ShinDengen

KC5FB40H

Thyristors
400V, 5A

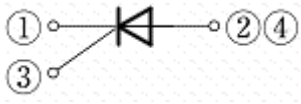
Feature

- Small SMD
- tq guaranteed
- High Sensitivity
- Pb free terminal
- RoHS:Yes

OUTLINE

Package (House Name): FB
Package (JEDEC Code): TO-252AA

Equivalent circuit



Absolute Maximum Ratings (unless otherwise specified : Tc=25℃)

Item	Symbol	Conditions	Ratings	Unit
Storage temperrature	T_{stg}		-55 to 150	℃
Junction temperature	Tj		-40 to 125	℃
non-Repetitive peak off-state voltage	V_{DSM}	RGK=1KΩ	500	V
non-Repetitive peak reverse voltage	V_{RSM}	RGK=1KΩ	500	V
Repetitive peak off-state voltage	V_{DRM}	RGK=1KΩ	400	V
Repetitive peak reverse voltage	V_{RRM}	RGK=1KΩ	400	V
Average on-state Current	I_T(AV)	Tc=101℃, 50Hz sine wave, θ=180°	5	A
On-state current (r.m.s.)	I_T(RMS)	Tc=101℃, 50Hz sine wave, θ=180°	8	A
Peak surge on-state current	I_{TSM}	Tj=25℃, 50Hz sine wave, θ=180°, Non repetitive	65	A
Current squared time	I^2t	Tj=25℃, 1ms≦t≦10ms, Non repetitive	21	A^2s
Peak gate dissipation	P_{FGM}	f≧50Hz, Duty≦10%	2	W
Average gate dissipation	P_{FG}(AV)		0.2	W
Peak gate forward current	I_{FGM}	f=50Hz, Duty≦10%	1	A
Peak gate reverse voltage	V_{RGM}		6	V
Critical rate of rise of on-state current	di/dt		50	A/μs

※ :See the original Specifications

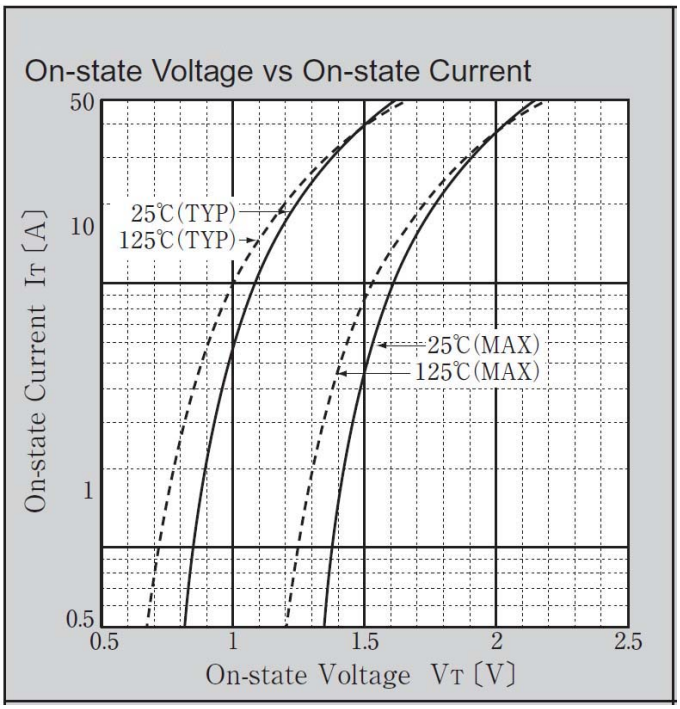
Electrical Characteristics (unless otherwise specified : Tc=25°C)

