BCB70A

Silicon Control Rectifiers

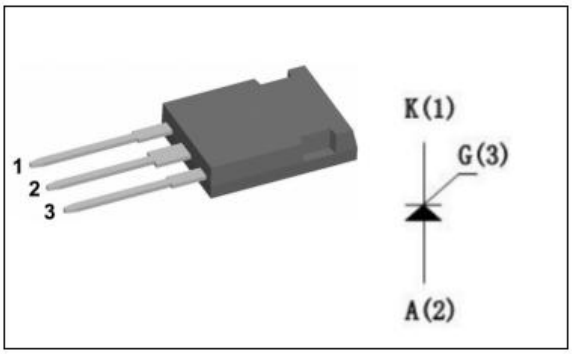
●Feature and Application

Features:

-Single side grooving technology with independent intellectual property rights, table glass passivation technology;

-Multi-layer metallized electrode;

-High blocking voltage and high temperature stability



Applications:

Vacuum cleaners, power tools and other motor speed controllers; Solid state relays; Heating controllers (temperature regulation); And other phase control circuits.

●Characteristics

Table 1. Absolute maximum ratings (T_{VJ}= 25℃ unless otherwise stated)

Symbol	Parameter and test conditions			value	Unit
$I_{T(AV)}$	On state average current Tc=115℃ T_{VJ}=150℃			70	A
$I_{T(RMS)}$	RMS on-state current (full sine wave) Tc=115℃			126	A
I_{TSM}	Non repetitive surge peak on-state current (full cycle, T_{VJ} initial = 25℃)	t=10ms f=50HZ	T_{VJ}=45℃ V_R=0	900	A
I^2t	I^2t value for fusing	t=10ms f=50HZ	T_{VJ}=45℃ V_R=0	4050	A^2S

$(di/dt)_{cr}$	Critical rate of rise of on-state current IG = 2 x IGT, tr ≤ 100 ns	T_{VJ}=150℃;f=50Hz	150	A/us
$V_{RRM/DRM}$	max. repetitive reverse/forward blocking voltage	T_{VJ}=25℃	1200	V
I_{GM}	Peak gate current	t_p=20us T_{VJ}=125℃	8	A
V_{RGM}	Peak reverse gate voltage		5	V
$P_{G(AV)}$	Average gate power dissipation	Tc=150℃	0.5	W
T_{stg} T_{VJ}	Storage junction temperature range Operating junction temperature range		−40to+150 −40to+125	℃

Table 2. Dynamic electrical characteristics (T_{VJ}=25℃, unless otherwise specified)

Symbol	Parameter and test conditions			value	Unit
I_{GT}	V_D=6V	25℃	MAX	60	mA
		-40℃		122	
V_{GT}		25℃	MAX	1.5	V
		-40℃		1.6	
V_{GD}	V_D=⅔ V_{DRM} T_{VJ} = 150℃		MAX	0.2	V
I_{GD}				5	mA
I_H	V_D = 6V $R_{GK=\infty}$ T_{VJ} = 25℃		MAX	100	mA
I_L	t_p=10us I_G=0,3A; di_G/dt =0,3A/μs; T_{VJ} = 25℃		MAX	150	mA
t_{gd}	V_D=1/2 V_{DRM} T_{VJ} =25℃ I_G=0.3； di_G/dt=0.3A/us		MAX	2	us

t_q	V_R=100V；I_T=80A；V=2/3V_{DRM} T_{VJ}=125℃ di/dt=20A/us dv/dt=20V/us t_p=200us	Typ	150	us
$(dv/dt)_{cr}$	V=2/3V_{DRM} $R_{GK=\infty}$ T_{VJ}=150℃	MAX	1000	V/us

Table 3. Static electrical characteristics

Symbol	Parameter and test conditions			value	Unit
V_{TM}	I_{TM}= 120A	T_{VJ}=25℃	MAX	1.60	V
V_{T0}	Threshold on-state voltage	T_{VJ}=150℃	MAX	0.88	V
Rd	Dynamic resistance	T_{VJ}=125℃	MAX	6.4	mΩ
$I_{R/D}$	$V_{R/D}$=1200V	T_{VJ}=25℃	MAX	50	uA
	$V_{R/D}$=1200V	T_{VJ}=125℃		5	mA
$R_{th(j-c)}$	Junction to ambient	BCB		0.6	℃/W

