

MDM900E17D

FEATURES

- * Low noise due to ultra soft fast recovery diode.
- * High reliability, high durability diodes.
- * Isolated heat sink (terminal to base).

ABSOLUTE MAXIMUM RATINGS (T_C=25°C)

Item	Symbol	Unit	MDM900E17D	
Repetitive Peak Reverse Voltage	V _{RRM}	V	1,700	
Forward Current	DC	A	900	
	1ms		1,800	
Junction Temperature	T _{vj op}	°C	-40 ~ +125	
Storage Temperature	T _{stg}	°C	-40 ~ +125	
Isolation Test Voltage	Terminals-base	V _{ISO}	V _{RMS}	4,000(AC 1 minute)
	Terminal 1-Terminal 2			4,000(AC 1 minute)
Screw Torque	Terminals (M8)	-	N·m	15 (1)
	Mounting (M6)			6 (2)

Notes: (1) Recommended Value 15⁺⁰₋₃N·m

(2) Recommended Value 5.5±0.5N·m

ELECTRICAL CHARACTERISTICS

Item	Symbol	Unit	Min.	Typ.	Max.	Test Conditions
Repetitive Reverse Current	I _{RRM}	mA	-	1.0	10.0	V _{AK} =1,700V, V _{GE} =0V, T _{vj} =125°C
Forward Voltage Drop	V _F	V	1.5	2.0	2.5	I _F =1200A, T _{vj} =125°C
Reverse Recovery Time	t _{rr}	μs	-	0.7	1.4	V _{CC} =900V, I _F =900A, L _s =180nH
Reverse Recovery Loss	E _{rr(10%)}	J/P	-	0.4	0.7	R _G =1.5Ω, T _{vj} =125°C (3)

Notes: (3) Counter arm: MBN1200E17D V_{GE}= ±15V

R_G are the test condition's value to define the switching characteristics not recommended value.

Please, determine the suitable R_G value after the measurement of switching waveforms (overshoot voltage, etc.) with appliance mounted.

PACKAGE CHARACTERISTICS

Item	Symbol	Unit	Min.	Typ.	Max.	Test Conditions
Terminal Resistance	R _{CE}	mΩ	-	0.4	-	T _c =25°C, per arm
Stray inductance module	L _{SCE}	nH	-	35	-	per arm
Thermal Impedance	R _{th(f-c)}	K/W	-	-	0.045	Junction to case (par arm)
Contact Thermal Impedance	R _{th(c-f)}	K/W	-	0.008	-	Case to fin (par module)

* Please contact our representatives at order.

* For improvement, specifications are subject to change without notice.

* For actual application, please confirm this spec sheet is the newest revision.

