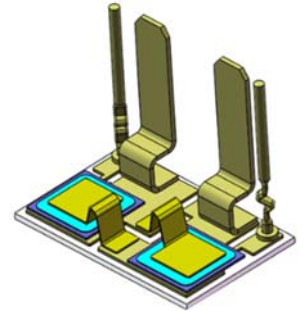


DBC040C/xxKQ-KxxA

Description

- 1) Components adopt vacuum welding to well control void and rated voltage up to 1600V.
- 2) A package of two inverse parallel SCRs.
- 3) Thyristor chips are welding on the ceramic copper clad laminate, products with high electricity ability, excellent heat dissipation ability.



Typical Application

Constant temperature system, CNC machine, remote control system, lighting control, power compensation and so on.

Absolute Maximum Ratings (Packaged into modules, unless otherwise specified, $T_{CASE}=25^{\circ}C$)

Parameter	Test Conditions	Symbol	Values		Unit
			12	16	
Operating junction temperature range		T_J	-40~+125		$^{\circ}C$
Repetitive peak off-state voltage	$T_J=25^{\circ}C$	V_{DRM}	1200	1600	V
Repetitive peak reverse voltage	$T_J=25^{\circ}C$	V_{RRM}	1200	1600	V
Non-repetitive peak off-state voltage	$T_J=25^{\circ}C$	V_{DSM}	1300	1700	V
Non-repetitive peak reverse voltage	$T_J=25^{\circ}C$	V_{RSM}	1300	1700	V
Average on-state current	$T_C=80^{\circ}C$	$I_{T(AV)}$	40		A
RMS on-state current	$T_C=80^{\circ}C$	$I_{T(RMS)}$	60		A
Non-repetitive surge peak on-state current	$t_p=10ms V_R=0.6V_{RRM}$	I_{TSM}	800		A
I^2t value for fusing	$t_p=10ms V_R=0.6V_{RRM}$	I^2t	3200		A^2s
Critical rate of rise of on-state current	$I_G=2 \times I_{GT}$	di/dt	150		$A/\mu s$

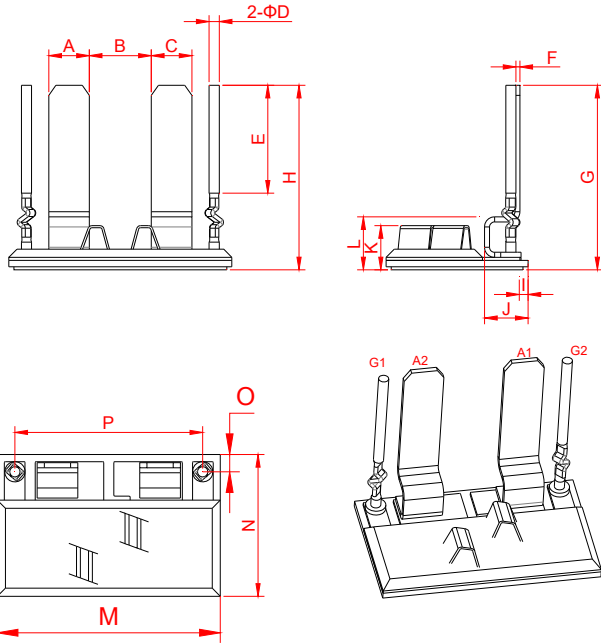
Electrical Characteristics (Packaged into modules, unless otherwise specified, $T_{CASE}=25^{\circ}C$)

Parameter	Test Conditions	Symbol	Values	Unit
Peak on-state voltage	$I_{TM}=120A t_p=380\mu s$	V_{TM}	≤ 1.8	V
Repetitive peak off-state current	$V_D=V_{DRM}$	I_{DRM1}	≤ 50	μA
	$T_C=25^{\circ}C$			
	$T_C=125^{\circ}C$	I_{DRM2}	≤ 10	mA

