	V _R =V _{RRM} , T _{vj} =150 °C	-	-	50	mA	
V _F (Terminal)	Forward voltage	I _F =800 A, t _w ≤1 ms, Refer to the figure of test circuit	T _{vj} =25 °C	-	2.25	2.75	
			T _{vj} =125 °C	-	2.35	-	
			T _{vj} =150 °C	-	2.30	-	
V _F (Chip)		I _F =800 A, t _w ≤1 ms		-	2.00	2.50	V
t _{rr}	Reverse recovery time	V _{CC} =1000 V, I _F =800 A, -dI/dt=4000 kA/μs, Inductive load		-	-	500	ns
Q _{rr}	Reverse recovery charge			-	160	-	μC
E _{rr}	Reverse recovery energy per pulse			-	104	-	mJ

THERMAL RESISTANCE CHARACTERISTICS

Symbol	Item	Conditions	Limits			Unit
			Min.	Typ.	Max.	
R _{th(j-c)}	Thermal resistance	Junction to case (Note2)	-	-	20	K/kW
R _{th(c-s)}	Contact thermal resistance	Case to heat sink, Thermal grease applied (Note2, 4)	-	13.3	-	K/kW

MECHANICAL CHARACTERISTICS

Symbol	Item	Conditions	Limits			Unit
			Min.	Typ.	Max.	
M _t	Mounting torque	Main terminals M 6 screw	3.5	4.0	4.5	N·m
M _s	Mounting torque	Mounting to heat sink M 6 screw	3.5	4.0	4.5	N·m
d _s	Creepage distance	Terminal to terminal	-	-	-	mm
		Terminal to base plate	-	-	-	
d _a	Clearance	Terminal to terminal	-	-	-	mm
		Terminal to base plate	-	-	-	
e _c	Flatness of base plate	On the centerline X, Y (Note5)	0	-	+200	μm
m	mass	-	-	260	-	g

RM800DY-34S**HIGH POWER SWITCHING USE****INSULATED TYPE**

*: This product is compliant with the Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment (RoHS) directive 2011/65/EU.

Note1. Junction temperature (T_{vj}) should not exceed $T_{vj\max}$ rating.

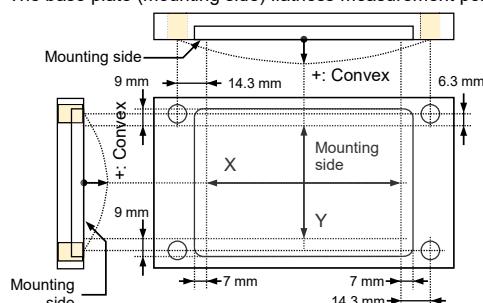
2. Case temperature (T_c) and heat sink temperature (T_s) are defined on the each surface (mounting side) of base plate and heat sink just under the chips.

Refer to the figure of chip location.

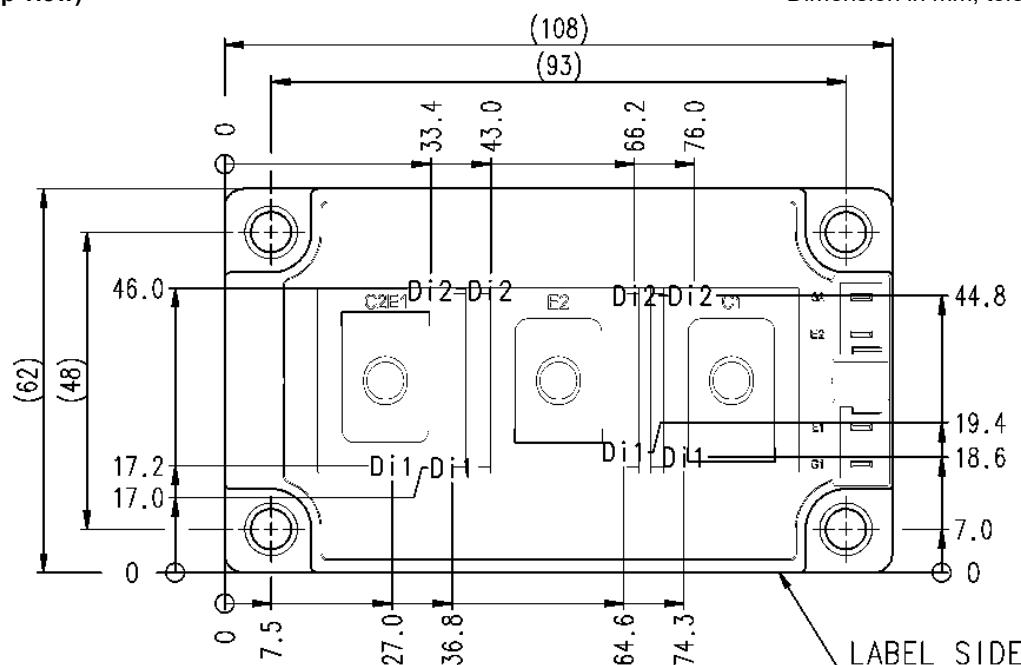
3. Pulse width and repetition rate should be such as to cause negligible temperature rise. Refer to the figure of test circuit.