MDM900E17D

DEFINITION OF TEST CIRCUIT

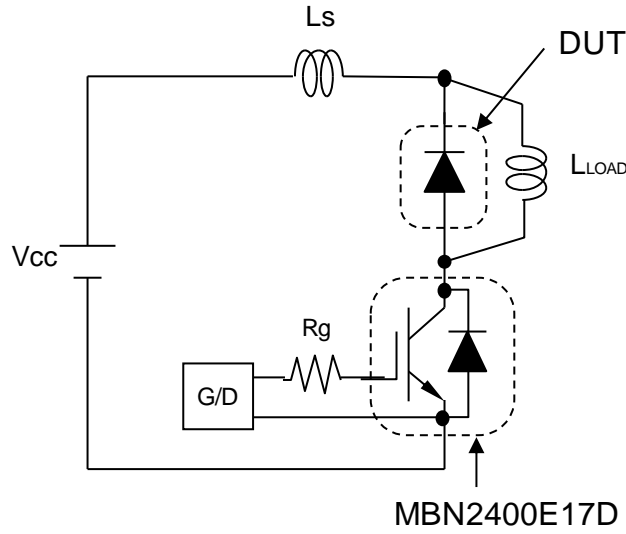


Fig.1 Switching test circuit

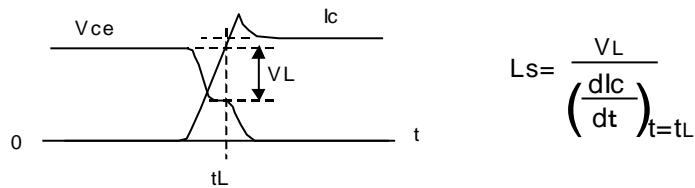


Fig.2 Definition of stray inductance

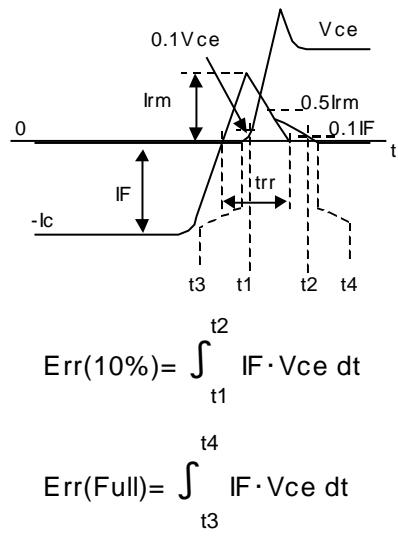
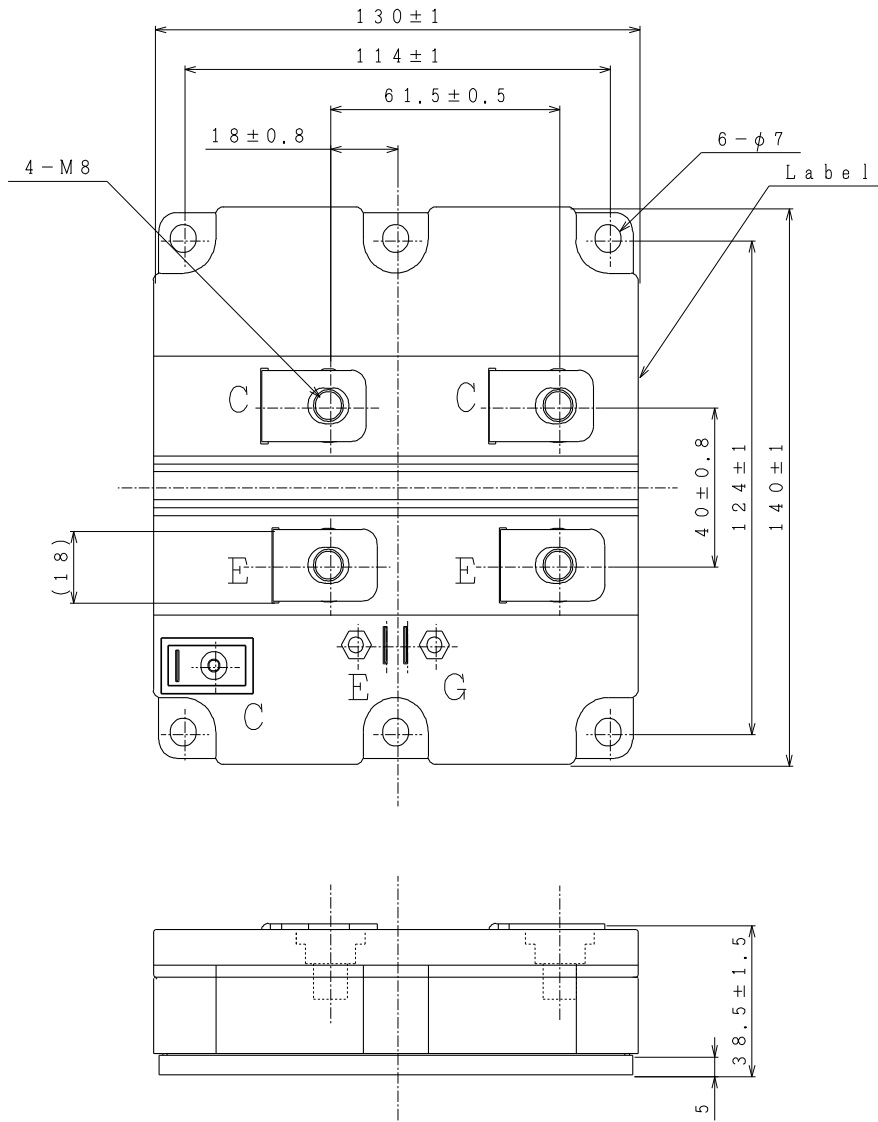


