

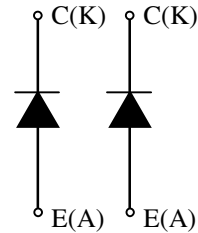
# MDM600H65E

PRELIMINARY SPECIFICATION

## FEATURES

- \* Low noise recovery: Ultra soft fast recovery diode.
- \* High reverse recovery capability:  
Super HiRC Structure.
- \* High reliability, high durability diodes.
- \* Isolated heat sink (terminal to base).

## CIRCUIT DIAGRAM



## ABSOLUTE MAXIMUM RATINGS (TC=25°C)

Item	Symbol	Unit	MDM600H65E
Repetitive Peak Reverse Voltage	$V_{RRM}$	V	6,500
Forward Current	DC	$I_F$	600
	1ms	$I_{FM}$	1200
Junction Temperature	$T_j$	°C	-40 ~ +125
Storage Temperature	$T_{stg}$	°C	-40 ~ +125
Isolation Test Voltage	Terminals-base	$V_{ISO}$	10,200 (AC 1 minute)
	Terminal 1-Terminal 2	$V_{ISO\ T-T}$	10,200 (AC 1 minute)
Screw Torque	Terminals (M8)	-	10 (1)
	Mounting (M6)	-	6 (2)

Notes: (1) Recommended Value  $9 \pm 1 \text{ N}\cdot\text{m}$ (2) Recommended Value  $5.5 \pm 0.5 \text{ N}\cdot\text{m}$ 

## ELECTRICAL CHARACTERISTICS

Item	Symbol	Unit	Min.	Typ.	Max.	Test Conditions
Repetitive Reverse Current	$I_{RRM}$	mA	-	10	tbd	$V_{AK}=6,500\text{V}$ , $T_j=125^\circ\text{C}$
Forward Voltage Drop	$V_F$	V	4.2	4.5	4.7	$I_F=600\text{A}$ , $T_j=125^\circ\text{C}$
Reverse Recovery Time	trr	$\mu\text{s}$	-	0.7	tbd	$V_{CC}=3,600\text{V}$ , $I_c=600\text{A}$ , $L=220\text{nH}$
Reverse Recovery Loss	$E_{rr(10\%)}$	J/P	-	1.9	tbd	$T_j=125^\circ\text{C}$ $R_g=10\ \Omega$ (3)

## PACKAGE CHARACTERISTICS

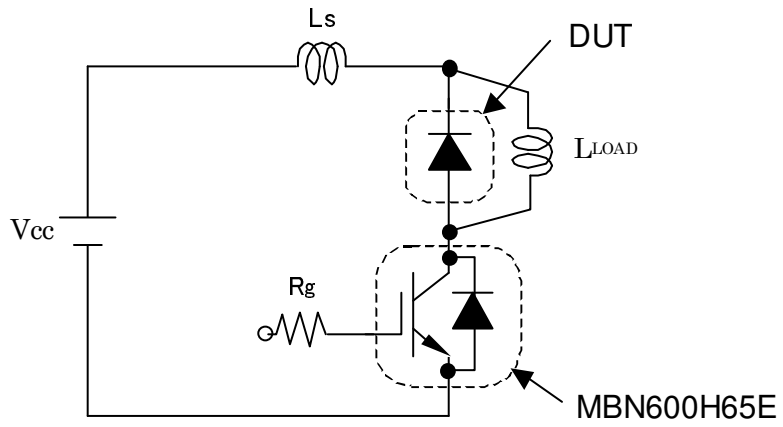
Item	Symbol	Unit	Min.	Typ.	Max.	Test Conditions
Terminal Resistance	$R_{CE}$	m $\Omega$	-	0.3	-	
Terminal Stray Inductance	$L_{sCE}$	nH	-	60	-	
Thermal Impedance	$R_{th(j-c)}$	K/W	-	-	0.018	Junction to case
Comparative tracking index	CTI		-	600	-	
Contact Thermal Impedance	$R_{th(c-f)}$	K/W	-	0.008	-	Case to fin per module

Notes:(3) Counter arm; MBN600H65E  $V_{GE}=\pm 15\text{V}$  $R_G$  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.

