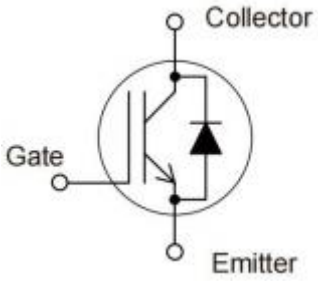
1200V 40A CoolFAST™ 7 Technology IGBT

Part No.: HM40N120FT

Package: TO-247-3L

Features:

- Low switching power loss 低开关损耗
- Low switching surge and noise 低开关浪涌和噪音
- Advanced Field Stop trench technology 先进的场截止沟槽技术
- Max junction temperature 175 oC 最大结温 175 oC



Applications:

- UPS 不间断电源
- Welding machine 电焊机
- Solar converters 太阳能转换器
- EV-Charging 电动汽车充电桩

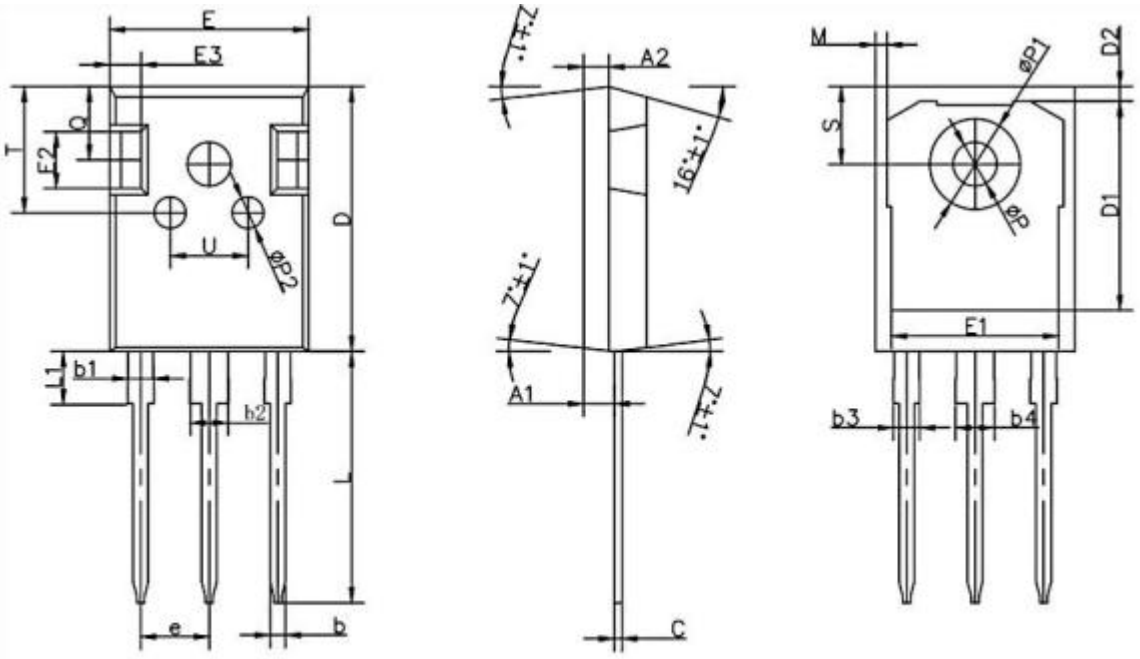
Key Performance and Package Parameters

Type	Vce	Ic	VCEsat,Tvj=25℃	Tvjmax	Marking	Package
HM40N120FT	1200V	40A	1.75V	175℃	HM40N120FT	TO-247-3L

Electrical Characteristics at Tvj= 25°C (unless otherwise specified)

Parameter 项目	Symbol 符号	Conditions 测试条件	Min 最小值	Typ 典型值	Max 最大值	Unit 单位
Zero Gate Voltage Collector Current 集射漏电流	I_{CES}	V_{CE}= 1200V, V_{GE}= 0V	-	-	200	μA
Gate-Emitter Leakage Current 栅射漏电流	I_{GES}	V_{CE}= 0V, V_{GE}= ±20V	-	-	±200	nA
Gate-Emitter Threshold Voltage 栅极开启电压	$V_{GE(th)}$	V_{CE}= V_{GE}, I_C= 250uA	5.1	5.9	6.7	V
Collector-Emitter Saturation Voltage 饱和压降	$V_{CE(sat)}$	V_{GE}= 15V, I_C= 40A T_J= 25°C T_J= 175°C	-	1.75 2.40	2.20	V
Input Capacitance 输入电容	C_{ies}	V_{CE}= 25V, V_{GE}= 0V f= 1MHz	-	9500	-	pF
Output Capacitance 输出电容	C_{oes}		-	150	-	pF
Reverse Transfer Capacitance 反向传输电容	C_{res}		-	86	-	pF
Gate Charge 栅电荷	Q_G	V_{CC}= 960V, I_C= 40A V_{GE}= 15V	-	320	-	nC
Turn-On Delay Time 开启延迟时间	$t_{d(on)}$	V_{CC}= 600V I_C= 40A V_{GE}= 15V R_G= 10Ω 感性负载	-	65	-	ns
Rise Time 开启上升时间	t_r		-	110	-	ns
Turn-Off Delay Time 关断延迟时间	$t_{d(off)}$		-	250	-	ns
Fall Time 关断下降时间	t_f		-	75	-	ns
Turn-On Energy 导通损耗	E_{on}		-	2.1	-	mJ
Turn-Off Energy 关断损耗	E_{off}		-	1.2	-	mJ

TO-247-3L Package Outline



TO247-3L			
DIM.	MIN.	NOM.	MAX.
A	4.90	5.00	5.10
A1	2.25	2.36	2.51
A2	1.90	2.00	2.10
b	1.16	1.20	1.26
b1	1.96	2.00	2.06
b2	2.96	3.00	3.06
b3	–	–	2.25
b4	–	–	3.25
c	0.59	0.60	0.66
D	20.90	21.00	21.10
D1	16.25	16.55	16.85
D2	1.05	1.17	1.35
E	15.70	15.80	15.90
E1	13.10	13.26	13.50
E2	4.40	4.50	4.60
E3	2.40	2.50	2.60
e	5.436BSC		
L	19.80	19.90	20.10
L1	–	–	4.30
M	0.35	0.89	0.95
P	3.40	3.50	3.60
P1	7.00	7.20	7.40
P2	2.40	2.50	2.60
Q	5.60	5.80	6.00
S	6.05	6.15	6.25
T	9.80	10.00	10.20
U	6.00	6.20	6.40
All dimensions in millimeters			