MM40G3T120B

1200V 40A IGBT

May 2018 Version 01 RoHS Compliant

PRODUCT FEATURES

¶ IGBT chip in trench FS-technology

¶ Low switching losses

¶ $V_{CE(sat)}$ with positive temperature coefficient

¶ Fast switching and short tail current

¶ Free wheeling diodes with fast and soft reverse recovery

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2
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APPLICATIONS

¶ High frequency switching application

1.Gate
2.Collector
3.Emitter

Type	V_{CES}	I_C	$V_{CE(sat)}$ T_J=25°C	T_{Jmax}	PackageS	
MM40G3T120B	1200V	40A	1.9V	175°C	MM40G3T120B	TO-247

ABSOLUTE MAXIMUM RATINGS(T_C =25°C unless otherwise specified)

Symbol	Parameter/Test Conditions		Values	Unit
V_{CES}	Collector Emitter Voltage	T_J=25	1200	V
V_{GES}	Gate Emitter Voltage		±20	
I_C	DC Collector Current	T_C=25	70	A
		T_C=110	40	
I_{Cpuls}	Pulsed collector current,tp limited by T_{Jmax}		140	
P_{tot}	Power Dissipation Per IGBT		395	W
V_{RRM}	Repetitive Reverse Voltage	T_J=25	1200	V
			80	
T_{Jmax}	Max. Junction Temperature		175 T_{Jmax}	
	Storage Temperature		-55~150	
Torque	to heatsink	Recommended ÄM3 Å	1.1	Nm
Weight			8	g

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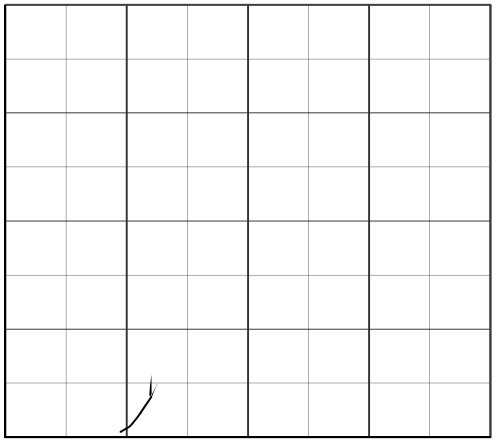
						Unit
		I_C=40A, V_{GE}=15V, T_J=150		2.35		
I_{CES}	Collector Leakage Current	V_{CE}=1200V, V_{GE}=0V, T_J=25			100	μA
		V_{CE}=1200V, V_{GE}=0V, T_J=150			10	mA
I_{GES}	Gate Leakage Current	V_{CE}=0V,V_{GE}=±15V, T_J=25	-400		400	nA
Q_g	Gate Charge	V_{CE}=600V, I_C=40A , V_{GE}=15V		210		nC
C_{ies}	Input Capacitance	V_{CE}=25V, V_{GE}=0V, f =1MHz		2.8		nF
C_{res}	Reverse Transfer Capacitance			110		pF
$t_{d(on)}$	Turn on Delay Time	V_{CC}=600V,I_C=40A R_G =20 , V_{GE}=±15V, Inductive Load	T_J=25	30		ns
			T_J=125	35		ns
			T_J=150	40		ns
t_r	Rise Time		T_J=25	40		ns
			T_J=125	45		ns
			T_J=150	45		ns
$t_{d(off)}$	Turn off Delay Time	V_{CC}=600V,I_C=40A R_G =20 , V_{GE}=±15V, Inductive Load	T_J=25	250		ns
			T_J=125	290		ns
			T_J=150	310		ns
			T_J=25	100		ns



I_C(A)

V_{CE} ÄV Å

Figure 1. Typical Output Characteristics IGBT

I_C(A)

V_{CE} ÄV Å

Figure 2. Typical Output Characteristics IGBT

I_C(A)

E_{off}(mJ)

Dimensions in (mm)