●BCB80A Typical Characteristic Curves:

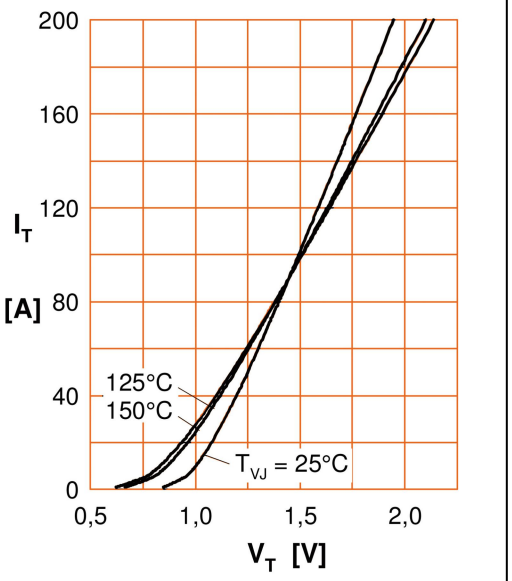


Fig. 1 Forward characteristics

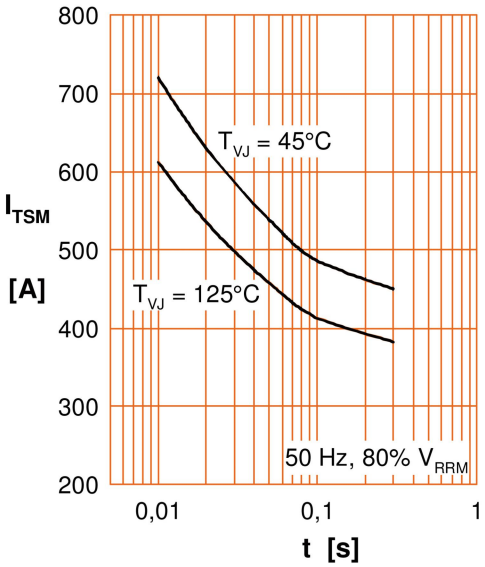


Fig. 2 Surge overload current

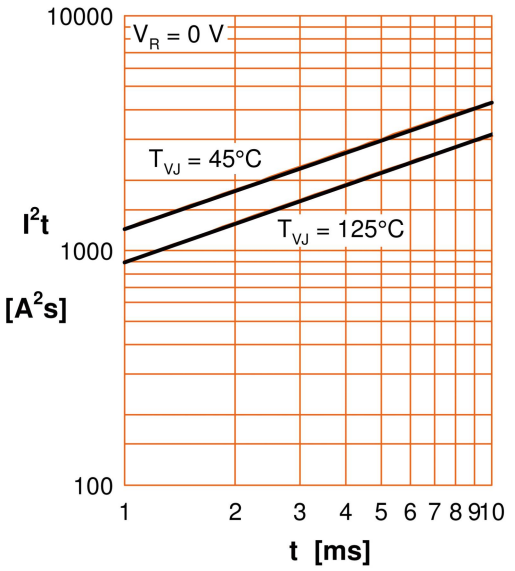


Fig. 3 I^2t versus time (1-10 ms)

