MBN1800E17D

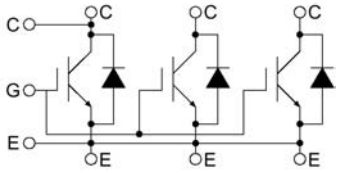
PRELIMINARY SPEC.

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).

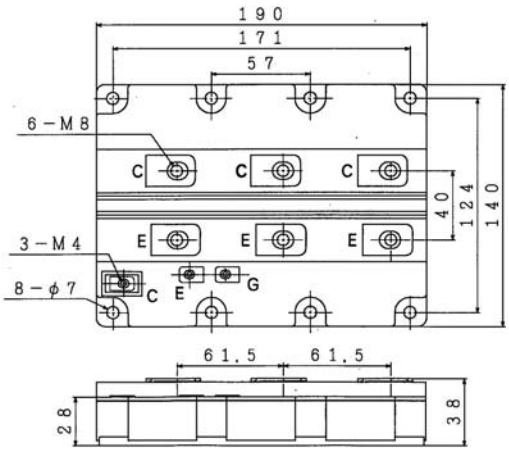
CIRCUIT DIAGRAM



TERMINALS

OUTLINE DRAWING

Unit in mm



Weight : 1300(g)

ABSOLUTE MAXIMUM RATINGS (Tc=25°C)

Item		Symbol	Unit	MBN1800E17D
Collector Emitter Voltage		V_{CES}	V	1,700
Gate Emitter Voltage		V_{GES}	V	±20
Collector Current	DC	I_C	A	1,800
	1ms	I_{Cp}		3,600
Forward Current	DC	I_F	A	1,800
	1ms	I_{FM}		3,600
Junction Temperature		T_j	°C	-40 ~ +125
Storage Temperature		T_{stg}	°C	-40 ~ +125
Isolation Voltage		V_{ISO}	V_{RMS}	4,000(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	-	-	10	V_{CE}=1,700V, V_{GE}=0V, Tj=25°C
				-	15	50	V_{CE}=1,700V, 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	-	2.7	3.3	I_C=1,800A, V_{GE}=15V, Tj=125°C
Gate Emitter Threshold Voltage		$V_{GE(TO)}$	V	5.0	6.5	8.0	V_{CE}=10V, I_C=180mA, Tj=25°C
Input Capacitance		C_{ies}	nF	-	150	-	V_{CE}=10V, V_{GE}=0V, f=100kHz, Tj=25°C
Internal Gate Resistance		Rge	Ω	-	0.6	-	V_{CE}=10V, V_{GE}=0V, f=100kHz, Tj=25°C
Switching Times	Rise Time	t_r	μs	-	0.7	1.4	V_{CC}=900V, Ic=1,800A
	Turn On Time	t_{on}		-	1.2	2.4	L=55nH,C_{GE}=180nF(TBD) (3)
	Fall Time	t_f		-	0.2	0.4	R_G=1.5Ω(TBD) (3)
	Turn Off Time	t_{off}		-	1.5	3.0	V_{GE}=±15V, Tj=125°C
Peak Forward Voltage Drop		V_{FM}	V	-	1.9	2.5	Ic=1,800A, V_{GE}=0V, Tj=125°C
Reverse Recovery Time		t_{rr}	μs	-	0.7	1.4	V_{CC}=900V, Ic=1,800A
Turn On Loss		$E_{on(10\%)}$	J P	-	0.48	0.77	L=55nH,C_{GE}=180nF(TBD) (3)
Turn Off Loss		$E_{off(10\%)}$	J P	-	0.52	0.8	R_G=1.5Ω(TBD) (3)
Reverse Recovery Loss		$E_{rr(10\%)}$	J P	-	0.62	1.0	V_{GE}=±15V, Tj=125°C
Stray inductance module		L_{SCE}	nH	-	12	-	
Thermal Impedance	IGBT	Rth(j-c)	°C/W	-	-	0.013	Junction to case
	FWD	Rth(j-c)		-	-	0.022	
Contact Thermal Impedance		Rth(c-f)	°C/W	-	0.006	-	Case to fin

Notes:(3) R_G and C_{GE} value is the test condition's value for evaluation of the switching times, not recommended value. Please, determine the suitable R_G and C_{GE} 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.