

1200V / 25A

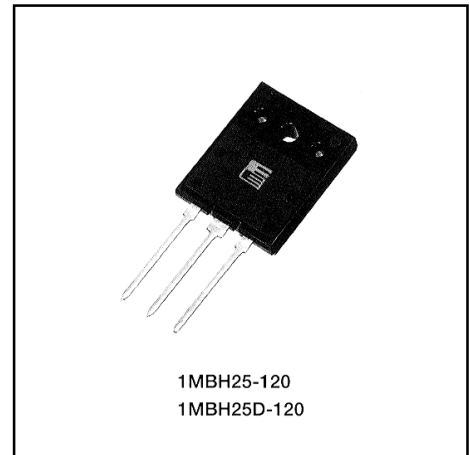
Molded Package

■ Features

- Small molded package
- Low power loss
- Soft switching with low switching surge and noise
- High reliability, high ruggedness (RBSOA, SCSOA etc.)
- Comprehensive line-up

■ Applications

- Inverter for Motor drive
- AC and DC Servo drive amplifier
- Uninterruptible power supply



■ Maximum ratings and characteristics

- Absolute maximum ratings (at Tc=25°C unless otherwise specified)

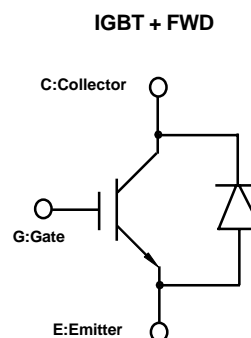
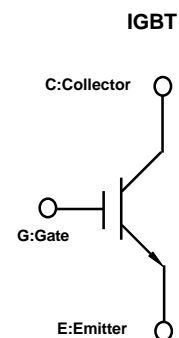
1MBH25-120 / IGBT

Item	Symbol	Rating	Unit		
Collector-Emitter voltage	V _{CES}	1200	V		
Gate-Emitter voltage	V _{GES}	±20	V		
Collector current	DC	T _c =25°C	I _{c25}	38	A
		T _c =100°C	I _{c100}	25	A
	1ms	T _c =25°C	I _{cp}	114	A
Max. power dissipation(IGBT)	P _c	310	W		
Operating temperature	T _j	+150	°C		
Storage temperature	T _{stg}	-40 to +150	°C		
Screw torque	-	70	N·m		

1MBH25D-120 / IGBT+FWD

Item	Symbol	Rating	Unit		
Collector-Emitter voltage	V _{CES}	1200	V		
Gate-Emitter voltage	V _{GES}	±20	V		
Collector current	DC	T _c =25°C	I _{c25}	38	A
		T _c =100°C	I _{c100}	25	A
	1ms	T _c =25°C	I _{cp}	114	A
Max. power dissipation (IGBT)	P _c	310	W		
Max. power dissipation (FWD)	P _c	145	W		
Operating temperature	T _j	+150	°C		
Storage temperature	T _{stg}	-40 to +150	°C		
Screw torque	-	70	N·m		

■ Equivalent Circuit Schematic



● Electrical characteristics (at Tj=25°C unless otherwise specified)

1MBH25-120 / IGBT

Item	Symbol	Characteristics			Conditions	Unit
		Min.	Typ.	Max.		
Zero gate voltage collector current	ICES	-	-	1.0	VGE=0V, VCE=1200V	mA
Gate-Emitter leakage current	IGES	-	-	20	VCE=0V, VGE=±20V	µA
Gate-Emitter threshold voltage	VGE(th)	5.5	-	8.5	VCE=20V, IC=25mA	V
Collector-Emitter saturation voltage	VCE(sat)	-	-	3.5	VGE=15V, IC=25A	V
Input capacitance	Cies	-	2500	-	VGE=0V	pF
Output capacitance	Coes	-	500	-	VCE=10V	
Reverse transfer capacitance	Cres	-	200	-	f=1MHz	
Turn-on time	ton	-	-	1.2	VCC=600V IC=25A	µs
	tr	-	-	0.6	VGE=±15V	
Turn-off time	toff	-	-	1.5	RG=82 ohm	
	tf	-	-	0.5	(Half Bridge)	

1MBH25D-120 / IGBT+FWD

Item	Symbol	Characteristics			Conditions	Unit
		Min.	Typ.	Max.		
Zero gate voltage collector current	ICES	-	-	1.0	VGE=0V, VCE=1200V	mA
Gate-Emitter leakage current	IGES	-	-	20	VCE=0V, VGE=±20V	µA
Gate-Emitter threshold voltage	VGE(th)	5.5	-	8.5	VCE=20V, IC=25mA	V
Collector-Emitter saturation voltage	VCE(sat)	-	-	3.5	VGE=15V, IC=25A	V
Input capacitance	Cies	-	2500	-	VGE=0V	pF
Output capacitance	Coes	-	500	-	VCE=10V	
Reverse transfer capacitance	Cres	-	200	-	f=1MHz	
Turn-on time	ton	-	-	1.2	VCC=600V, IC=25A	µs
	tr	-	-	0.6	VGE=±15V	
Turn-off time	toff	-	-	1.5	RG=82 ohm	
	tf	-	-	0.5	(Half Bridge)	
FWD forward on voltage	VF	-	-	3.0	IF=25A, VGE=0V	V
Reverse recovery time	trr	-	-	0.35	IF=25A, VGE=-10V, di/dt=100A/µs	µs

● Thermal resistance characteristics

1MBH25-120 / IGBT

Item	Symbol	Characteristics			Conditions	Unit
		Min.	Typ.	Max.		
Thermal resistance	Rth(j-c)	-	-	0.40	IGBT	°C/W

1MBH25D-120 / IGBT+FWD

Item	Symbol	Characteristics			Conditions	Unit
		Min.	Typ.	Max.		
Thermal resistance	Rth(j-c)	-	-	0.40	IGBT	°C/W
	Rth(j-c)	-	-	0.86	FWD	°C/W

■ Outline drawings, mm

1MBH25-120, 1MBH25D-120

TO-3PL

