MDM800E33D

FEATURES

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

ABSOLUTE MAXIMUM RATINGS (TC=25°C)

Item		Symbol	Unit	MDM800E33D
Repetitive Peak Reverse Voltage		V_{RRM}	V	3,300
Forward Current	DC	I_F	A	800
	1ms	I_{FM}		1,600
Junction Temperature		Tj	°C	-40 ~ +125
Storage Temperature		Tstg	°C	-40 ~ +125
Isolation Test Voltage		V_{ISO}	V_{RMS}	6,000(AC 1 minute)
Screw Torque	Terminals (M8)	-	N·m	15 (1)
	Mounting (M6)	-		6 (2)

Notes: (1) Recommended Value 15^{+0}_{-3}N·m (2) Recommended Value 5.5±0.5N·m

ELECTRICAL CHARECTERISTICS

Item	Symbol	Unit	Min.	Typ.	Max.	Test Conditions
Repetitive Reverse Current	I_{RRM}	mA	-	2.0	20.0	VAK=3,300V, Tj=125°C
Forward Voltage Drop	V_F	V	2.0	2.5	3.0	IF=800A, Tj=125°C at chip level
Reverse Recovery Time	trr	μs	0.2	0.6	1.1	V_{CC}=1,650V, IF=800A, L=120nH
Reverse Recovery Loss	$E_{rr(10\%)}$	J/P	-	0.9	1.3	Tj=125°C, Rg=4.7Ω (3)

Notes:(3) Counter arm: MBN800E33D VGE=±15V
R_G value is 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 CHARECTERISTICS

Item	Symbol	Unit	Min.	Typ.	Max.	Test Conditions
Terminal Resistance	RCE	mΩ	-	0.4	-	
Terminal Stray Inductance	LsCE	nH	-	35	-	
Thermal Impedance	Rth(j-c)	K/W	-	-	0.026	Junction to case
Comparative tracking index	CTI		-	600	-	
Contact Thermal Impedance	Rth(c-f)	K/W	-	0.008	-	Case to fin per 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.

MDM800E33D

DEFINITION OF TEST CIRCUIT

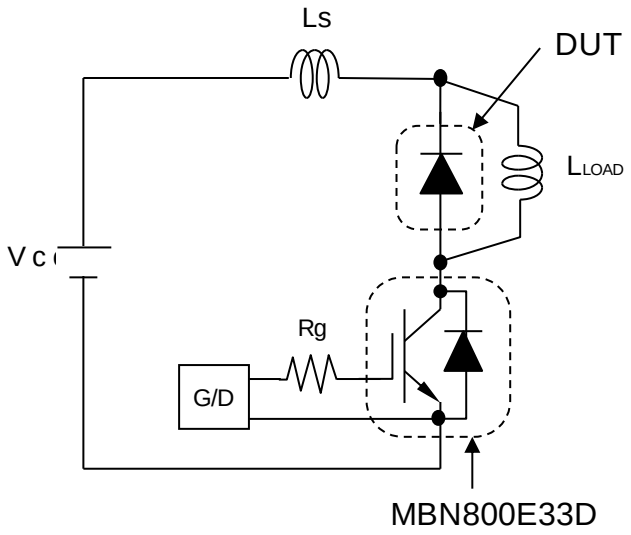
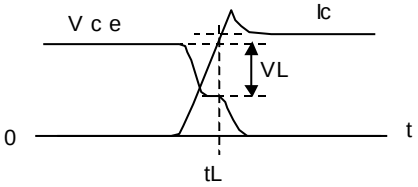
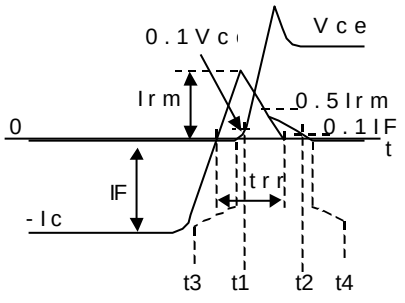


