

MDM1200E33D

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	MDM1200E33D
Repetitive Peak Reverse Voltage	V_{RRM}	V	3,300
Forward Current	DC	I_F	1,200
	1ms	I_{FM}	2,400
Junction Temperature	T_J	°C	-40 ~ +125
Storage Temperature	T_{stg}	°C	-40 ~ +125 (1)
Isolation Test Voltage	Terminals-base	V_{ISO}	6,000(AC 1 minute)
	Terminal 1-Terminal 2	$V_{ISO\ T-T}$	6,000(AC 1 minute)
Screw Torque	Terminals (M8)	-	15 (2)
	Mounting (M6)	-	6 (3)

Notes: (1) Terminal temperature shall not exceed the specified temperature in any operation.
 (2) Recommended Value $15^{+0}/_{-3}$ N·m (3) Recommended Value 5.5 ± 0.5 N·m

ELECTRICAL CHARACTERISTICS

Item	Symbol	Unit	Min.	Typ.	Max.	Test Conditions
Repetitive Reverse Current	I_{RRM}	mA	-	3.0	30.0	$V_{AK}=3,300V, T_J=125^\circ C$
Forward Voltage Drop	V_F	V	2.3	2.8	3.3	$I_F=1,200A, T_J=125^\circ C$
Reverse Recovery Time	t_{rr}	μs	-	0.6	1.1	$V_{CC}=1,650V, I_F=1,200A, L=100nH$
Reverse Recovery Loss	$E_{rr(10\%)}$	J/P	-	1.2	1.9	$T_J=125^\circ C, R_g=3.3\Omega$ (4)

PACKAGE CHARACTERISTICS

Item	Symbol	Unit	Min.	Typ.	Max.	Test Conditions
Terminal Resistance	RCE	mΩ	-	0.3	-	
Terminal Stray Inductance	LsCE	nH	-	35	-	
Thermal Impedance	$R_{th(j-c)}$	K/W	-	-	0.017	Junction to case
Comparative tracking index	CTI	-	-	600	-	
Contact Thermal Impedance	$R_{th(c-f)}$	K/W	-	0.008	-	Case to fin per module
Base Plate material						Al-SiC
Insulation substrate material						AlN

Notes:(4) Counter arm; MDM1200E33D VGE= \pm 15V
 R_G value is the test condition's value for evaluation of the switching times, not recommended value.
 Please, determine the suitable R_G value after the measurement of switching waveforms (overshoot voltage, etc.) with appliance mounted.

- * 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.