Repetitive peak reverse current	$V_R=V_{RRM}$ $T_C=25^\circ\text{C}$ $T_C=125^\circ\text{C}$	I_{RRM1} I_{RRM2}	≤ 50 ≤ 10	μA mA
Triggering gate current	$V_D=12\text{V}$ $R_L=30\Omega$	I_{GT}	10-80	mA
Latching current	$I_G=1.2I_{GT}$	I_L	≤ 250	mA
Holding current	$I_T=1\text{A}$	I_H	≤ 150	mA
Triggering gate voltage	$V_D=12\text{V}$ $R_L=30\Omega$	V_{GT}	≤ 1.3	V
Non triggering gate voltage	$V_D=V_{DRM}$ $T_J=125^\circ\text{C}$	V_{GD}	≥ 0.2	V
Critical rate of rise of voltage	$V_D=2/3V_{DRM}$ $T_J=125^\circ\text{C}$ Gate Open	dv/dt	≥ 1000	V/ μs

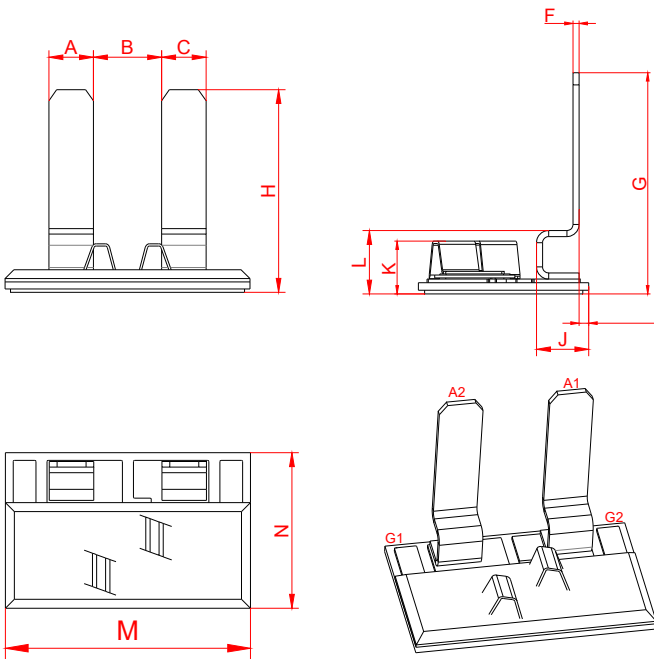
Mechanical Characteristics

Chip size	7.6mm×7.6mm						
Module size	22mm×14mm						
Terminal height	19.2mm						
Solder composition and melting point of DBC	Solder composition: Pb92.5%Sn5%Ag2.5%; melting point>295°C.						
<p style="text-align: center;">DBC040C/xxKQ-KG0A</p>	Dimensions						
	Ref	Millimeters			Inches		
		Min	Typ	Max	Min	Typ	Max
	A	3.7	4.0	4.3	0.146	0.157	0.169
	B	5.6	6.1	6.6	0.220	0.240	0.260
	C	3.7	4.0	4.3	0.146	0.157	0.169
	D		1.0			0.039	
	E		10.65			0.419	
	F	0.3	0.5	0.7	0.012	0.020	0.028
	G			19.2			0.756
	H			19.2			0.756
	I	0.3	0.8	1.3	0.012	0.031	0.051
	J	3.8	4.3	4.8	0.150	0.169	0.189
	K			6.0			0.236
	L			6.2			0.244
	M	21.7	22.0	22.3	0.854	0.866	0.878
N	13.7	14.0	14.3	0.539	0.551	0.563	
O	1.2	1.7	2.2	0.047	0.067	0.087	
P	18.0	18.5	19.0	0.709	0.728	0.748	