Fig.1 Switching test circuit



$$Ls = \frac{VL}{\left(\frac{dIc}{dt}\right)_{t=tL}}$$

Fig.2 Definition of stray inductance



$$Err(10\%) = \int_{t1}^{t2} IF \cdot Vce\, dt$$

$$Err(Full) = \int_{t3}^{t4} IF \cdot Vce\, dt$$

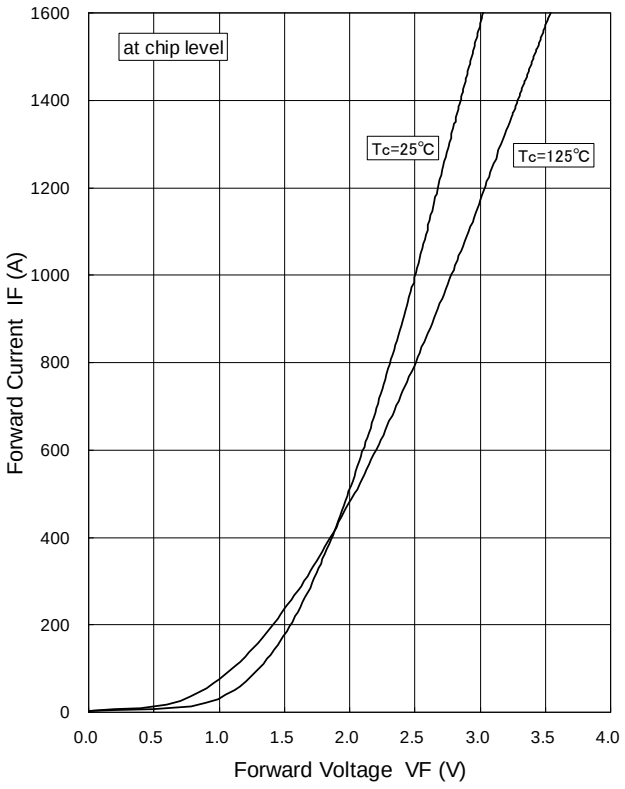
Fig.3 Definition of switching loss

MDM800E33D