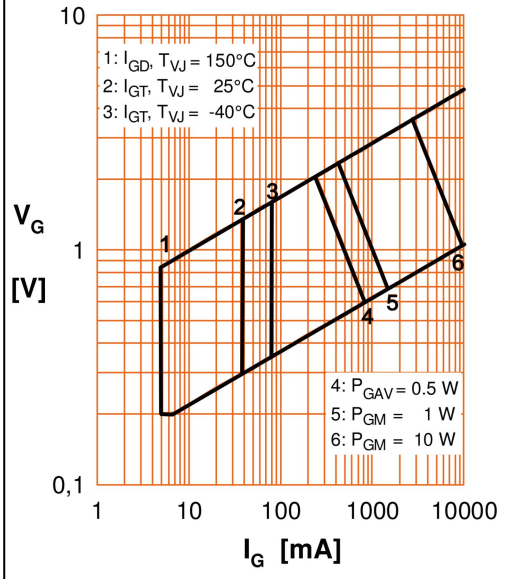


Fig. 4 Gate trigger characteristics

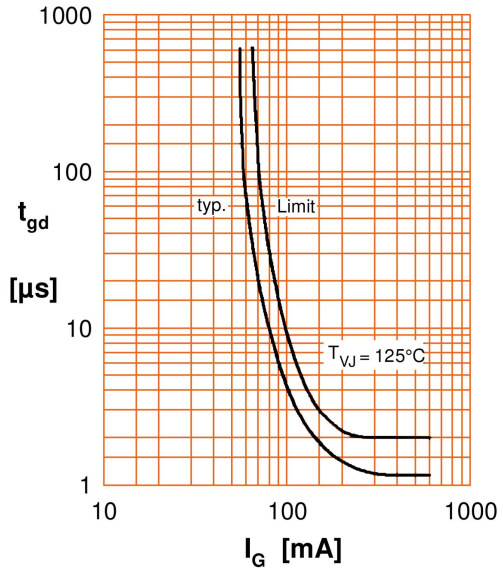


Fig. 5 Gate controlled delay time

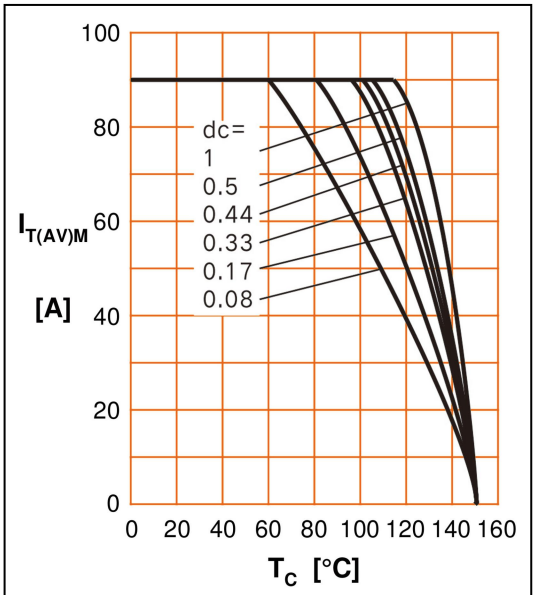


Fig. 6 Max. forward current at case temperature

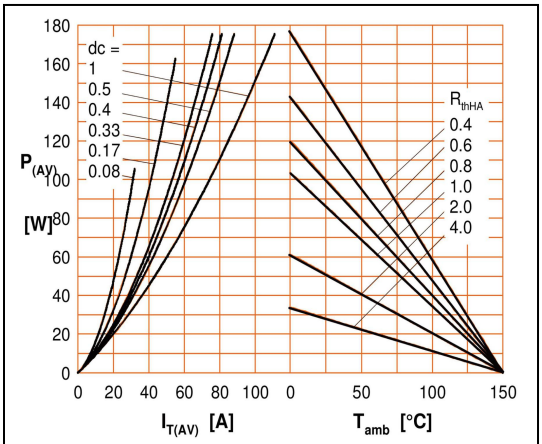


Fig. 7a Power dissipation versus direct output current
Fig. 7b and ambient temperature

