

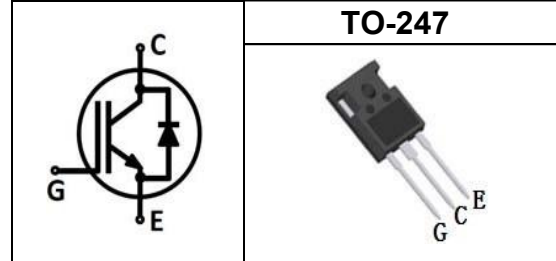
特征/Features

- 饱和压降为正温度系数，易于并联使用
Easy parallel switching capability due to positive temperature coefficient in V_{CEsat}
- 低饱和压降，快速开关
Low V_{CEsat} , fast switching
- 高可靠性及热稳定性，良好的参数一致性
High ruggedness, good thermal stability very tight parameter distribution

型号/Type	打标/Marking	封装/Package
QMW15N120B	QM15N120B	TO-247

应用领域/Applications

- 感应烹饪/ Inductive cooking
- 微波炉/microwave ovens
- 软开关/Soft Switching



最大额定值/Maximum Rated Values ¹

Item	Symbol	Value	Unit
集电极-发射极电压 Collector-emitter voltage	V_{CE}	1200	V
集电极电流 DC collector current, limited by T_{jmax} $T_C=25^\circ\text{C}$ $T_C=100^\circ\text{C}$	I_C	30 15	A
集电极脉冲电流 Pulsed collector current, t_p limited by $T_{vjmax}^{1)}$	I_{Cpuls}	60	
二极管正向电流 Diode forward current, limited by T_{vjmax} $T_C=25^\circ\text{C}$ $T_C=100^\circ\text{C}$	I_F	8 4	
二极管脉冲电流 Diode pulsed current, t_p limited by $T_{vjmax}^{1)}$	I_{Fpuls}	16	
栅极-发射极电压 Gate-emitter voltage	V_{GE}	± 20	V
耗散功率 Power dissipation $T_C=25^\circ\text{C}$ $T_C=100^\circ\text{C}$	P_{tot}	178 71	W
工作结温 Operating junction temperature	T_j	- 40~175	°C
储存温度 Storage temperature	T_{stg}	- 55~150	

1) Defined by design. Not subject to production test.

热学特性/Thermal Characteristics

Item	Symbol	Conditions	Min.	Typ.	Max.	Unit
结-外壳热阻 IGBT thermal resistance, junction-case	R_{thJC}	-	-	-	0.7	K/W
结-环境热阻 Thermal Resistance, junction-ambient	R_{thJA}	-	-	-	40	

电学特性/Electrical Characteristics

静态特性/Static Characteristics (at $T_j=25^\circ\text{C}$ unless otherwise specified)