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DEFINITION OF TEST CIRCUIT

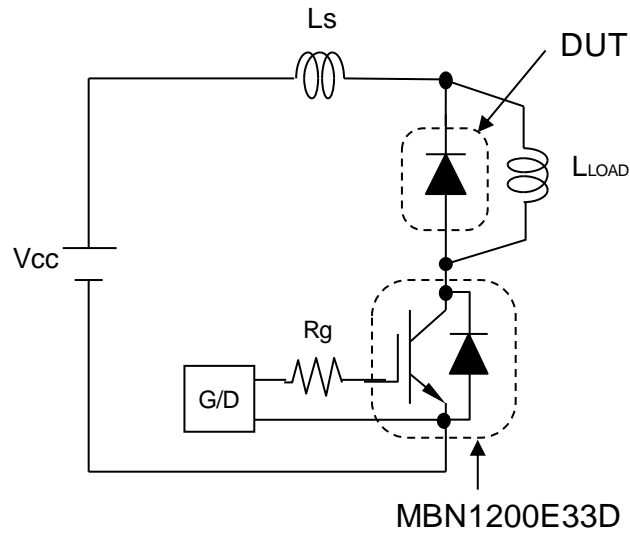


Fig.1 Switching test circuit

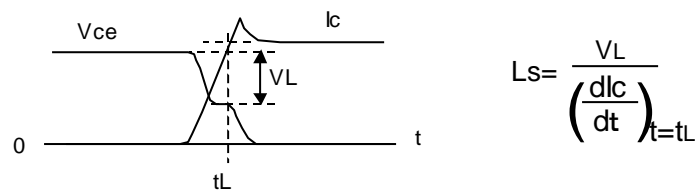


Fig.2 Definition of stray inductance

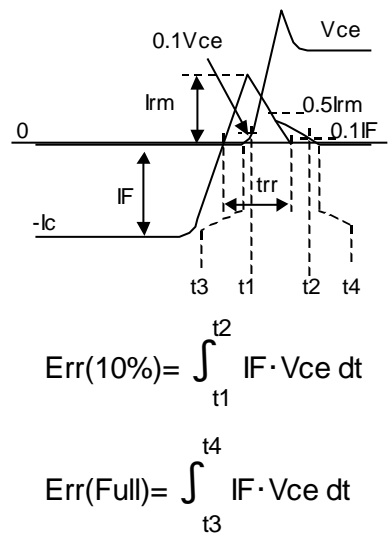
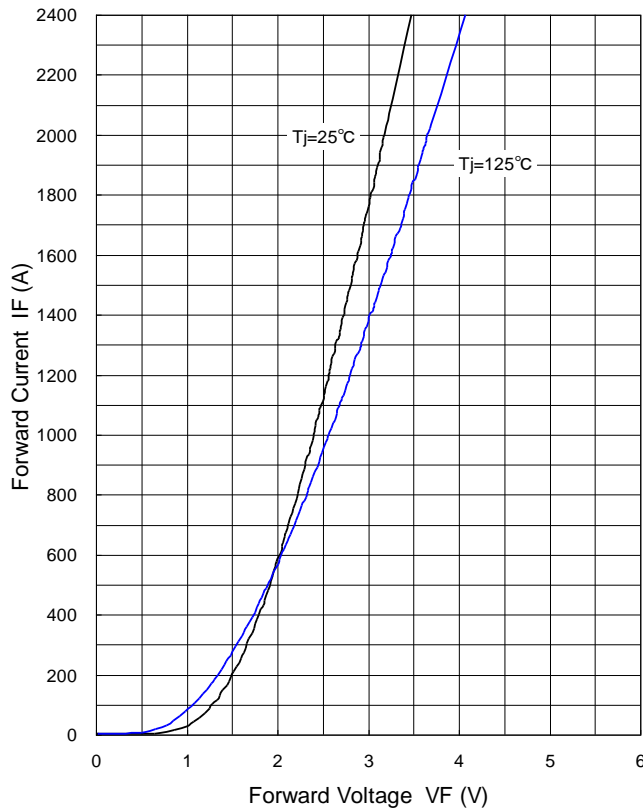


Fig.3 Definition of switching loss

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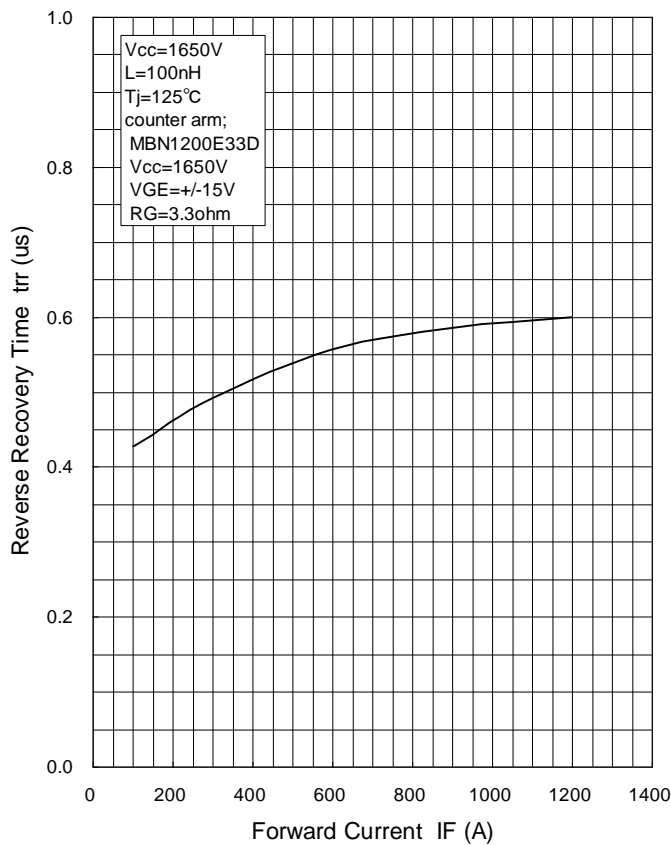
STATIC CHARACTERISTICS