CHARACTERISTICS CURVE

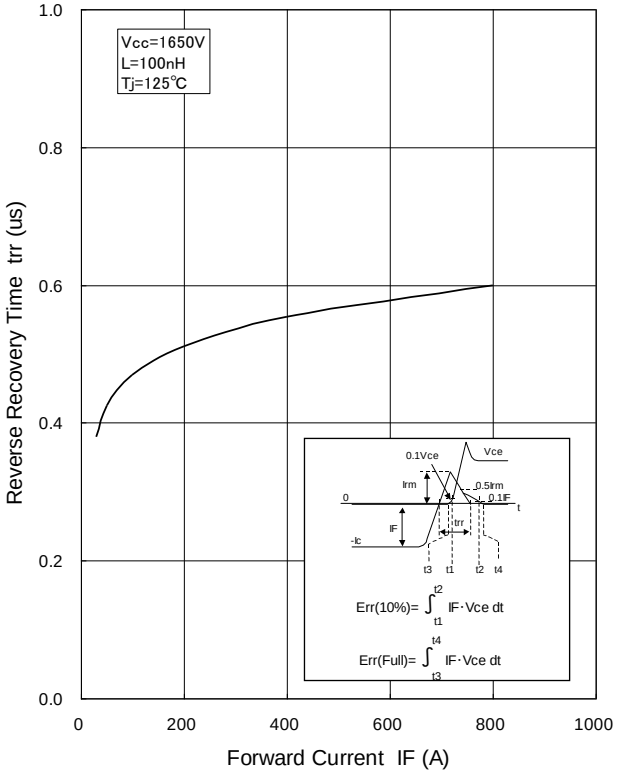
STATIC CHARACTERISTICS

TYPICAL

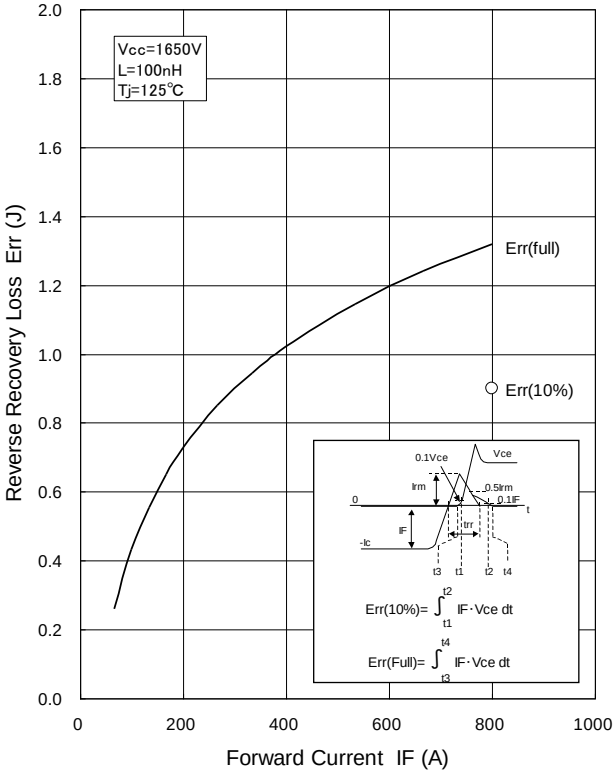


DEPENDENCE OF CURRENT

TYPICAL



TYPICAL



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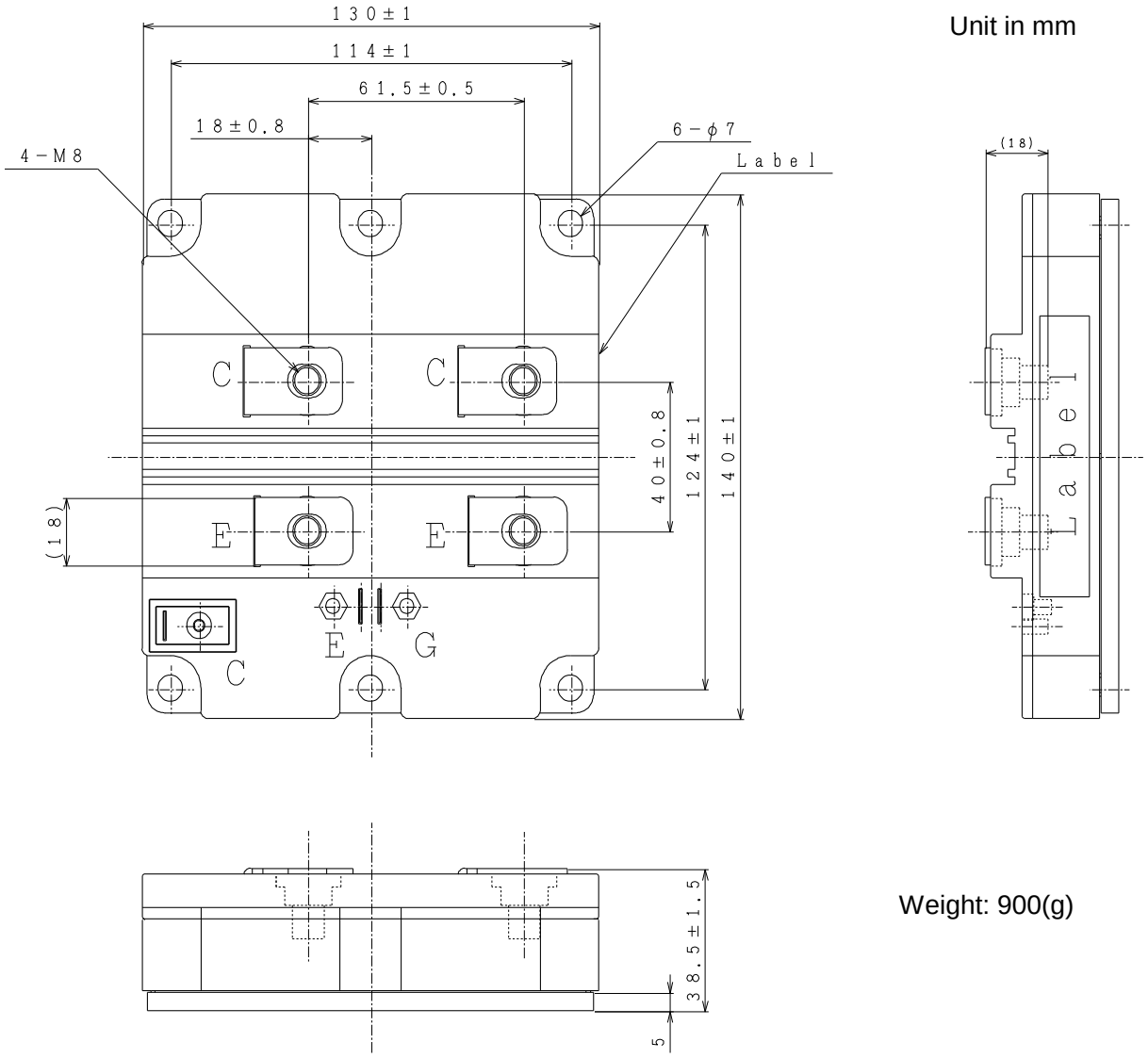
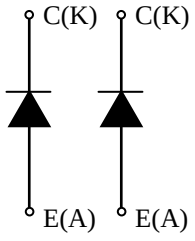
MDM800E33D

