



Name: AnM100HBA07M, AnM100LCA07M, AnM100RCA07M

Features:

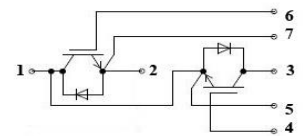
- Native Components
- Structure NPT+
- Low  $V_{CE(sat)}$
- High short circuit capability
- Easy paralleling
- Positive temperature coefficient of  $V_{CE(sat)}$
- Low  $C_{ies}$ ,  $C_{oes}$ ,  $C_{res}$
- 100% control of the effect of double current
- Insulated base plate for heat dissipation
- Self-restraint on the short-circuit currents

Applications:

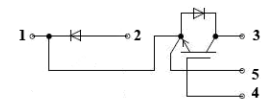
- AC Motor Control
- Motion/Servo Control
- UPS



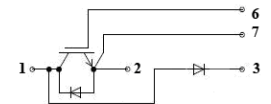
HB



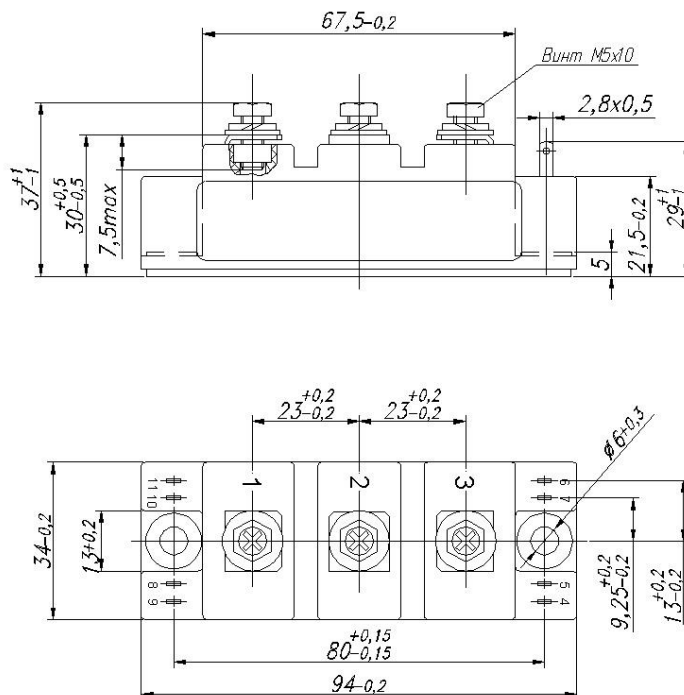
RC



LC



Type	$V_{CE}$	$I_c$	Package	Packaging
AnM100HBA07M	650 V	100 A	A – 34 mm	Box
AnM100LCA07M				
AnM100RCA07M				



**Table 1 – Absolute Maximum Rated Values**

	Parameter		Units
<b>IGBT</b>			
$V_{CES}$	Collector-to-Emitter Voltage	650	V
$V_{GES}$	Gate-to-Emitter Voltage	$\pm 20$	V
$I_C, T_C=25^\circ\text{C}$	Collector Current	130	A
$I_{CM}, T_C=25^\circ\text{C}$	Pulsed Collector Current	260	
$I_C, T_C=70^\circ\text{C}$	Collector Current	100	
$I_{CM}, T_C=70^\circ\text{C}$	Pulsed Collector Current	200	
$P_D, T_C=25^\circ\text{C}$	Total Maximum Dissipation	410	W
<b>Inverse diode</b>			
$I_F, T_C=25^\circ\text{C}$	Forward Current	100	A
$I_{FM}, T_C=25^\circ\text{C}$	Pulsed Forward Current	200	
$I_F, T_C=70^\circ\text{C}$	Forward Current	80	
$I_{FM}, T_C=70^\circ\text{C}$	Pulsed Emitter Current	160	
<b>Free-wheeling diode</b>			
$I_F, T_C=25^\circ\text{C}$	Forward Current	100	A
$I_{FM}, T_C=25^\circ\text{C}$	Pulsed Forward Current	200	
$I_F, T_C=70^\circ\text{C}$	Forward Current	80	
$I_{FM}, T_C=70^\circ\text{C}$	Pulsed Emitter Current	160	
$T_j$	Operating Temperature	-55 to +150	°C
$T_{stg}$	Storage Temperature	-55 to +125	
	Mounting Torque, M5	2.5 to 5.0	N * m
	Weight	200	g
$V_{is}$	Insulation Test Voltage ( $t=1$ min.)	2500	Vrms