TYPICAL

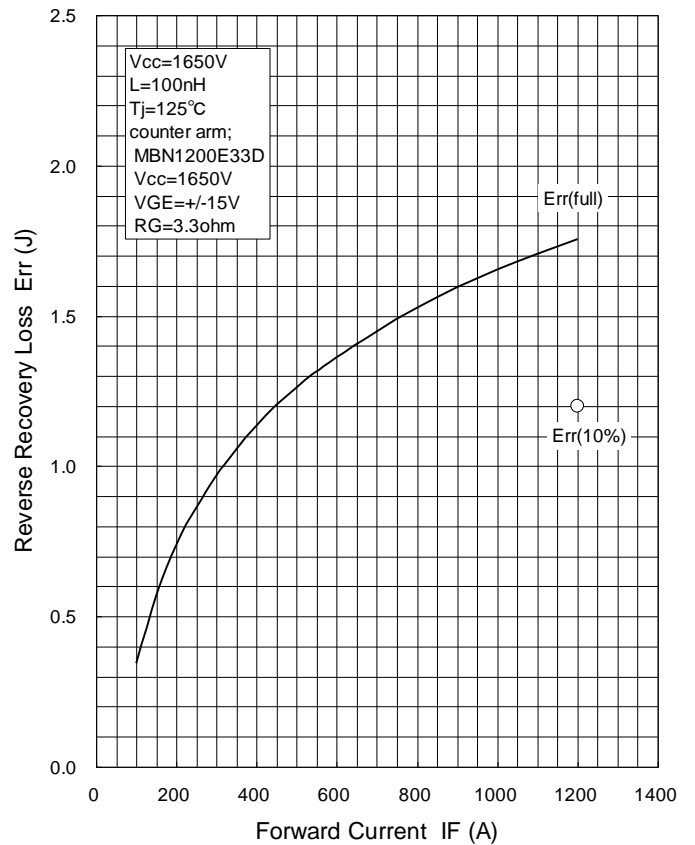


DYNAMIC CHARACTERISTICS

TYPICAL

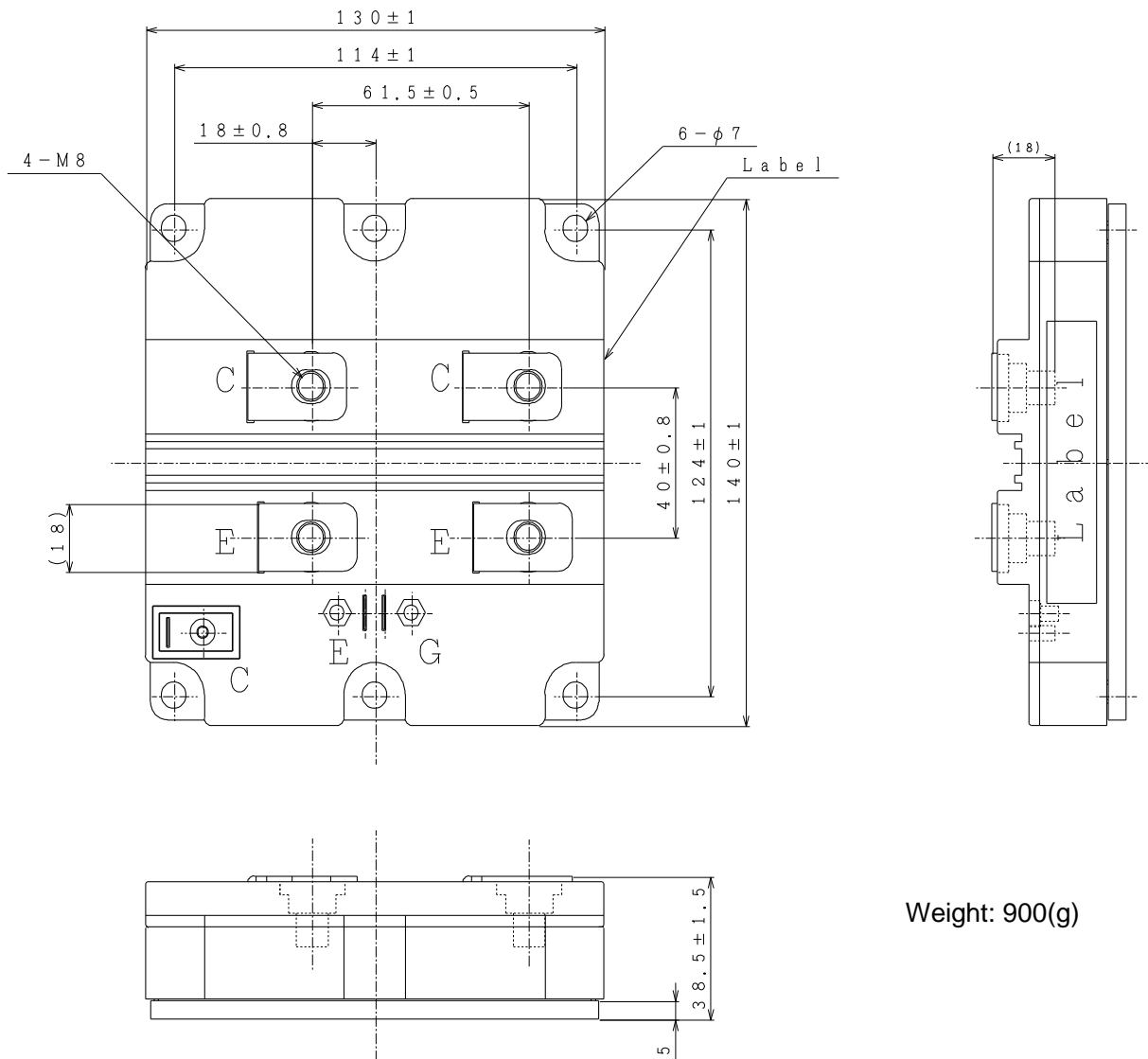


TYPICAL

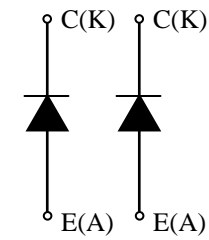


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PACKAGE OUTLINE DRAWING



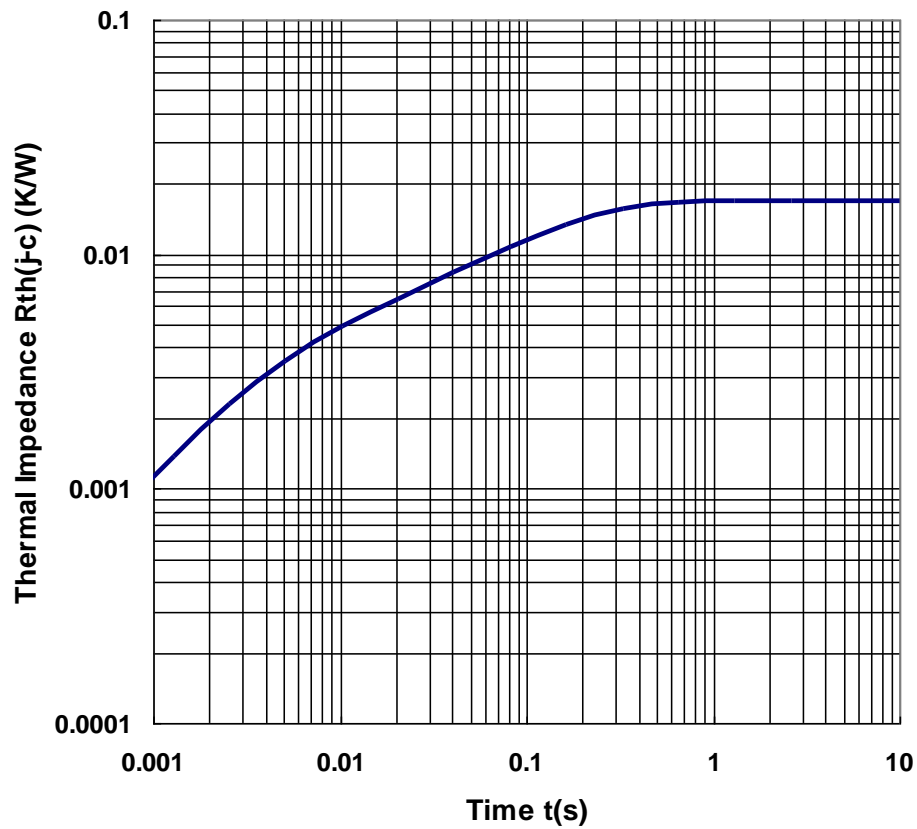
Weight: 900(g)



Circuit diagram

MDM1200E33D

TRANSIENT THERMAL IMPEDANCE



Transient Thermal Impedance Curve (Maximum Value)

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

MDM1200E33D

HITACHI POWER SEMICONDUCTORS

Notices

1. The information given herein, including the specifications and dimensions, is subject to change without prior notice to improve product characteristics. Before ordering, purchasers are advised to contact Hitachi sales department for the latest version of this data sheets.
2. Please be sure to read "Precautions for Safe Use and Notices" in the individual brochure before use.
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