4. Typical value is measured by using thermally conductive grease of $\lambda=3.0\text{ W}/(\text{m}\cdot\text{K})/D_{(C-S)}=50\text{ }\mu\text{m}$.

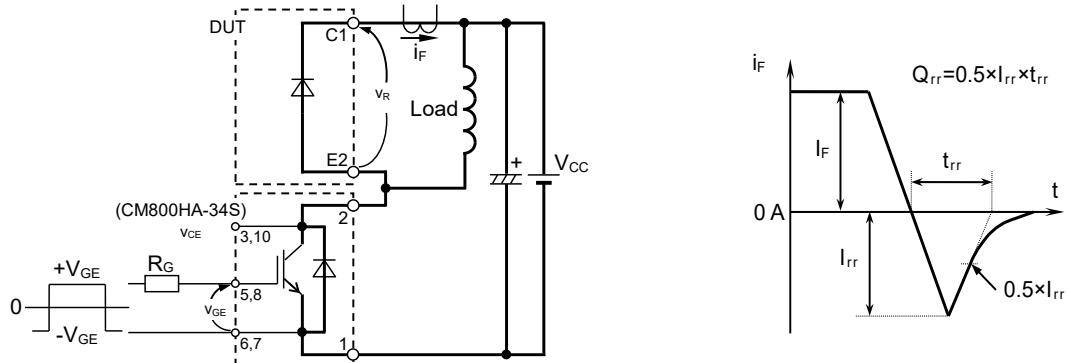
5. The base plate (mounting side) flatness measurement points (X, Y) are shown in the following figure.

**CHIP LOCATION (Top view)**

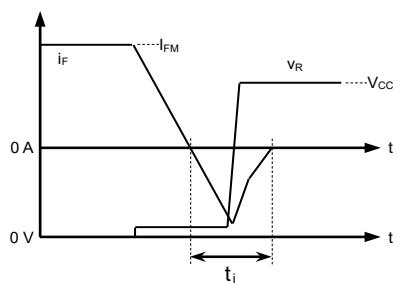
Dimension in mm, tolerance: $\pm 1\text{ mm}$



TEST CIRCUIT AND WAVEFORMS

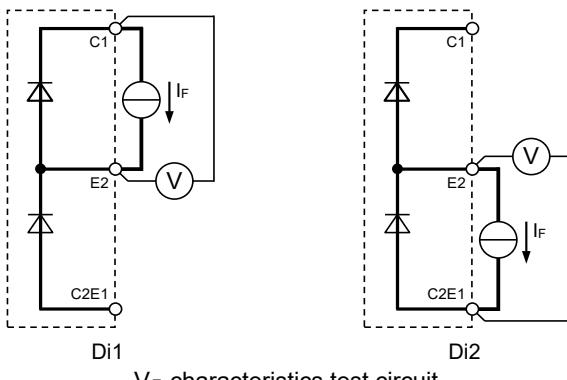


t_{rr} , Q_{rr} characteristics test circuit and waveforms



Reverse recovery energy test waveforms (Integral time instruction drawing)

