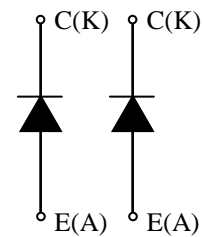


MDM1200FH33F

FEATURES

- * Low Reverse Recovery Loss diode module.
- * 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



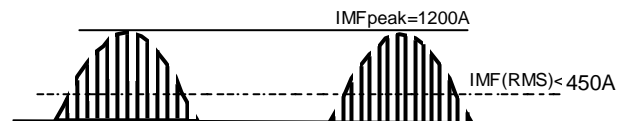
ABSOLUTE MAXIMUM RATINGS (TC=25°C)

Item	Symbol	Unit	MDM1200FH33F
Repetitive Peak Reverse Voltage	V_{RRM}	V	3,300
Forward Current	AC peak	A	1,200
	1ms		2,400
Junction Temperature	T_J	°C	-50 ~ +150
Maximum Junction Temperature	$T_{vj\ max}$	°C	150 (1)
Storage Temperature	T_{stg}	°C	-50 ~ +150 (2)
Isolation Test Voltage	Terminals-base	V_{ISO}	V_{RMS}
			10,200 (AC 1 minute)
Screw Torque	Terminals (M8)	-	10 (3)
	Mounting (M6)	-	6 (4)

Notes: (1) Regarding the definition of $T_{vj\ max}$ for each operation mode, please refer to LD-ES-130737.

(2) Terminal temperature shall not exceed the specified temperature in any operation.

(3) Recommended Value $9 \pm 1 N \cdot m$ (4) Recommended Value $5.5 \pm 0.5 N \cdot m$



ELECTRICAL CHARACTERISTICS

Item	Symbol	Unit	Min.	Typ.	Max.	Test Conditions
Repetitive Reverse Current	I_{RRM}	mA	-	12	20	$V_R=3,300V$, $T_J=150^\circ C$
Forward Voltage Drop	V_F	V	2.9	3.3	3.6	$I_F=1,200A$, $T_J=150^\circ C$
Reverse Recovery Time	t_{rr}	μs	-	0.9	-	$V_R=1,800V$, $I_F=1,200A$, $di/dt=-6000A/\mu s$, $L_s=135nH$, $T_J=150^\circ C$
Reverse Recovery Current	I_{rr}	A	-	1600	-	
Reverse Recovery Charge	Q_{rr}	μC	-	1700	-	
Reverse Recovery Loss	E_{rr}	J/P	-	2.3	-	
I^2t value	I^2t	kA^2s	400	-	-	$T_{j\ start}=150^\circ C$, 10ms, $V_R=0V$, half-sinewave

PACKAGE CHARACTERISTICS

Item	Symbol	Unit	Min.	Typ.	Max.	Test Conditions
Terminal Resistance	R_{CE}	$m\Omega$	-	0.38	-	per arm, 25°C
Terminal Stray Inductance	L_{sCE}	nH	-	36	-	per arm
Thermal Impedance	$R_{th(j-c)}$	K/W	-	-	0.020	Junction to case (per arm)
Comparative tracking index	CTI		-	600	-	
Contact Thermal Impedance	$R_{th(c-f)}$	K/W	-	0.020	-	Case to fin ($\lambda_{grease}=1W/(m \cdot K)$, Heat-sink flatness $\leq 50\mu m$)

* Please contact our representatives at order.

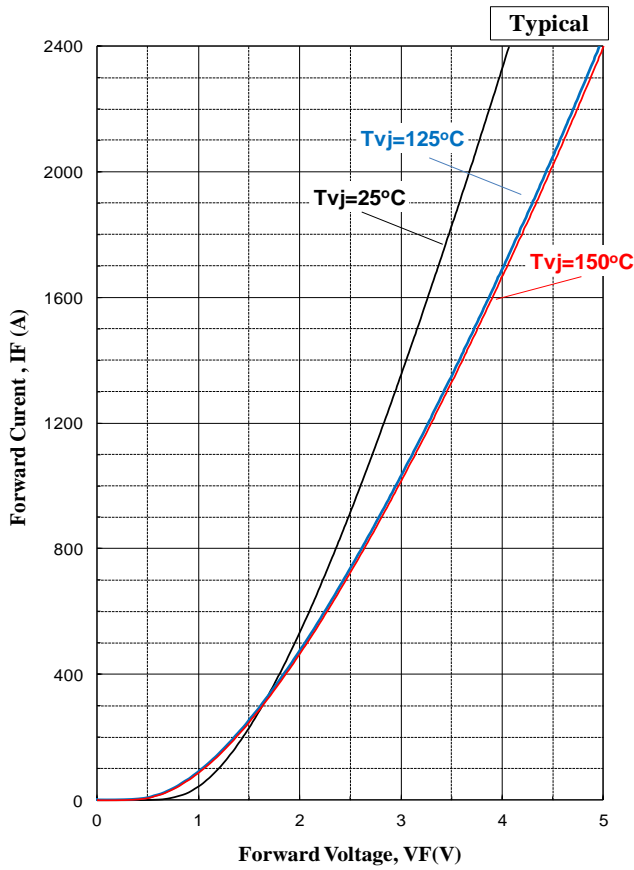
* For improvement, specifications are subject to change without notice.