Item	Symbol	Conditions	Ratings			Unit
			MIN	TYP	MAX	
Repetitive off-state current	I_{DRM}	VD=400V, RGK=1kΩ, Pulse measurement			100	μA
Repetitive reverse current	I_{RRM}	VR=400V , RGK=1kΩ, Pulse measurement			100	μA
On-state voltage	V_{TM}	ITM=10A, Pulse measurement			1.6	V
Gate trigger voltage	V_{GT}	VD=6V, RL=100Ω			0.8	V
Gate trigger current	I_{GT}	VD=6V, RL=100Ω			200	μA
Gate non-trigger voltage	V_{GD}	Tj=125°C, VD=1/2VDRM, RGK=1kΩ	0.2			V
Holding Current	I_H	ITM=10A, RGK=1kΩ		1		mA
Critical rate of rise of off-state voltage	dVD/dt	Tj=125°C, VD=2/3VDRM, RGK=1kΩ		1.75		V/μs
Turn-off time	tq	Tj=125°C, IT=3A, VR≧25V, di/dt=-15A/μs, VD=2/3VDRM, RGK=1kΩ		45		μs
Thermal Resistance	Rth(j-c)	Junction to case			3	°C/W

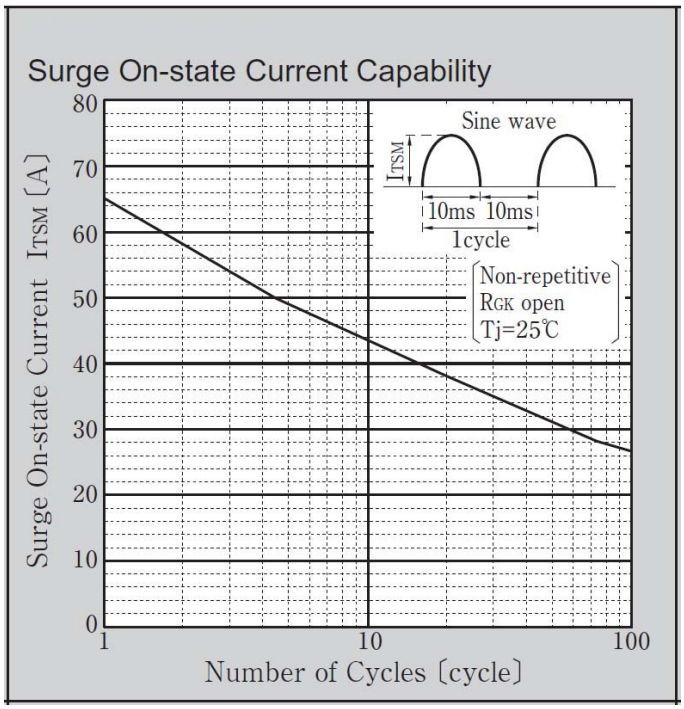
※ :See the original Specifications

CHARACTERISTIC DIAGRAMS

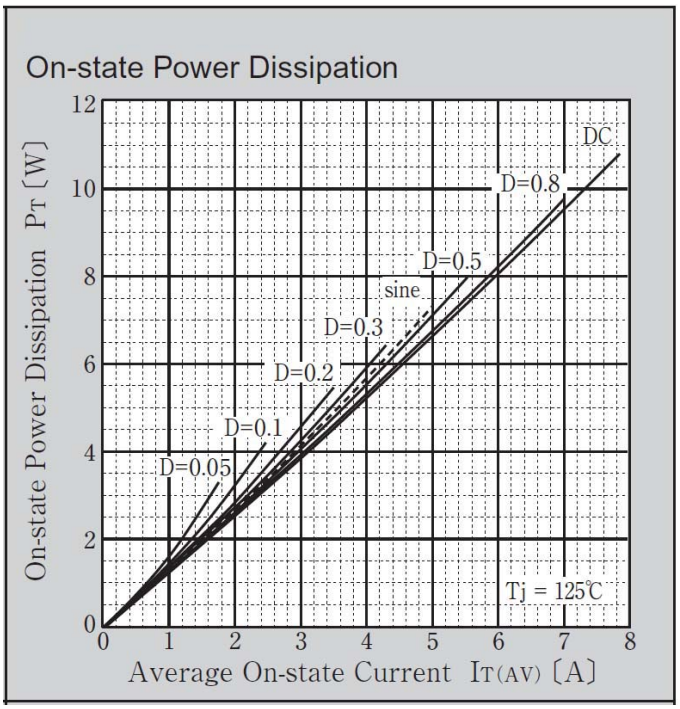
On-state Voltage vs On-state Current



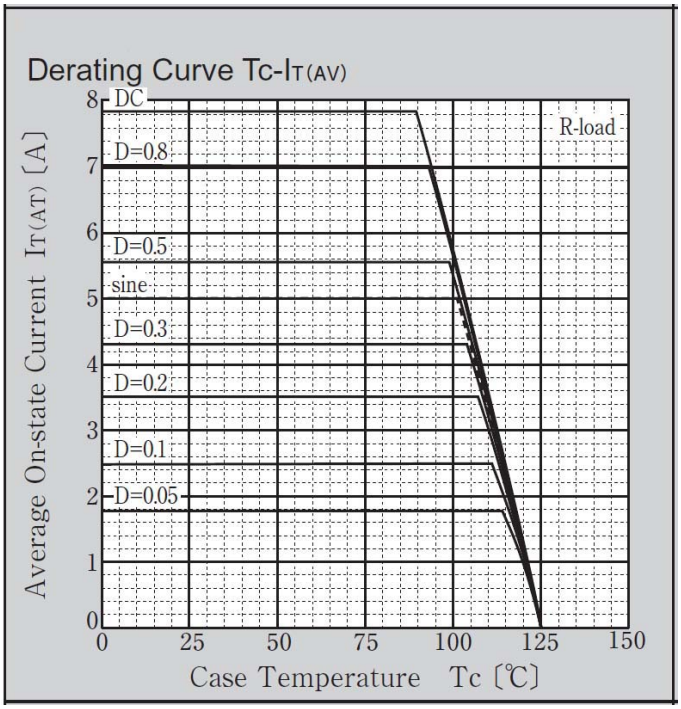
Surge On-state Current Capability



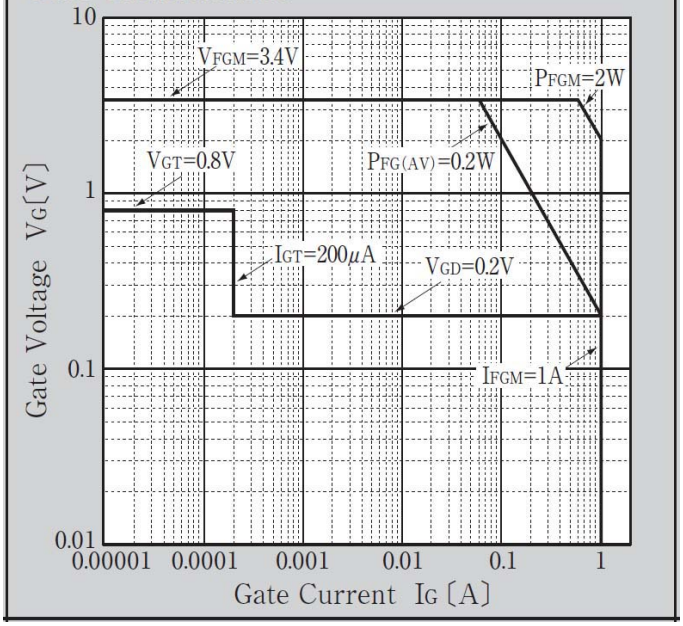
On-state Power Dissipation