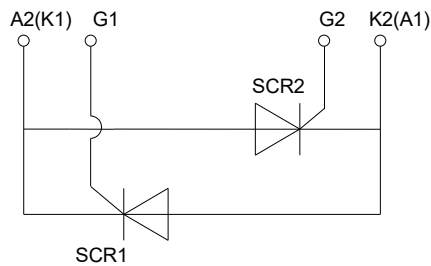
DBC040C/xxKQ-KG1A

Ref	Dimensions					
	Millimeters			Inches		
	Min	Typ	Max	Min	Typ	Max
A	3.7	4.0	4.3	0.146	0.157	0.169
B	5.6	6.1	6.6	0.220	0.240	0.260
C	3.7	4.0	4.3	0.146	0.157	0.169
D		1.0			0.039	
E		10.65			0.419	
F	0.3	0.5	0.7	0.012	0.020	0.028
G			19.2			0.756
H			19.2			0.756
I	0.3	0.8	1.3	0.012	0.031	0.051
J	3.8	4.3	4.8	0.150	0.169	0.189
K			6.0			0.236
L			6.2			0.244
M	21.7	22.0	22.3	0.854	0.866	0.878
N	13.7	14.0	14.3	0.539	0.551	0.563
O	1.2	1.7	2.2	0.047	0.067	0.087
P	18.0	18.5	19.0	0.709	0.728	0.748



DBC040C/xxKQ-K1A

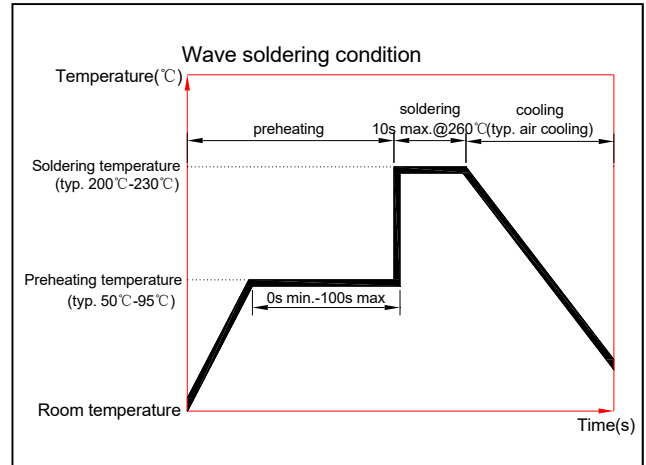
Ref	Dimensions					
	Millimeters			Inches		
	Min	Typ	Max	Min	Typ	Max
A	3.7	4.0	4.3	0.146	0.157	0.169
B	5.6	6.1	6.6	0.220	0.240	0.260
C	3.7	4.0	4.3	0.146	0.157	0.169
F	0.3	0.5	0.7	0.012	0.020	0.028
G			19.2			0.756
H			19.2			0.756
I	0.3	0.8	1.3	0.012	0.031	0.051
J	3.8	4.3	4.8	0.150	0.169	0.189
K			6.0			0.236
L			6.2			0.244
M	21.7	22.0	22.3	0.854	0.866	0.878
N	13.7	14.0	14.3	0.539	0.551	0.563



symbol

Soldering Process Requirements

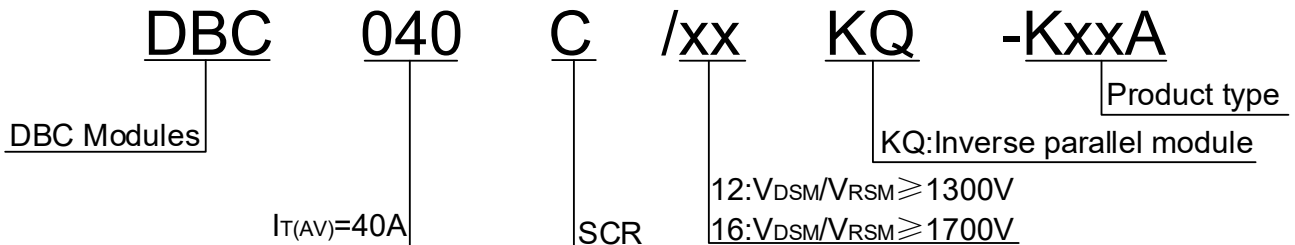
a. Hand soldering iron welding	
Soldering temperature	≤260°C
Soldering time	≤10s
b. Wave soldering (see figure at right)	
Preheating temperature	≤125°C
Preheating time	≤100s
Soldering temperature	≤260°C
Soldering time	≤10s



Working Conditions

- 1) No severe mechanical shock as impact and drop off in the process of transportation, storage and working of product.
- 2) Storage conditions
 - Temperature: 5~40°C
 - Relative humidity: ≤45%
 - Storage time: 3 days for the open package; 3 months for the closed package

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