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

* ELECTRICAL CHARACTERISTIC values according to IEC 60747-2

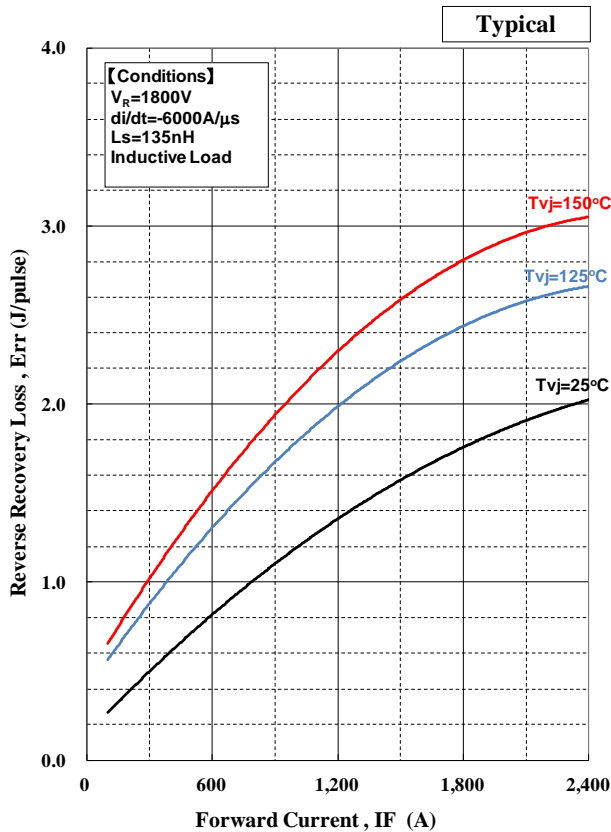
MDM1200FH33F

STATIC CHARACTERISTICS

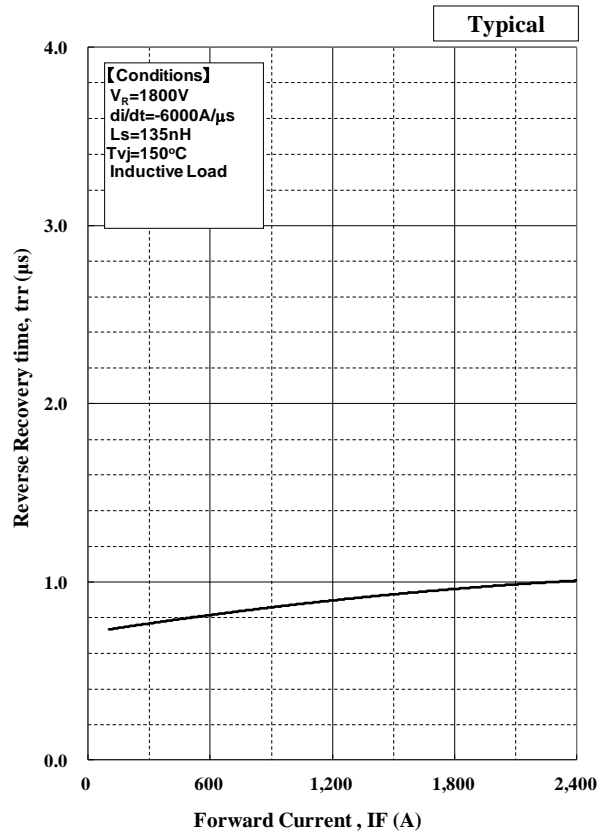


Forward Voltage of free-wheeling diode