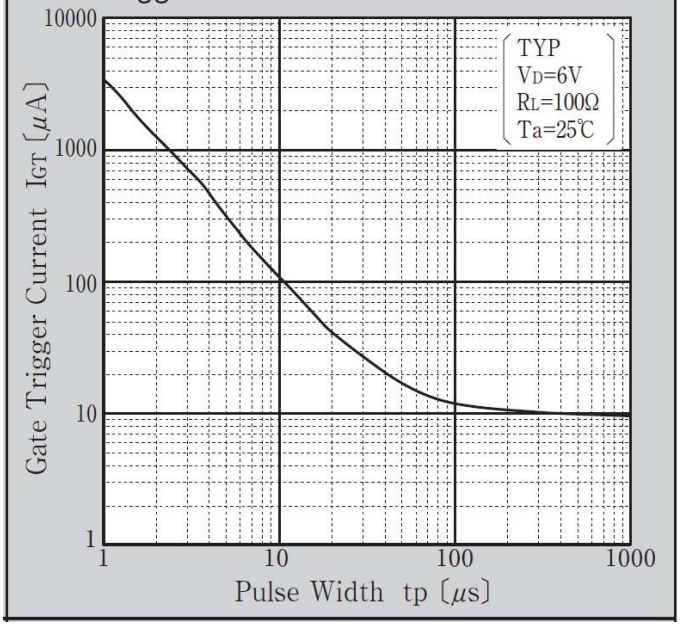
Derating Curve Tc-IT(AV)



Gate Characteristic



Gate Trigger Current vs Pulse Width



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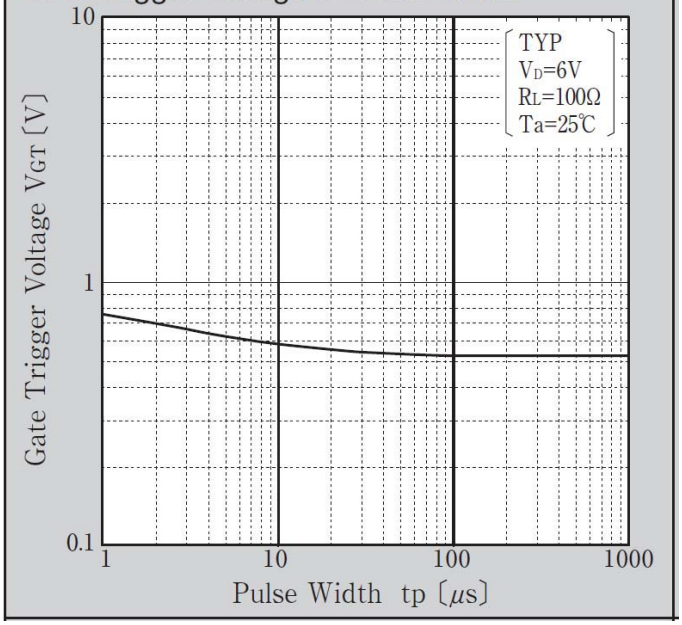
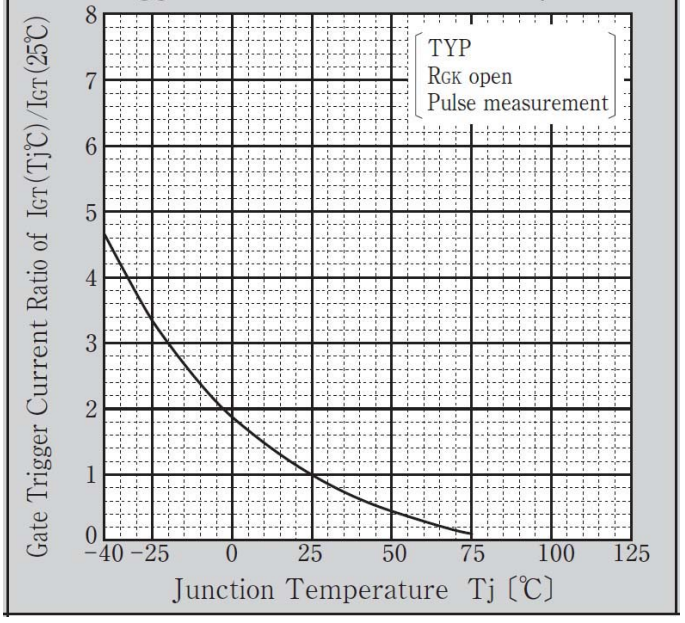
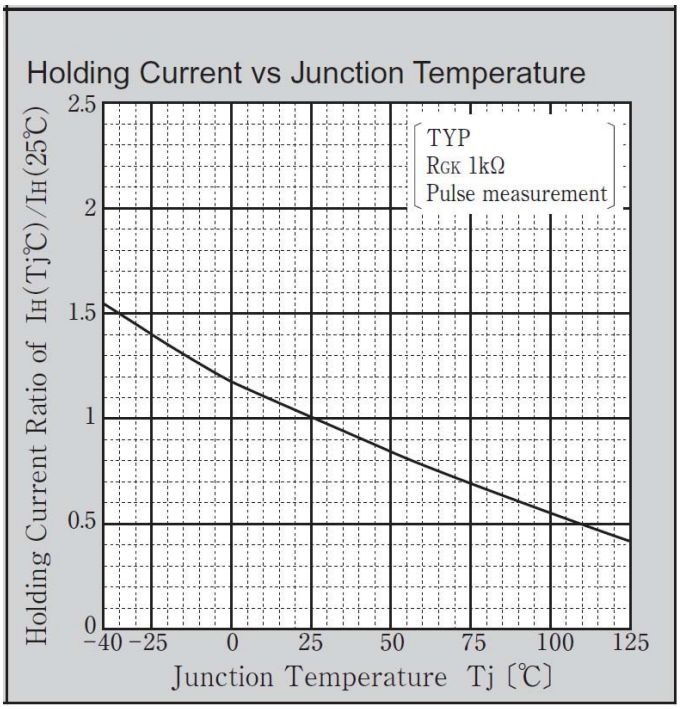
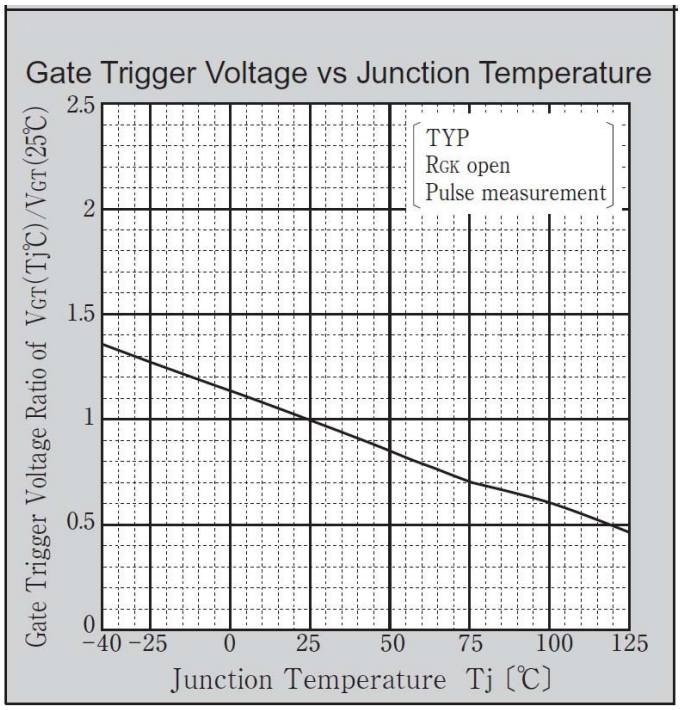