**Table 2 – Thermal Resistance**

Symbol	Parameter	Min	Max	Units	Test Conditions
$R_{thJC}$	Thermal Resistance, Junction-to-Case	–	0.3	°C/W	Per IGBT
$R_{thJCD}$	Thermal Resistance, Junction-to-Case	–	0.64		Per Diode



**Table 3 – Electrical Characteristics @  $T_j=25^\circ\text{C}$  (unless otherwise specified)**

Symbol	Parameter	Min.	Typ.	Max.	Units	Test Conditions
<b>IGBT</b>						
$V_{CE(sat)}$	Collector-to-Emitter Saturation Voltage	–	2.2	2.5	V	$V_{GE}=15\text{ V}, I_C=100\text{ A}^{3)}$
		–	2.5	3.0		$V_{GE}=15\text{ V}, I_C=100\text{ A}^{3)}, T_j=125\text{ }^\circ\text{C}$
$V_{GE(th)}$	Gate Threshold Voltage	4.0	5.0	7.0	V	$V_{GE}=V_{GES}, I_C=2.0\text{ mA}$
$I_{CES}$	Zero Gate Voltage Collector Current	–	0.005	0.1	mA	$V_{CE}=650\text{ V}, V_{GE}=0\text{ V}$
		–	0.5	1.0		$V_{CE}=650\text{ V}, V_{GE}=0\text{ V}, T_j=125\text{ }^\circ\text{C}$
$I_{GES(F)}$	Gate-to-Source Leakage Forward	–	10	100	nA	$V_{GE}=20\text{ V}$
		–	20	150		$V_{GE}=20\text{ V}, T_j=125\text{ }^\circ\text{C}$
$I_{GES(R)}$	Gate-to-Source Leakage Reverse	–100	–10	–	nA	$V_{GE}=-20\text{ V}$
		–150	–20	–		$V_{GE}=-20\text{ V}, T_j=125\text{ }^\circ\text{C}$
$C_{ies}$	Input Capacitance	–	tbd	–	nF	$V_{GE}=0\text{ V}, V_{CE}=25\text{ V}, f=1\text{ MHz}$
$C_{oes}$	Output Capacitance	–	tbd	–		
$C_{res}$	Reverse Transfer Capacitance	–	tbd	–		
$t_{d(on)}$	Turn-On Delay Time	–	tbd	–	ns	$V_{CC}=350\text{ V}, I_C=100\text{ A}, V_{GE}=15\text{ V}, R_G=10\text{ }\Omega, T_j=125\text{ }^\circ\text{C},$ Inductive Load
$t_r$	Rise Time	–	tbd	–		
$t_{d(off)}$	Turn-Off Delay Time	–	tbd	–		
$t_f$	Fall Time	–	tbd	–		
$Q_G$	Total Gate Charge	–	tbd	–	nC	$V_{CC}=350\text{ V}, I_C=100\text{ A}, V_{GE}=15\text{ V}, R_G=10\text{ }\Omega$
$Q_{GE}$	Gate-Emitter Charge	–	tbd	–		
$Q_{GC}$	Gate-Collector Charge	–	tbd	–		
$E_{on}$	Turn-On Energy	–	tbd	–	mJ	$V_{CC}=350\text{ V}, I_C=100\text{ A}, V_{GE}=15\text{ V}, R_G=10\text{ }\Omega, T_j=125\text{ }^\circ\text{C},$ Inductive Load
$E_{off}$	Turn-Off Energy	–	tbd	–		
$E_{tot}$	Total Energy	–	tbd	–		
$I_{sc}$	Short circuit collector current	–	400	–	A	$t_p \leq 10\text{ }\mu\text{sec}, V_{GE} \leq 15\text{ V}, R_G=10\text{ }\Omega, T_j=125\text{ }^\circ\text{C}, V_{CC}=400\text{ V}, V_{CEmax}=V_{CES}-L_{sCE} \cdot di/dt$

**Inverse and Free-Wheeling Diode**

$V_F$	Forward Voltage	–	1.6	2.0	V	$I_F=100$ A, $V_{GE}=0$ V $I_F=100$ A, $di_F/dt=0.5$ A/ns, $V_{GE}=0$ V, $T_j=25$ °C
$I_{rrm}$	Maximum Reverse Recovery Current	–	45	–	A	
$t_{rr}$	Diode Reverse Recovery Time	–	140	300	ns	
$Q_{rr}$	Diode Reverse Recovery Charge	–	3.9	–	$\mu$ C	

**Precious metal content into 1000 pieces:**

Gold \_\_\_\_\_ g;

Silver \_\_\_\_\_g.



**Table 4 – Revision history**

<b>Date</b>	<b>Revision</b>	<b>Changes</b>
03-Oct-2016	4	Complete version. Preliminary.