DYNAMIC CHARACTERISTICS

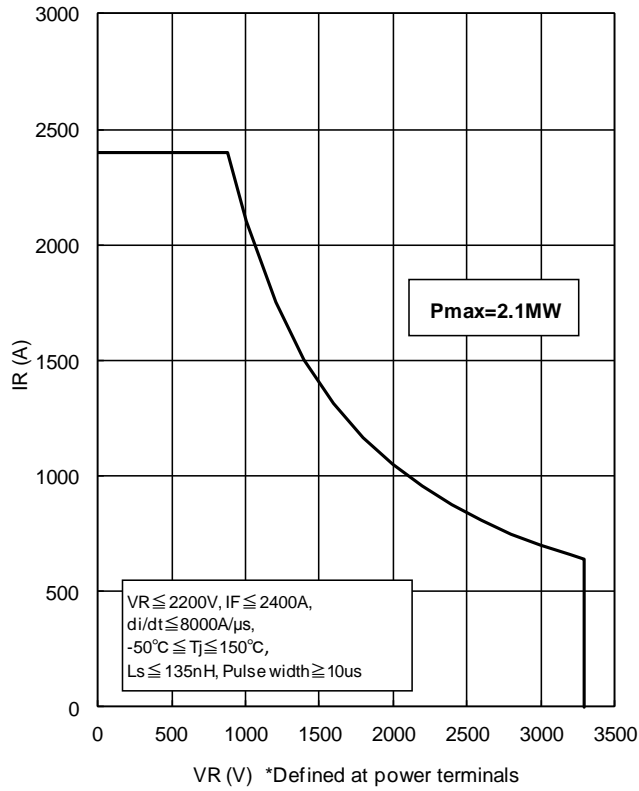


Reverse Recovery Loss vs. Forward Current



Reverse Recovery time vs. Forward Current

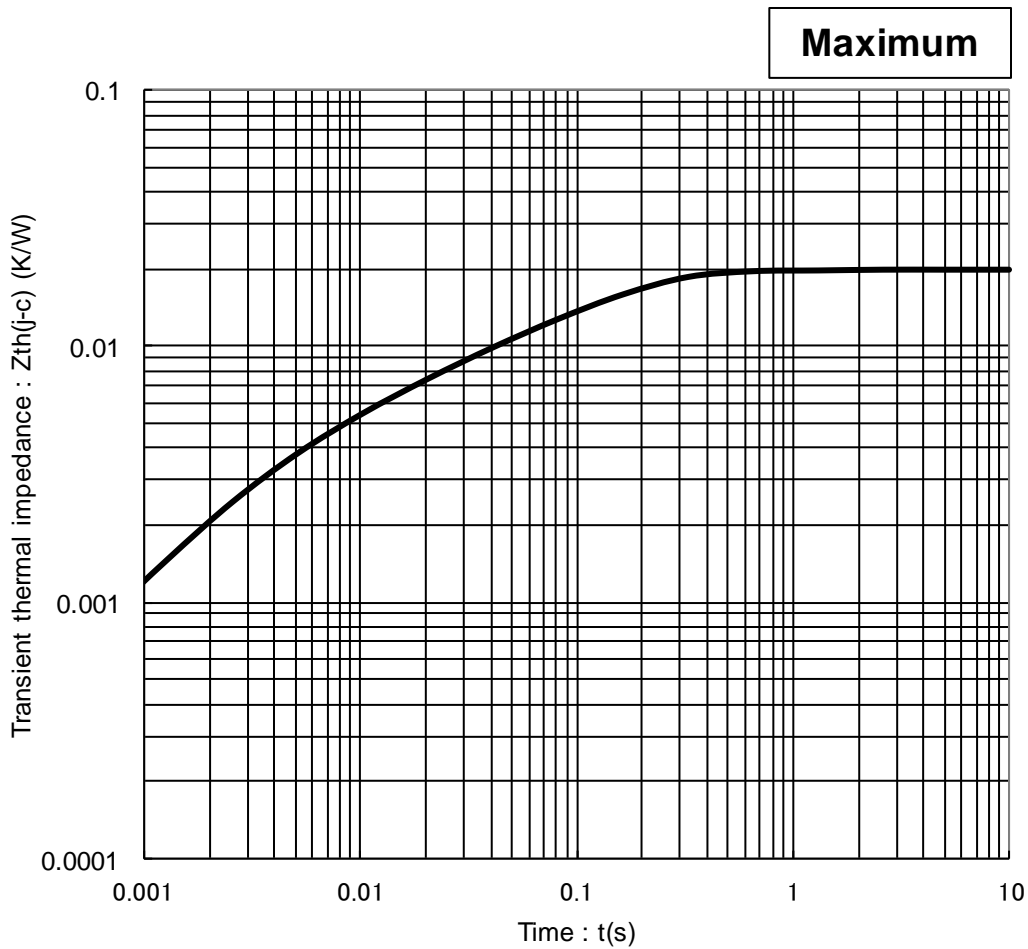
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RecSOA