Gate Trigger Current vs Junction Temperature




Holding Current vs Junction Temperature
Holding Current Ratio of IH(Tj℃)/IH(25℃)
2.5
2
1.5
1
0.5
0
−40 −25 0 25 50 75 100 125
Junction Temperature Tj〔℃〕
TYP
RGK 1kΩ
Pulse measurement

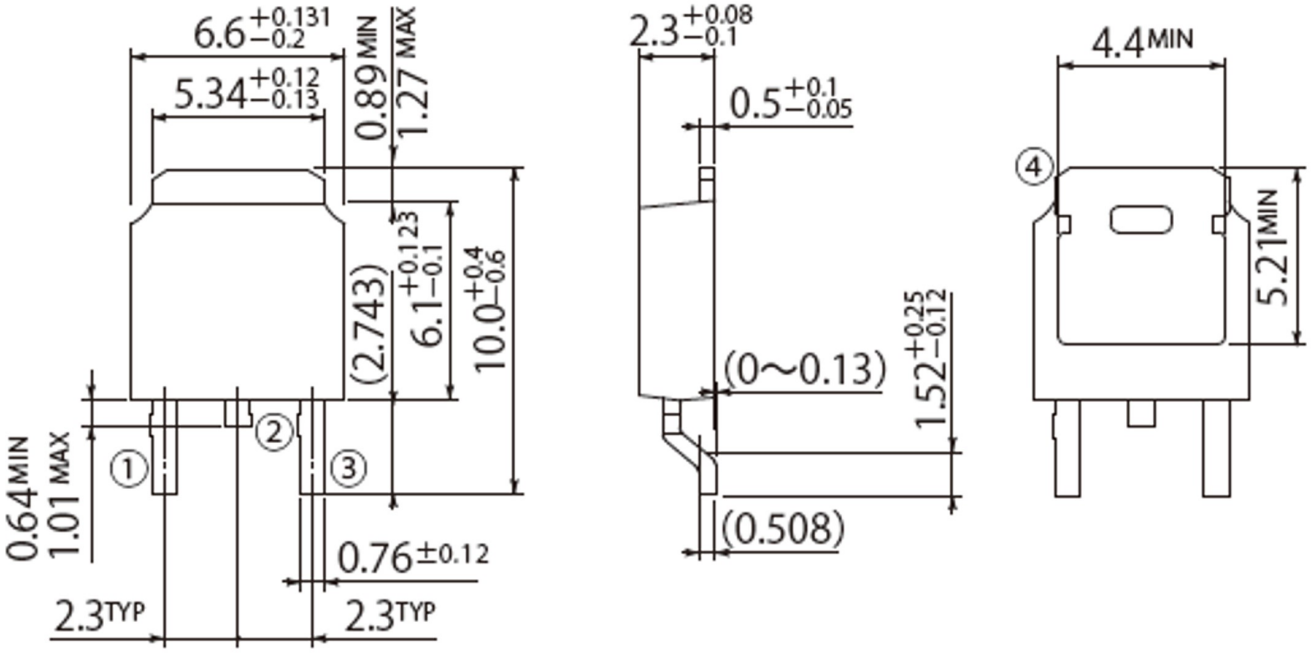

Gate Trigger Voltage vs Junction Temperature
Gate Trigger Voltage Ratio of VGT(Tj℃)/VGT(25℃)
2.5
2
1.5
1
0.5
0
−40 −25 0 25 50 75 100 125
Junction Temperature Tj〔℃〕
TYP
RGK open
Pulse measurement

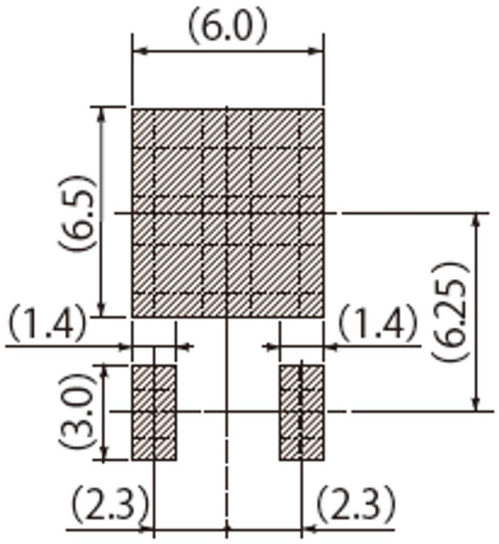
Outline Dimensions

unit:mm

G2

JEDEC Code	TO-252AA
JEITA Code	–
House Name	FB





Referential Soldering Pad

Notes

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   Computers, office automation and other office equipment, communication terminals, test and measurement equipment, audio/visual equipment, amusement equipment, consumer electronics, machine tools, personal electronic equipment, industrial equipment, etc.
   【Special applications】
   Transportation equipment (vehicles, ships, etc.), trunk-line communication equipment, traffic signal control systems, anti-disaster/crime systems, safety equipment, medical equipment, etc.
   【Specific applications】
   Nuclear reactor control systems, aircraft, aerospace equipment, submarine repeaters, life support equipment and systems, etc.
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