PACKAGE OUTLINE DRAWING

Unit in mm



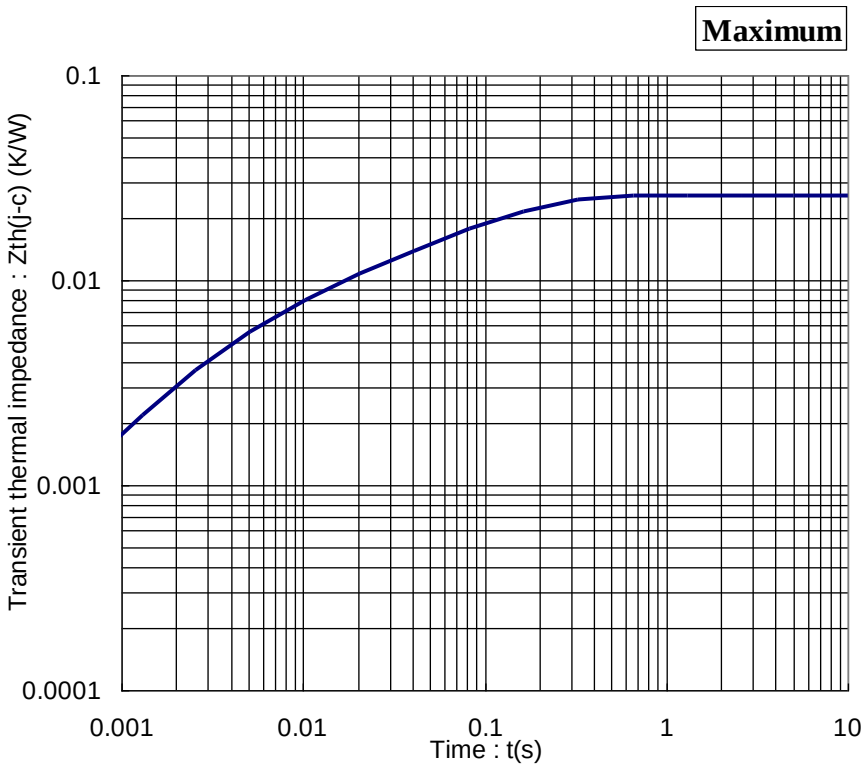
Weight: 900(g)



Circuit diagram

MDM800E33D

TRANSIENT THERMAL IMPEDANCE



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

MDM800E33D

HITACHI POWER SEMICONDUCTORS

Notices

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