

SPECIFICATION

DEVICE NAME : IGBT

TYPE NAME : 1MBH10D-120

SPEC. No. : MS5F 4091

DATE : July-15-1997

Fuji Electric Co., Ltd.
Matsumoto Factory

	DATE	NAME	APPROVED		Fuji Electric Co., Ltd.	
DRAWN	July 15-97	T. Sawada			DWG. NO.	MS5F 4091
CHECKED	July 15-97	T. Iguchi				

4. Electrical Characteristics (at Tc=25°C unless otherwise specified)

Items		Symbols	Characteristics			Conditions	Unit
			min.	typ.	max.		
Zero gate voltage Collector Current		I_{CES}			1.0	$V_{GE} = 0V$ $V_{CE} = 1200V$	mA
Gate-Emitter leakage Current		I_{GES}			20	$V_{CE} = 0V$ $V_{GE} = \pm 22V$	μA
Gate-Emitter Threshold Voltage		$V_{GE(th)}$	5.5		8.5	$V_{CE} = 20V$ $I_C = 10mA$	V
Collector-Emitter Saturation Voltage		$V_{CE(sat)}$			3.5	$V_{GE} = 15V$ $I_C = 10A$	V
Input capacitance		C_{ies}		1200		$V_{GE} = 0V$	pF
Output capacitance		C_{oes}		250		$V_{CE} = 10V$	
Reverse transfer capacitance		C_{res}		80		$f = 1MHz$	
Switching Time	Turn-on time	t_{on}			1.2	$V_{CC} = 600V$ $I_C = 10A$ $V_{GE} = \pm 15V$ $R_G = 160\Omega$ (Half Bridge)	μs
		t_r			0.6		
	Turn-off time	t_{off}			1.5		
		t_f			0.5		
	Turn-on time	t_{on}		0.16		$V_{CC} = 600V$ $I_C = 10A$ $V_{GE} = +15V$ $R_G = 16\Omega$ (Half Bridge)	
		t_r		0.11			
	Turn-off time	t_{off}		0.30			
		t_f			0.50		
FWD forward voltage drop		V_F			3.0	$I_F = 10A$	V
Reverse recovery time		t_{rr}			0.35	$I_F = 10A, V_{GE} = -10V$ $V_R = 200V$ $di/dt = 100A/\mu s$	μs

5. Thermal resistance characteristics

Items		Symbols	Characteristics			Conditions	Unit
			min.	typ.	max.		
Thermal resistance		$R_{th(j-c)}$			0.80	IGBT	$^{\circ}C/W$
		$R_{th(j-c)}$			1.19	FWD	

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