MBN800E33D

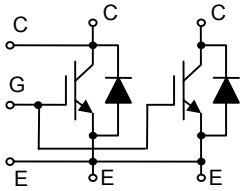
PRELIMINARY SPEC.

Silicon N-channel IGBT

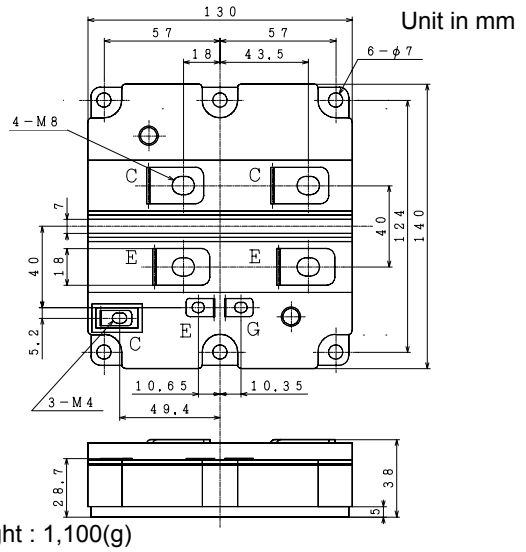
FEATURES

- High speed, low loss IGBT module.
- Low driving power due to low input capacitance MOS gate.
- Low noise due to ultra soft fast recovery diode.
- High reliability, high durability module.
- High thermal fatigue durability. (delta Tc=70°C, N>30,000cycles)
- Isolated heat sink (terminal to base).

CIRCUIT DIAGRAM



OUTLINE DRAWING



Weight : 1,100(g)

ABSOLUTE MAXIMUM RATINGS (Tc=25°C)

Item		Symbol	Unit	MBN800E33D
Collector Emitter Voltage		V_{CES}	V	3,300
Gate Emitter Voltage		V_{GES}	V	±20
Collector Current	DC	I_C	A	800
	1ms	I_{Cp}		1,600
Forward Current	DC	I_F	A	800
	1ms	I_{FM}		1,600
Junction Temperature		T_j	°C	-40 ~ +125
Storage Temperature		T_{stg}	°C	-40 ~ +125
Isolation Voltage		V_{ISO}	V_{RMS}	6,000(AC 1 minute)
Screw Torque	Terminals (M4/M8)	-	N·m	2/10 (1)
	Mounting (M6)	-		6 (2)

Notes: (1) Recommended Value 1.8±0.2/9±1N·m (2) Recommended Value 5.5±0.5N·m

ELECTRICAL CHARACTERISTICS

Item		Symbol	Unit	Min.	Typ.	Max.	Test Conditions
Collector Emitter Cut-Off Current		I_{CES}	mA	-	-	12.0	V_{CE}=3,300V, V_{GE}=0V, Tj=25°C
				-	14	40	V_{CE}=3,300V, V_{GE}=0V, Tj=125°C
Gate Emitter Leakage Current		I_{GES}	nA	-500	-	+500	V_{GE}=±20V, V_{CE}=0V, Tj=25°C
Collector Emitter Saturation Voltage		$V_{CE(sat)}$	V	-	4.2	5.0	I_C=800A, V_{GE}=15V, Tj=125°C
Gate Emitter Threshold Voltage		$V_{GE(TO)}$	V	4.5	6.0	7.0	V_{CE}=10V, I_C=800mA, Tj=25°C
Input Capacitance		C_{ies}	nF	-	75	-	V_{CE}=10V, V_{GE}=0V, f=100kHz, Tj=25°C
Internal Gate Resistance		Rg(int)	Ω	-	1.8	-	V_{CE}=10V, V_{GE}=0V, f=100kHz, Tj=25°C
Switching Times	Rise Time	t_r	μs	-	1.9	3.1	V_{CC}=1,650V, Ic=800A
	Turn On Time	t_{on}		-	2.4	3.3	L=120nH
	Fall Time	t_f		-	1.0	2.5	R_G=4.7Ω (3)
	Turn Off Time	t_{off}		-	3.0	5.1	V_{GE}=±15V, Tj=125°C
Peak Forward Voltage Drop		V_{FM}	V	-	2.5	3.0	Ic=800A, V_{GE}=0V, Tj=125°C
Reverse Recovery Time		t_{rr}	μs	-	0.6	1.1	V_{CC}=1,650V, Ic=800A, L=120nH Tj=125°C
Turn On Loss		$E_{on(10\%)}$	J/P	-	1.1	1.4	V_{CC}=1,650V, Ic=800A, L=120nH
Turn Off Loss		$E_{off(10\%)}$	J/P	-	0.9	1.2	R_G=4.7Ω (3)
Reverse Recovery Loss		$E_{rr(10\%)}$	J/P	-	0.8	1.3	V_{GE}=±15V, Tj=125°C
Stray inductance module		L_{SCE}	nH	-	18	-	
Partial Discharge Extinction Voltage		Vex	Vrms	2.5	-	-	50Hz , Q<10pC
Thermal Impedance	IGBT	Rth(j-c)	°C/W	-	-	0.013	Junction to case
	FWD	Rth(j-c)		-	-	0.026	
Contact Thermal Impedance		Rth(c-f)	°C/W	-	0.008	-	Case to fin

Notes:(3) R_G value is a test condition value for evaluation, not recommended value. Please, determine the suitable R_G value by measuring switching behaviors.

* 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.