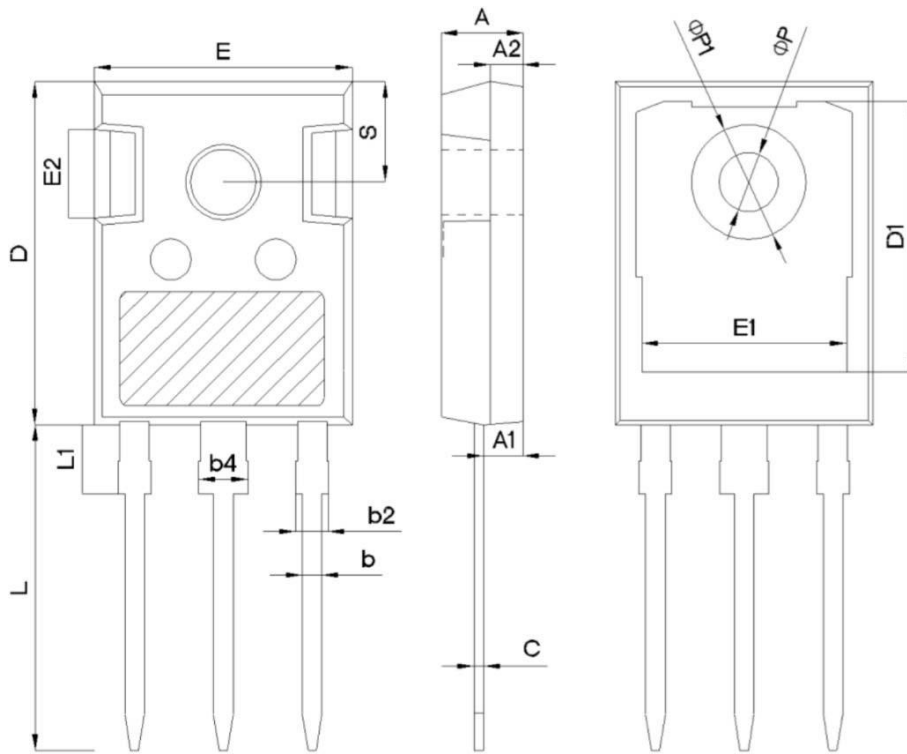
Item	Symbol	Conditions	Min.	Typ.	Max.	Unit
集电极-发射极击穿电压 Collector-emitter breakdown voltage	$V_{(BR)CES}$	$V_{GE}=0V,$ $I_C=0.25mA$	1200	-	-	V
集电极-发射极饱和电压 Collector-emitter saturation voltage	$V_{CE(sat)}$	$V_{GE}=15V,$ $I_C=15A$ $T_j=25^\circ\text{C}$	-	1.9	2.3	
二极管正向压降 Diode forward voltage	V_F	$V_{GE}=0V,$ $I_F=4A$	-	2.0	-	
阈值电压 G-E threshold voltage	$V_{GE(th)}$	$I_C=1mA,$ $V_{CE}=V_{GE}$	4.5	5.5	6.5	
集电极-发射极漏电流 C-E leakage current	I_{CES}	$V_{CE}=1200V,$ $V_{GE}=0V$ $T_j=25^\circ\text{C}$ $T_j=150^\circ\text{C}$	- -	- -	0.01 1.0	mA
栅极-发射极漏电流 G-E leakage current	I_{GES}	$V_{CE}=0V,$ $V_{GE}=20V$	-	-	100	nA

动态特性/Dynamic Characteristics

Item	Symbol	Conditions	Min.	Typ.	Max.	Unit
输入电容 Input capacitance	C_{iss}	$V_{CE}=25V,$ $V_{GE}=0V,$ $f=1MHz$	-	2527	-	pF
输出电容 Output capacitance	C_{oss}		-	50	-	
反馈电容 Reverse transfer capacitance	C_{riss}		-	21	-	
栅电荷 Gate charge	Q_G	$V_{CC}=600V,$ $I_C=15A,$ $V_{GE}=15V$	-	71	-	nC

IGBT开关特性(感性负载) / IGBT Switching Characteristics

Item	Symbol	Conditions	Min.	Typ.	Max.	Unit
关断延迟时间 Turn-off delay time	$t_{d(off)}$	$T_j=25\text{ }^\circ\text{C}$, $V_{CC}=600\text{V}$, $I_C=15\text{A}$, $V_{GE}=0\text{V}/15\text{V}$, $R_G=10\Omega$, <i>Inductive load</i>	-	170	-	
下降时间 Fall time	t_f		-	157	-	
关断损耗 Turn-off energy	E_{off}		-	0.89	-	
关断延迟时间 Turn-off delay time	$t_{d(off)}$	$T_j=150\text{ }^\circ\text{C}$, $V_{CC}=600\text{V}$, $I_C=15\text{A}$, $V_{GE}=0\text{V}/15\text{V}$, $R_G=10\Omega$, <i>Inductive load</i>	-	-	-	ns
下降时间 Fall time	t_f		-	-	-	
关断损耗 Turn-off energy	E_{off}		-	-	-	

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SYMBOL	mm		
	MIN	NOM	MAX
A	4.80	5.00	5.20
A1	2.21	2.41	2.61
A2	1.85	2.00	2.15
b	1.11	1.21	1.36
b2	1.91	2.01	2.21
b4	2.91	3.01	3.21
c	0.51	0.61	0.75
D	20.70	21.00	21.30
D1	16.25	16.55	16.85
E	15.50	15.80	16.10
E1	13.00	13.30	13.60
E2	4.80	5.00	5.20
E3	2.30	2.50	2.70
e	5.44BSC		
L	19.62	19.92	20.22
L1	-	-	4.30
ΦP	3.40	3.60	3.80
ΦP1	-	-	7.30
S	6.15BSC		

修订历史/Revision History:

修订 /Revision	主题（自上次修订以来的主要变化） /Subjects (major changes since last revision)	日期 /Date
1.0	Initial Version	2023-04

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