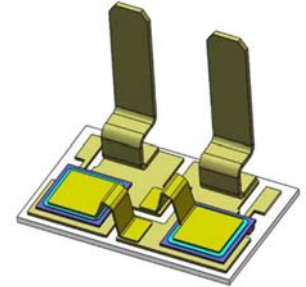


DBC030C/12KQ

Description

- 1) Components adopt vacuum welding to well control void and rated voltage up to 1200V.
- 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
Operating junction temperature range		T_J	-40~+125	$^{\circ}C$
Repetitive peak off-state voltage	$T_J=25^{\circ}C$	V_{DRM}	1200	V
Repetitive peak reverse voltage	$T_J=25^{\circ}C$	V_{RRM}	1200	V
Non-repetitive peak off-state voltage	$T_J=25^{\circ}C$	V_{DSM}	1300	V
Non-repetitive peak reverse voltage	$T_J=25^{\circ}C$	V_{RSM}	1300	V
Average on-state current	$T_C=80^{\circ}C$	$I_{T(AV)}$	30	A
RMS on-state current	$T_C=80^{\circ}C$	$I_{T(RMS)}$	45	A
Non-repetitive surge peak on-state current	$t_P=10ms$	I_{TSM}	600	A
I^2t value for fusing	$t_P=10ms$	I^2t	1800	A^2s
Critical rate of rise of on-state current	$I_G=2I_{GT}$	di/dt	50	$A/\mu s$

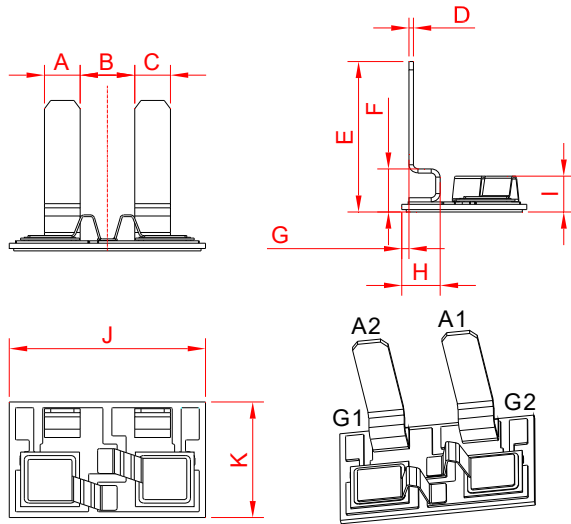
Electrical Characteristics (Packaged into modules, unless otherwise specified, $T_{CASE}=25^{\circ}C$)

Parameter	Test Conditions	Symbol	Values	Unit
Peak on-state voltage	$I_{TM}=90A, t_P=380\mu s$	V_{TM}	≤ 1.8	V
Repetitive peak off-state current	$V_D=V_{DRM}$ $T_C=25^{\circ}C$	I_{DRM1}	≤ 50	μA
	$T_C=125^{\circ}C$	I_{DRM2}	≤ 8	mA

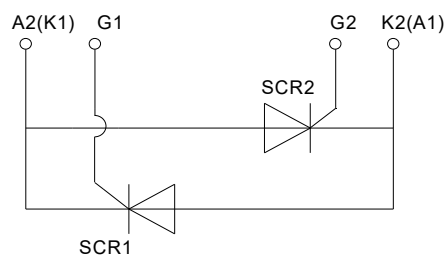
Repetitive peak reverse current	$V_R = V_{RRM}$ $T_C = 25^\circ\text{C}$ $T_C = 125^\circ\text{C}$	I_{RRM1} I_{RRM2}	≤ 50 ≤ 8	μA mA
Triggering gate current	$V_D = 12\text{V}$ $R_L = 33\Omega$	I_{GT}	10-80	mA
Latching current	$I_G = 1.2 I_{GT}$	I_L	≤ 250	mA
Holding current	$I_T = 500\text{mA}$	I_H	≤ 150	mA
Triggering gate voltage	$V_D = 12\text{V}$ $R_L = 33\Omega$	V_{GT}	≤ 1.5	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	$V_D = 2/3 V_{DRM}$ $T_J = 125^\circ\text{C}$ Gate Open	dv/dt	≥ 1000	V/ μs

Mechanical Characteristics

Chip size	5.88mm×5.88mm
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.

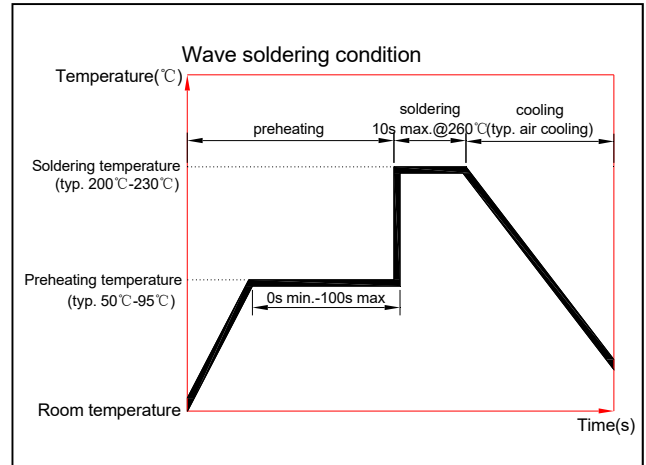

DBC030C/12KQ

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	4.3	0.146	0.157	0.169
D	0.3	0.5	0.7	0.012	0.020	0.028
E			19.2			0.756
F			6.2			0.244
G	0.3	0.8	1.3	0.012	0.031	0.051
H	3.8	4.3	4.8	0.150	0.169	0.189
I			6	0.000	0.000	0.236
J	21.7	22	22.3	0.854	0.866	0.878
K	13.7	14	14.3	0.539	0.551	0.563


symbol

Soldering Process Requirements

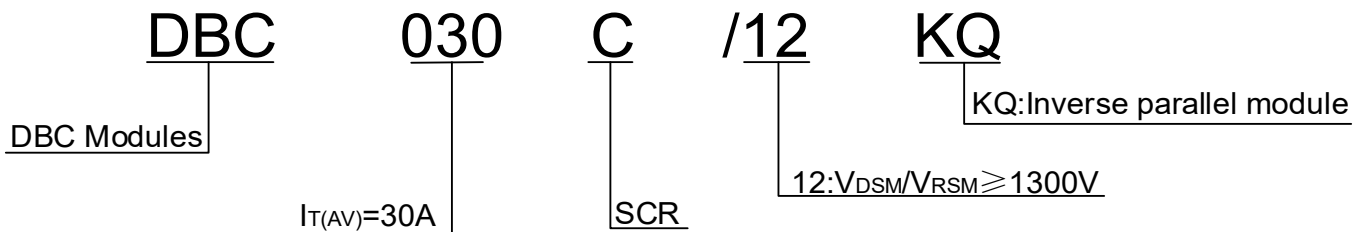
a. Hand soldering iron welding	
Soldering temperature	≤260°C
Soldering time	≤10s
b. Wave soldering (see figure at right)	
Preheating temperature	≤125°C
Preheating time	≤100s
Soldering temperature	≤260°C
Soldering time	≤10s



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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