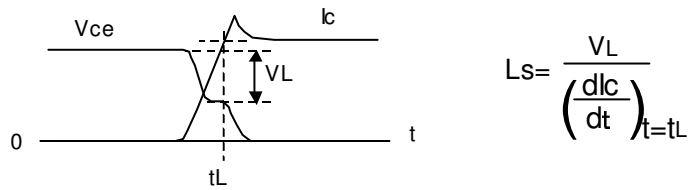
\* Please contact our representatives at order.

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

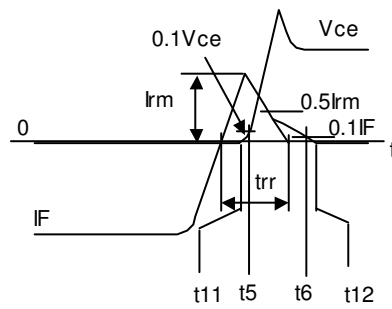
\* For actual application, please confirm this spec sheet is the newest revision.



**Fig.1 Switching test circuit (TBD)**



**Fig.2 Definition of Ls**



$$\text{Err}(10\%) = \int_{t_5}^{t_6} I_F \cdot V_{ce} dt$$

**Fig.3 Definition of switching loss**

# 1. STATIC CHARACTERISTICS

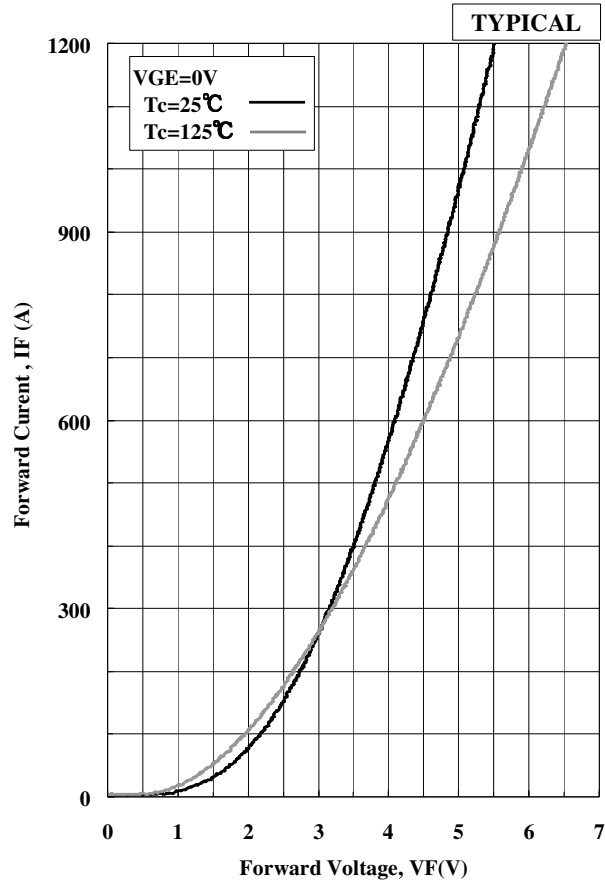


Figure 1 Output characteristics of Diode

# 2. DYNAMIC CHARACTERISTICS

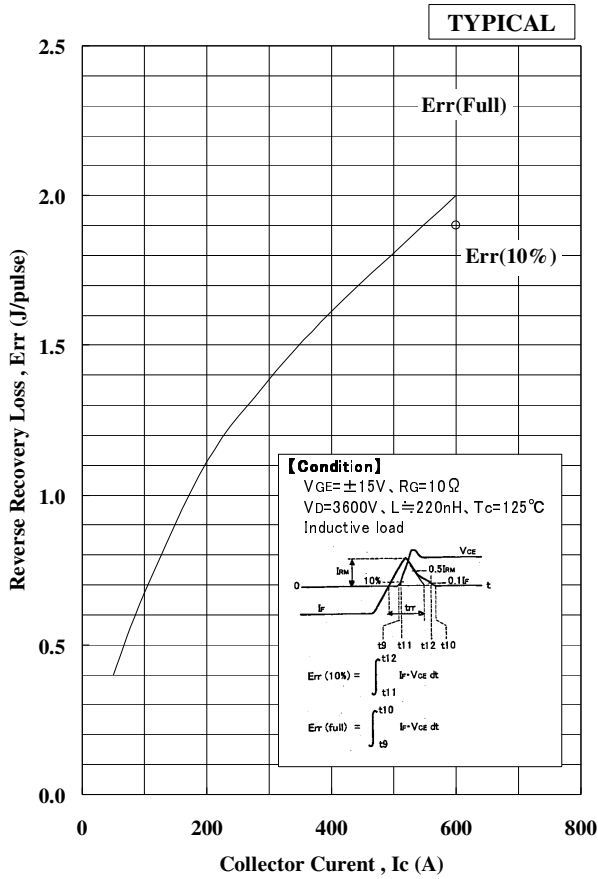


Figure 2 Dependence of Err on Ic

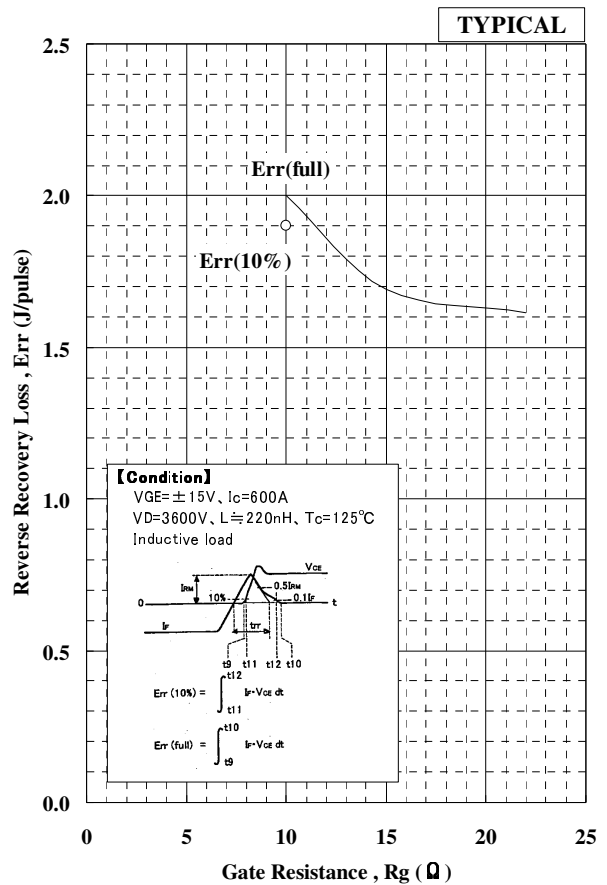
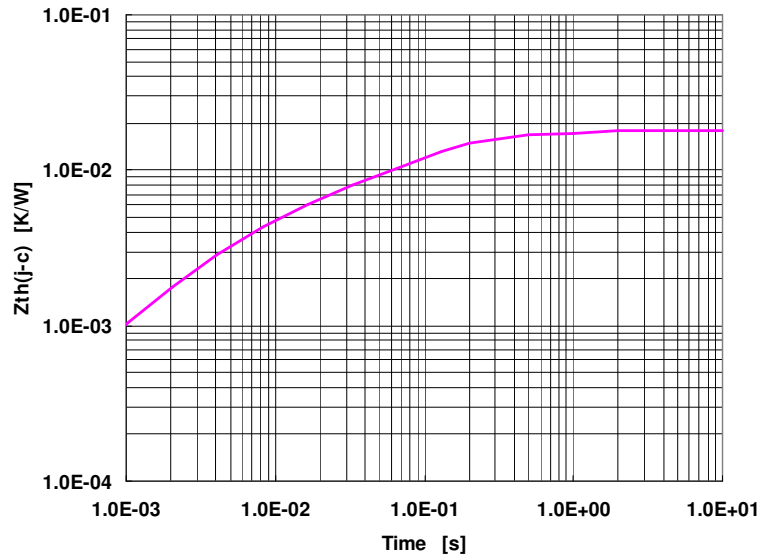