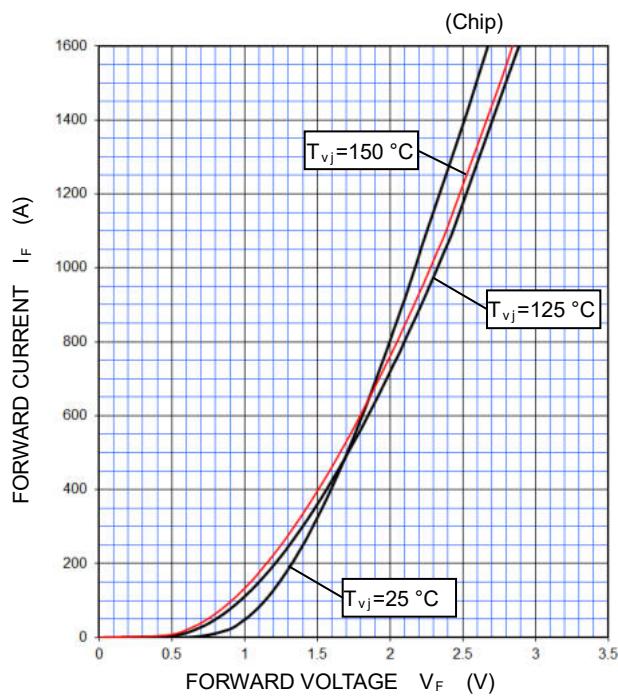
TEST CIRCUIT



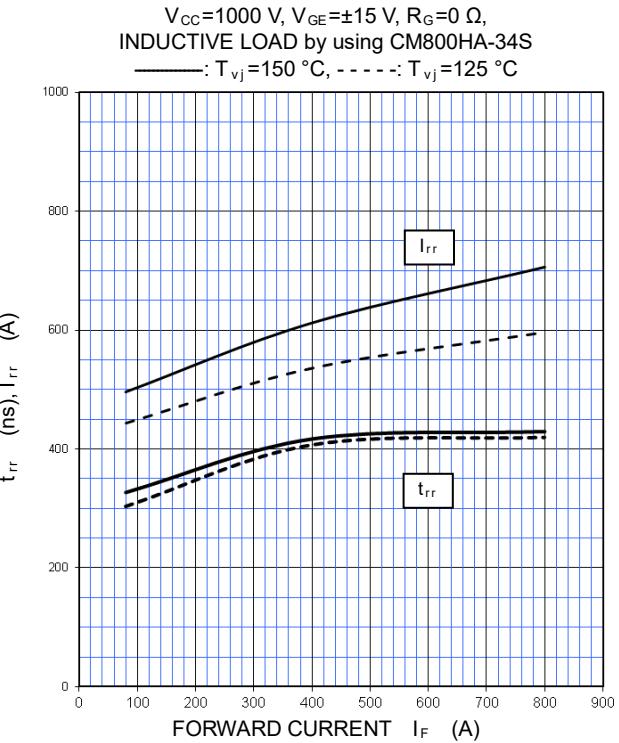
V_F characteristics test circuit

PERFORMANCE CURVES

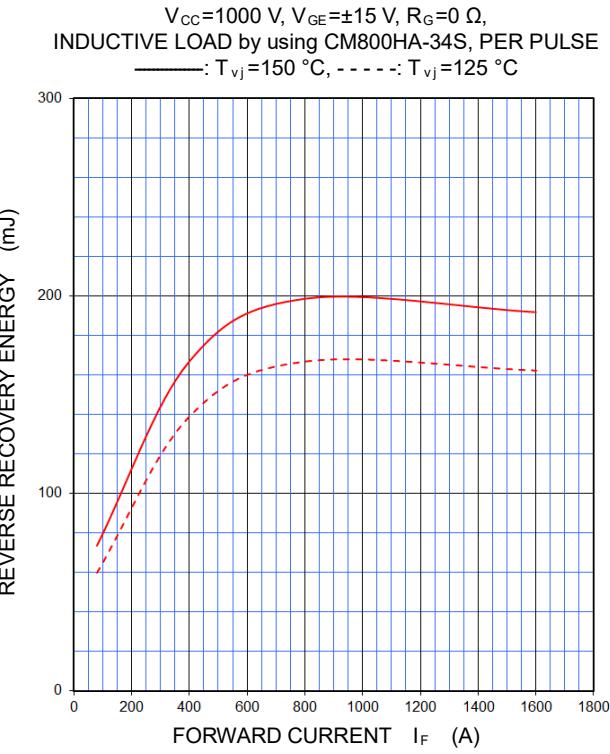
**FORWARD CHARACTERISTICS
(TYPICAL)**



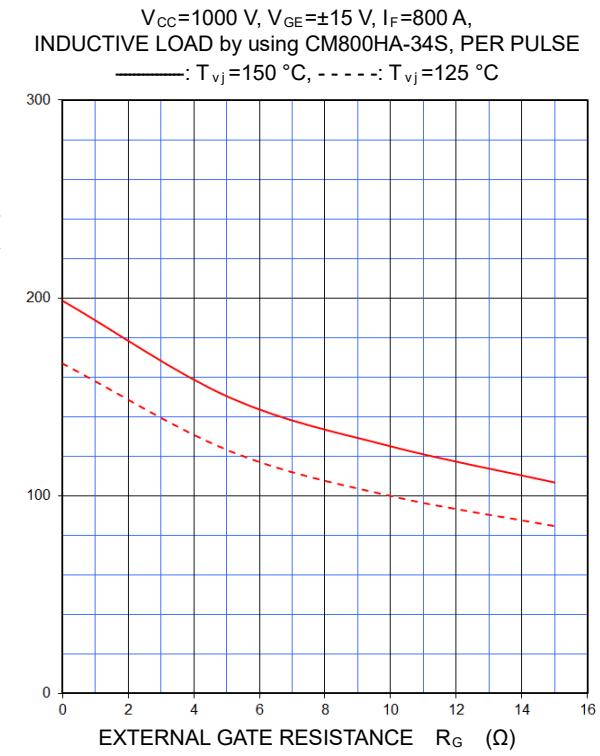
**REVERSE RECOVERY CHARACTERISTICS
(TYPICAL)**

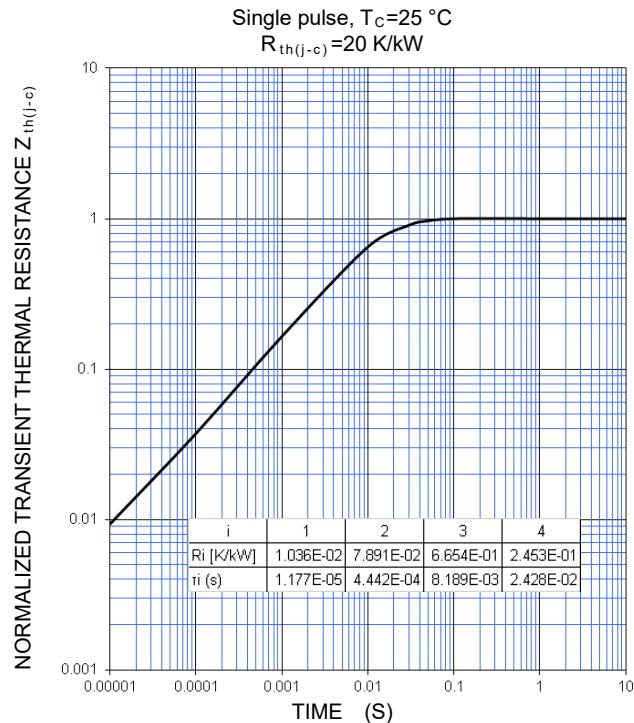


**HALF-BRIDGE SWITCHING CHARACTERISTICS
(TYPICAL)**



**HALF-BRIDGE SWITCHING CHARACTERISTICS
(TYPICAL)**



PERFORMANCE CURVES**TRANSIENT THERMAL IMPEDANCE CHARACTERISTICS
(MAXIMUM)**

Note: The characteristics curves are presented for reference only and not guaranteed by production test, unless otherwise noted.

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