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TRANSIENT THERMAL IMPEDANCE



Transient Thermal Impedance Curve

Curve approximation model

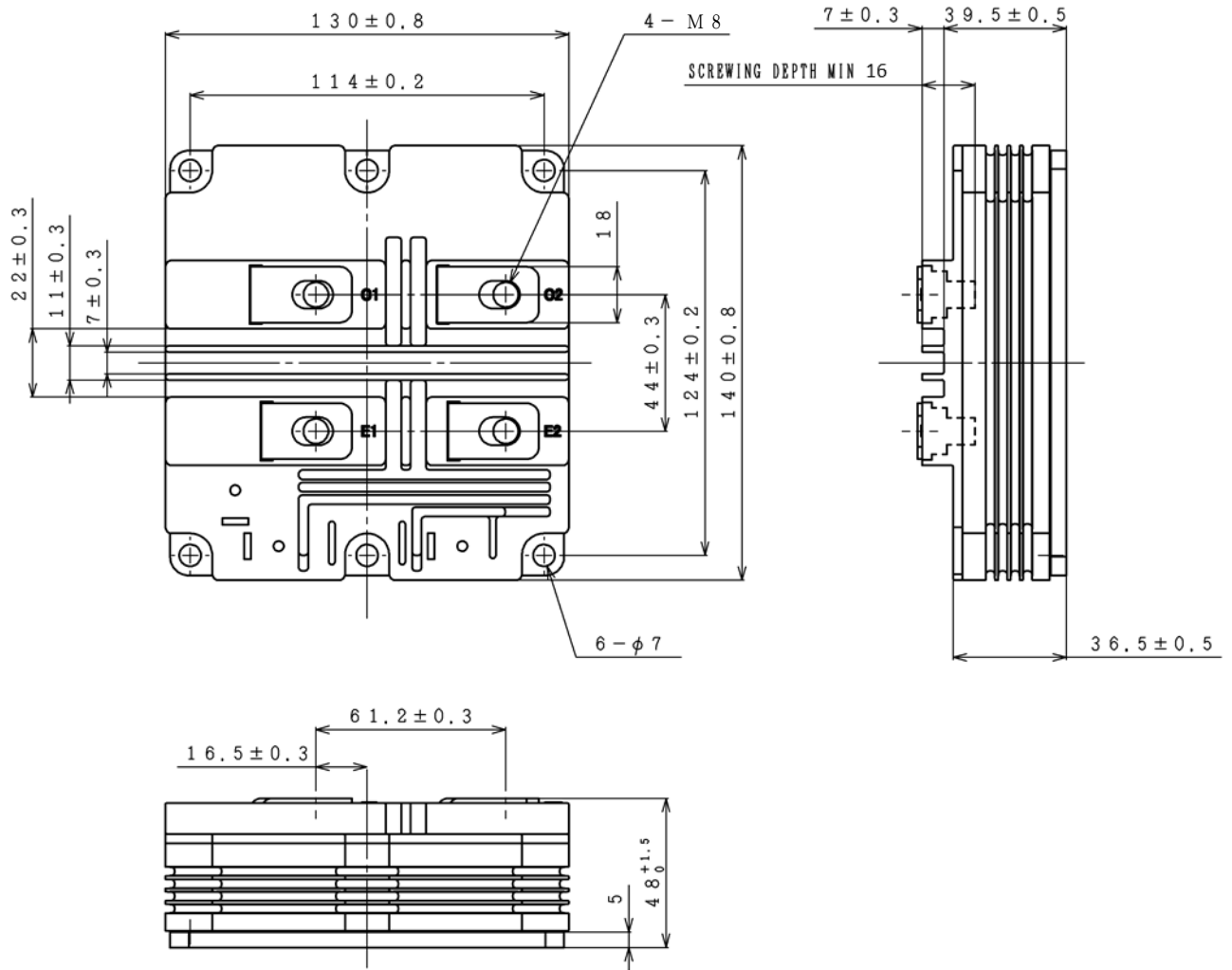
$$(\sum Z_{th}[n] * (1 - \exp(-t/\tau_{th}[n])))$$

n	1	2	3	4	Unit
$\tau_{th}[n]$	0.003	0.03	0.1	0.3	sec
$Z_{th}[n, Diode]$	3.77E-03	2.70E-03	1.12E-02	2.35E-03	K/W

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OUTLINE DRAWING

Unit in mm



Weight: 1000(g)

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HITACHI POWER SEMICONDUCTORS

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