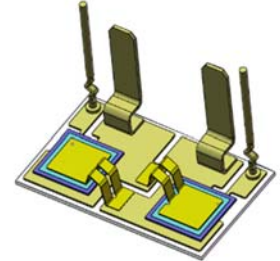


# DBC056C/xxKQ-KGxC

## 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	$T_C=80^{\circ}C$	$I_{T(AV)}$	56		A
RMS on-state current	$T_C=80^{\circ}C$	$I_{T(RMS)}$	90		A
Non-repetitive surge peak on-state current	$t_p=10ms$	$I_{TSM}$	1120		A
$I^2t$ value for fusing	$t_p=10ms$	$I^2t$	6200		$A^2s$
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	$I_{TM}=168A, t_p=380\mu s$	$V_{TM}$	$\leq 1.8$	V
Repetitive peak off-state current	$V_D=V_{DRM}$	$I_{DRM1}$	$\leq 50$	$\mu A$
	$T_C=25^{\circ}C$		$\leq 10$	mA
	$T_C=125^{\circ}C$	$I_{DRM2}$		

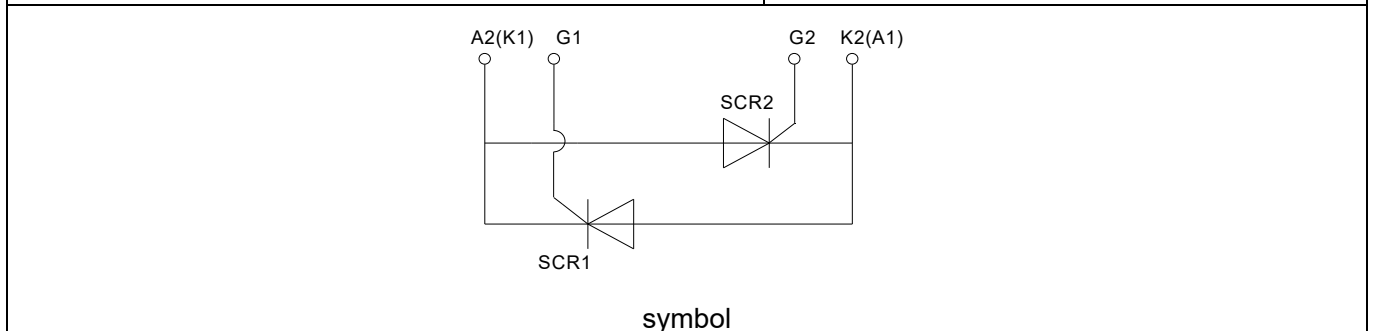
Repetitive peak reverse current	$V_R=V_{RRM}$ $T_C=25^\circ\text{C}$ $T_C=125^\circ\text{C}$	$I_{RRM1}$ $I_{RRM2}$	$\leq 50$ $\leq 10$	$\mu\text{A}$ $\text{mA}$
Triggering gate current	$V_D=12\text{V}$ $R_L=30\Omega$	$I_{GT}$	10-80	mA
Latching current	$I_G=1.2 I_{GT}$	$I_L$	$\leq 200$	mA
Holding current	$I_T=1\text{A}$	$I_H$	$\leq 150$	mA
Triggering gate voltage	$V_D=12\text{V}$ $R_L=30\Omega$	$V_{GT}$	$\leq 1.5$	V
Non triggering gate voltage	$V_D=V_{DRM}$ $T_J=125^\circ\text{C}$	$V_{GD}$	$\geq 0.25$	V
Critical rate of rise of voltage	$V_D=2/3V_{DRM}$ $T_J=125^\circ\text{C}$ Gate Open	dv/dt	$\geq 1000$	V/ $\mu\text{s}$

**Mechanical Characteristics**

Chip size	8.9mm×8.9mm
Module size	29.7mm×18.2mm
Terminal height	19.2mm
Solder composition and melting point of DBC	Solder composition: Pb92.5%Sn5%Ag2.5%; melting point>295°C.

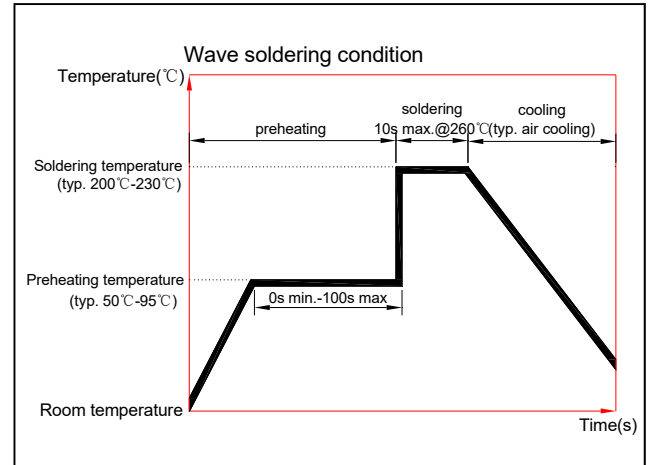
**DBC056C/xxKQ-KGxC**

Ref	Dimensions					
	Millimeters			Inches		
	Min	Typ	Max	Min	Typ	Max
A	3.7	4.0	4.3	0.146	0.157	0.169
B	10.3	10.8	11.3	0.406	0.425	0.445
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	0.4	0.9	1.4	0.016	0.035	0.055
J	3.9	4.4	4.9	0.154	0.173	0.193
K			6.0			0.236
L			6.2			0.244
M	29.4	29.7	30	1.157	1.169	1.181
N	17.9	18.2	18.5	0.705	0.717	0.728
O	1.6	2.1	2.6	0.063	0.083	0.102
P	25.1	25.6	26.1	0.988	1.008	1.028



**Soldering Process Requirements**

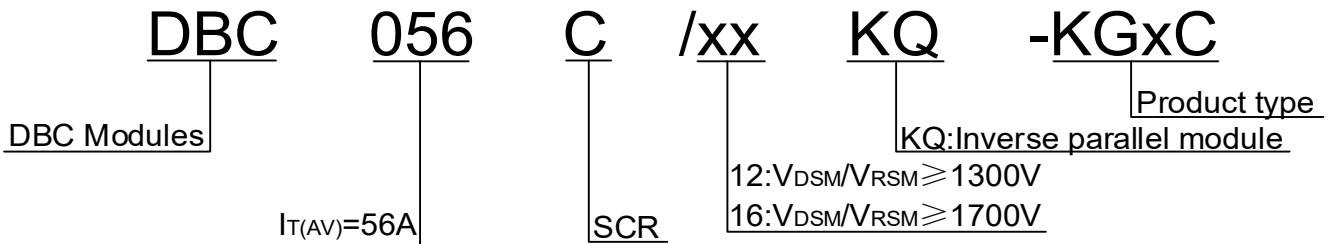
<b>a. Hand soldering iron welding</b>	
Soldering temperature	≤260°C
Soldering time	≤10s
<b>b. Wave soldering (see figure at right)</b>	
Preheating temperature	≤125°C
Preheating time	≤100s
Soldering temperature	≤260°C
Soldering time	≤10s



**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

**Ordering Information**



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