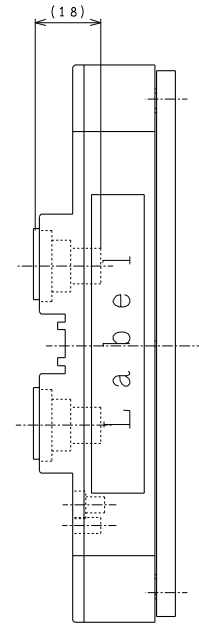
Fig.3 Definition of switching loss

MDM900E17D

OUTLINE DRAWING

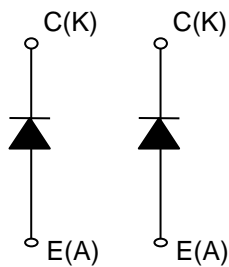


Unit in mm

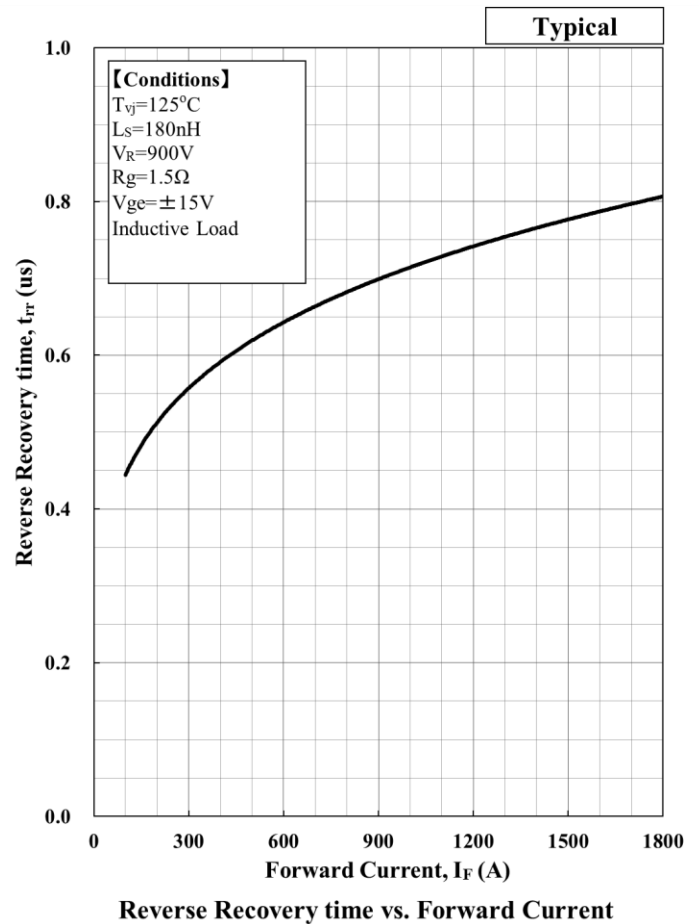
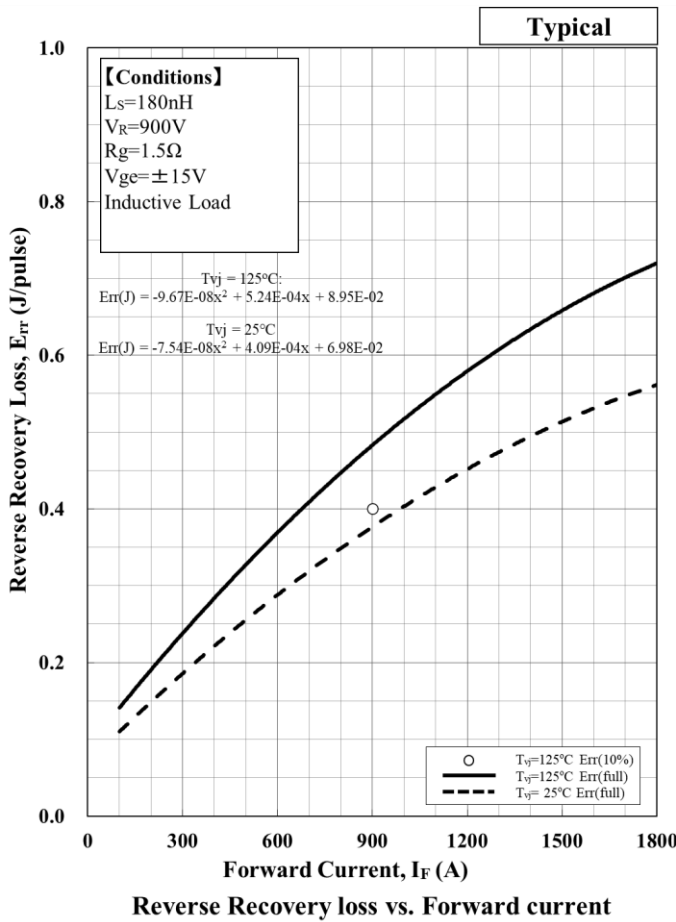
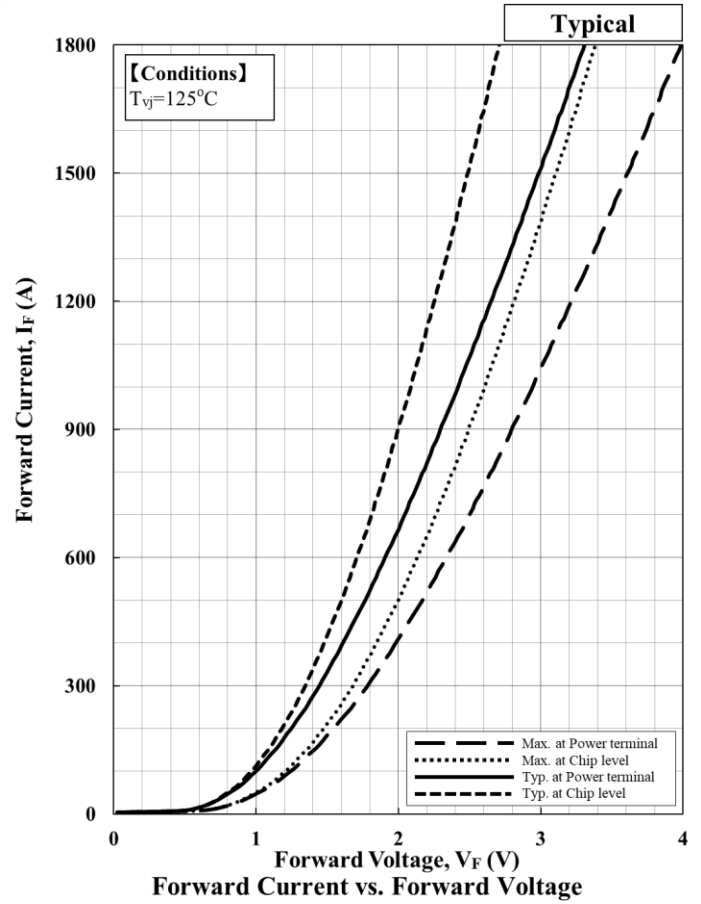
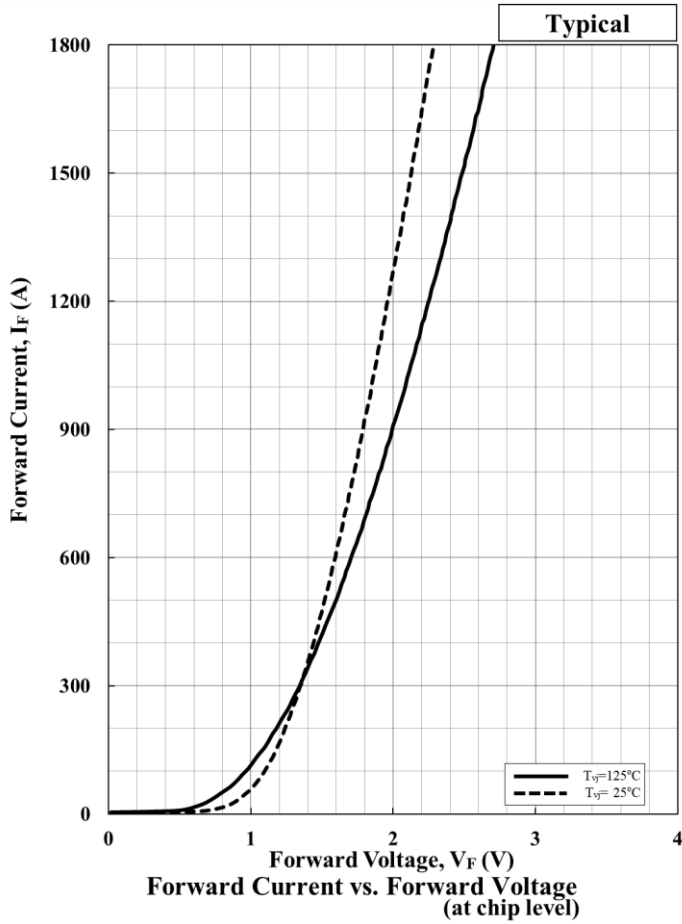