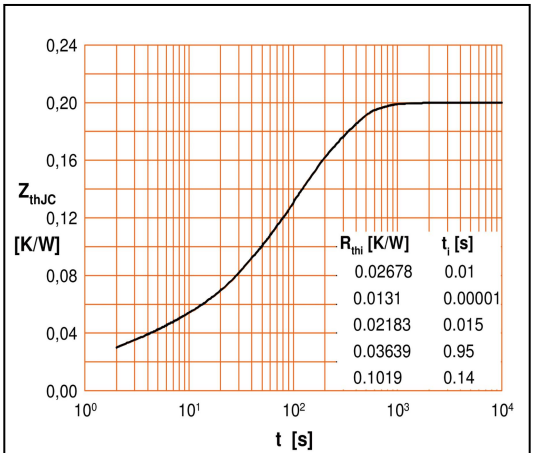
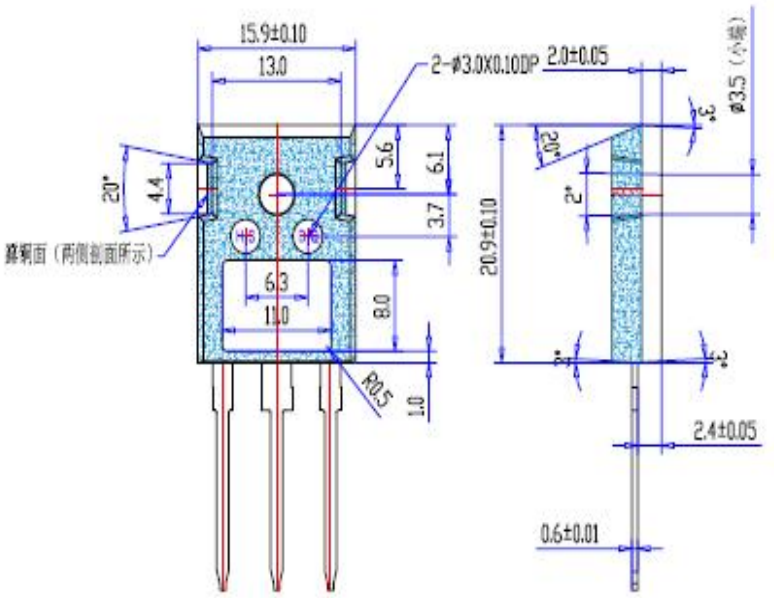


Fig. 8 Transient thermal impedance

● TO-247 Dimensional drawing:

Unit：mm（±0.1）



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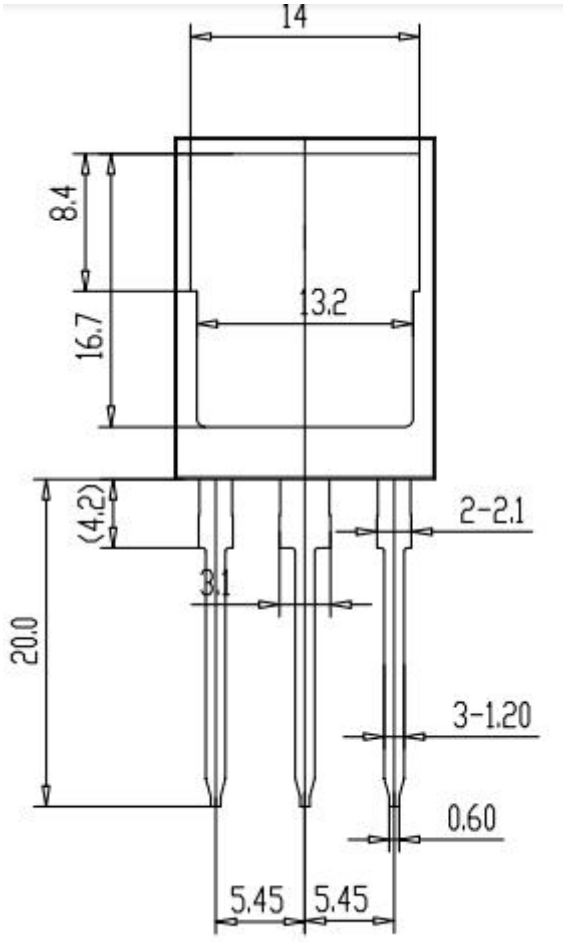

Ordering Information

Packge	Packing	Box Size L×W×H(mm)	Quatity(pcs/box)	Carton Size L×W×H(mm)	Quatity(pcs/carton)
TO-247	30pcs/Tube	570×155×50	450	580×340×125	1800