Figure 3 Dependence of Err on Rg

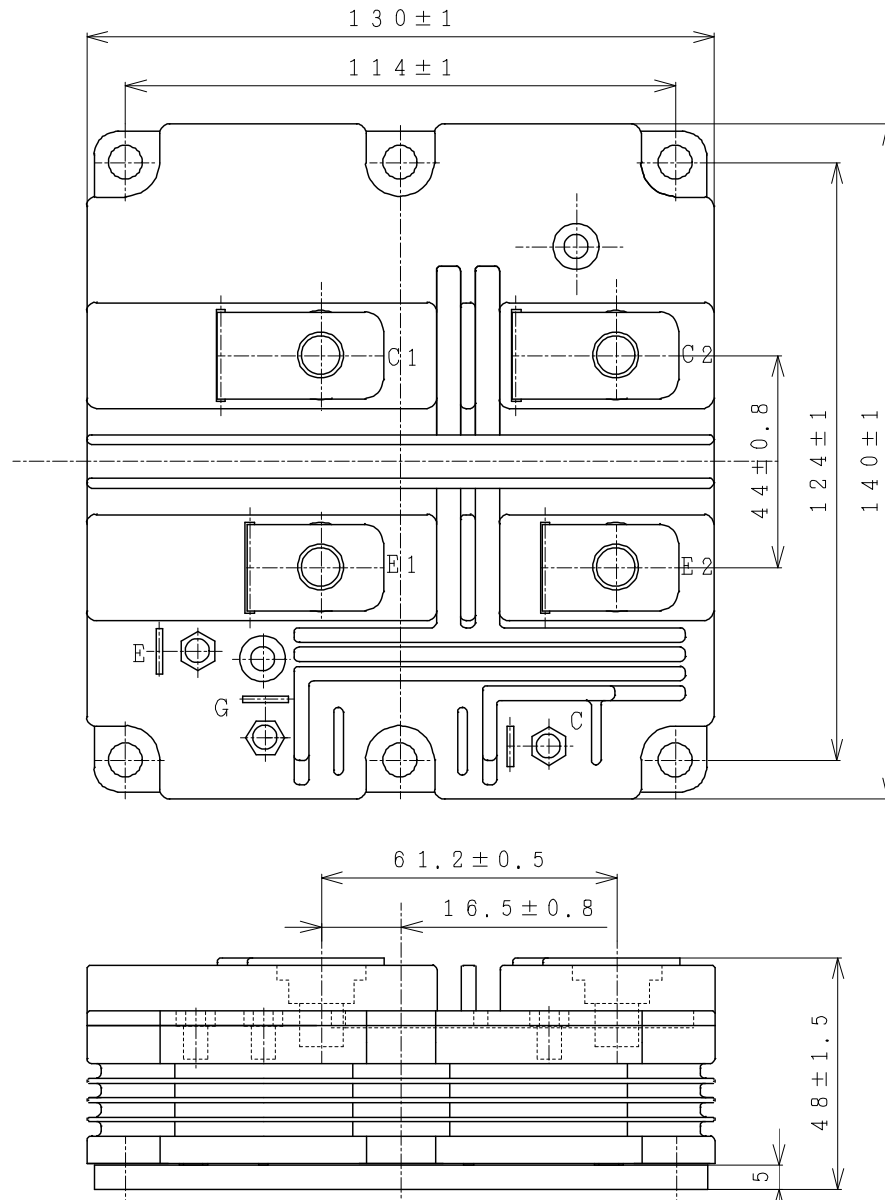
### 3. TRANSIENT THERMAL IMPEDANCE



### 4. OUTLINE DRAWING

Unit in mm

Weight: 1050(g)



**5. The following negative environmental impact material are used in Hitachi.**

Material	Quantity (kg / component)	Comment; motivation for use, recycling method
<b>Lead and its compounds</b>	<b>0.0236</b>	<b>We use solder</b>

# HITACHI POWER SEMICONDUCTORS

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