Weight: 900g

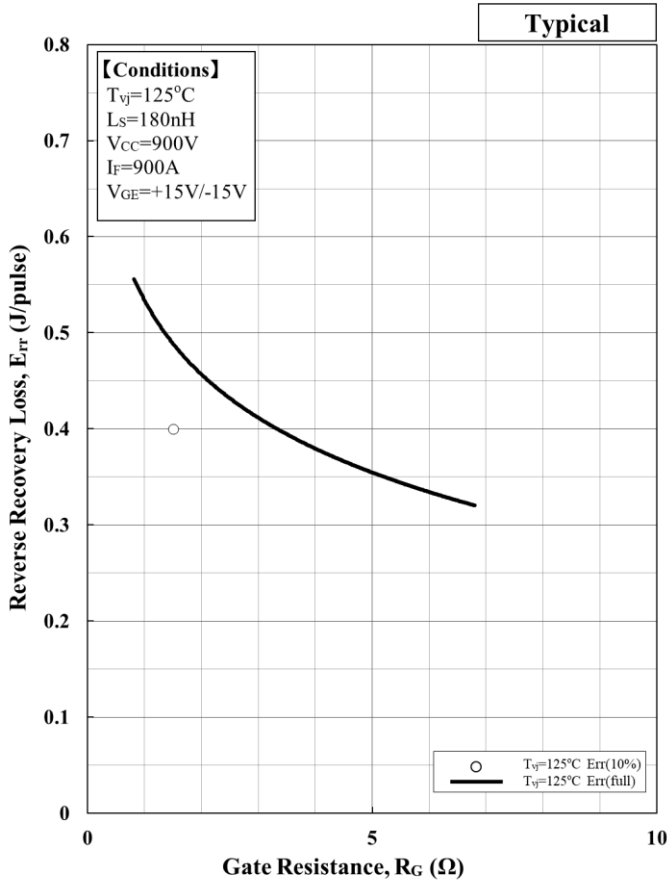
CIRCUIT DIAGRAM



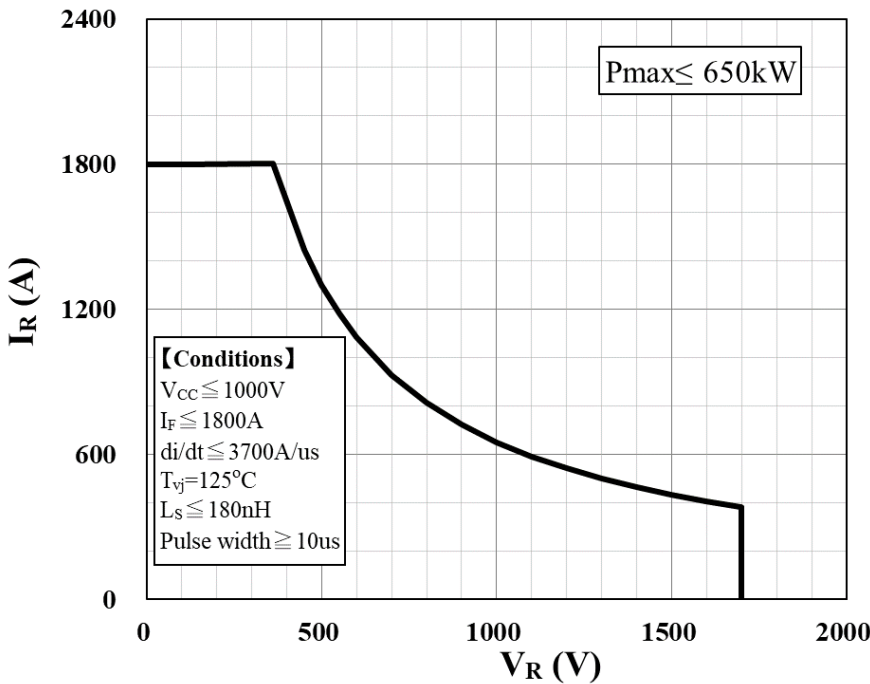
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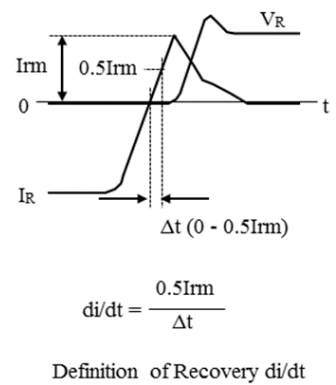
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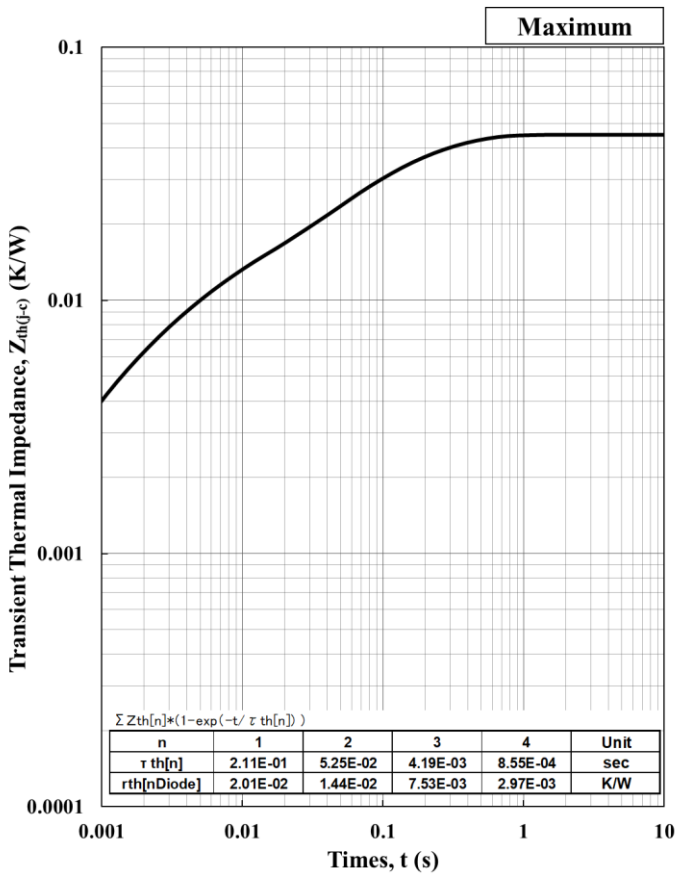
Reverse Recovery loss vs. Gate Resistance



(Defined at power terminals)
 Reverse Recovery Safe Operation Area (RRSOA)



MDM900E17D



Transient Thermal Impedance Curve

Material declaration

Please note the following materials are contained in the product, in order to keep characteristic and reliability level.

Material	Contained part
Lead (Pb) and its compounds	Solder

MDM900E17D

HITACHI POWER SEMICONDUCTORS

Notices

1. Since mishandling of semiconductor devices may cause malfunctions, please be sure to read "Precautions for Safe Use and Notices" in the individual brochure before use.
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5. A semi-processed article is done now using solder which contains lead inside the semiconductor devices. There is possibility of the regulation substance depend on the applied models, so please check before using.
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8. For handling other than described in this manual, follow the handling instructions (IGBT-HI-00002).

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MDM900E17D

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