CR6AM

MEDIUM POWER, GENERAL USE
LEAD-MOUNTED, GLASS-PASSIVATION TYPE

DESCRIPTION

Mitsubishi type CR6AM-1~12 are glass-passivated junction type thyristors for use in low power and high voltage control.
These devices are molded silicon plastic types.
The maximum average on-state current is 6A (Tc = 101 °C) and repetitive peak off-state voltage is 50~600V.

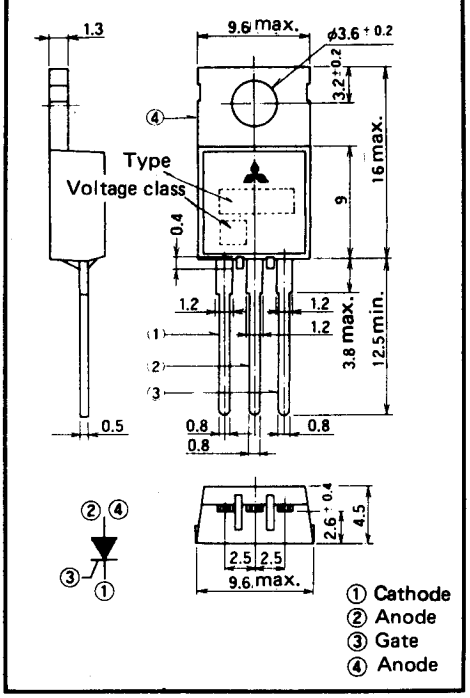
FEATURES

- High reliability due to glass-passivation.
- High surge current. I_{TSM}=200A.
- High off-state and reverse voltage up to 600V.
- Easy application for printed circuits.

APPLICATIONS

Motor control, heater control, strobo flasher.

OUTLINE DRAWING Dimension: mm



ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Voltage class						Unit
		2	4	6	8	10	12	
V_{RRM}	Repetitive peak reverse voltage	100	200	300	400	500	600	V
V_{RSM}	Non-repetitive peak reverse voltage	150	300	400	500	600	720	V
$V_{R(DC)}$	DC reverse voltage	80	160	240	320	400	480	V
V_{DRM}	Repetitive peak off-state voltage	100	200	300	400	500	600	V
$V_{D(DC)}$	DC off-state voltage	80	160	240	320	400	480	V

Symbol	Parameter	Condition	Limit	Unit
$I_{T(RMS)}$	R.M.S. on-state current		9.42	A
$I_{T(AV)}$	Average on-state current	Single phase, half wave 180° conduction, T_C=101°C	6.0	A
I_{TSM}	Surge (Non-repetitive) on-state current	Halt cycle 60Hz Peak value	200	A
I^2t	I^2t for fusing	Value corresponding to 1 cycle of half wave 60Hz, Surge on-state current	170	A^2s
P_{GM}	Peak gate power dissipation		5.0	W
$P_{G(AV)}$	Average gate power dissipation		0.5	W
V_{FGM}	Peak gate forward voltage		6	V
V_{RGM}	Peak gate reverse voltage		6	V
I_{FGM}	Peak gate current		2	A
T_j	Operating junction temperature		−40~+125	℃
Tstg	Storage temperature		−40~+125	℃
—	Weight	Typical value	2.0	g

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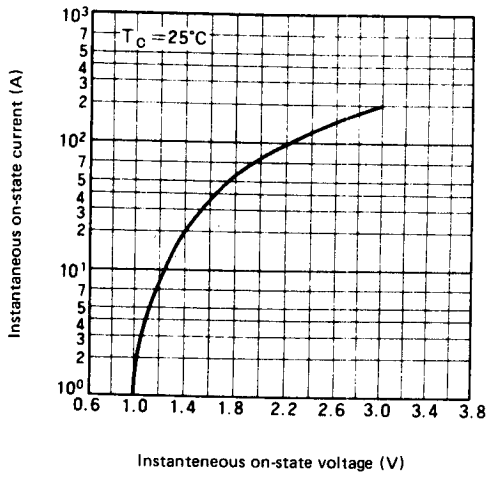
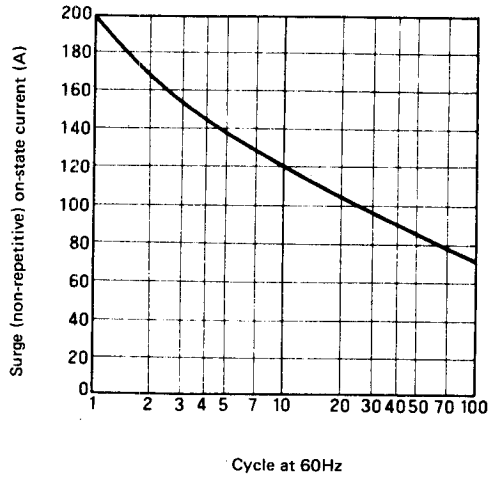
ELECTRICAL CHARACTERISTICS

Symbol	Parameter	Test condition	CR6AM			Unit
			Min.	Typ.	Max.	
I_{RRM}	Peak reverse current	T_j = 125°C, V_{RRM} applied			2.0	mA
I_{DRM}	Peak off-state current	T_j = 125°C, V_{DRM} applied			2.0	mA
V_{TM}	On-state voltage	T_C = 25°C, I_{TM} = 20A, instantaneouw value			1.4	V
V_{GT}	Gate trigger voltage	T_j = 25°C, V_D = 6V, I_T = 1A			1.5	V
V_{GD}	Gate non-trigger voltage	T_j = 125°C, V_D = 1/2V_{DRM}	0.1			V
I_{GT}	Gate trigger current	T_j = 25°C, V_D = 6V, I_T = 1A			30	mA
$R_{th(j-c)}$	Thermal resistance	Junction to case			1.8	°C/W

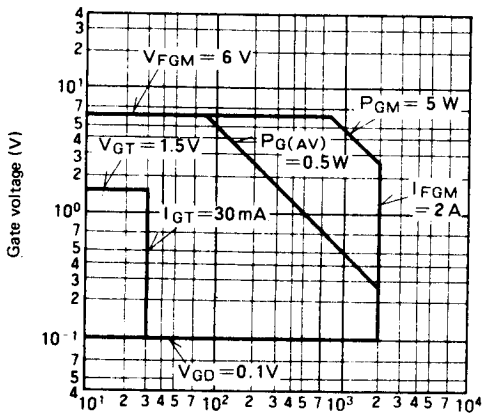
Maximum on-state characteristics



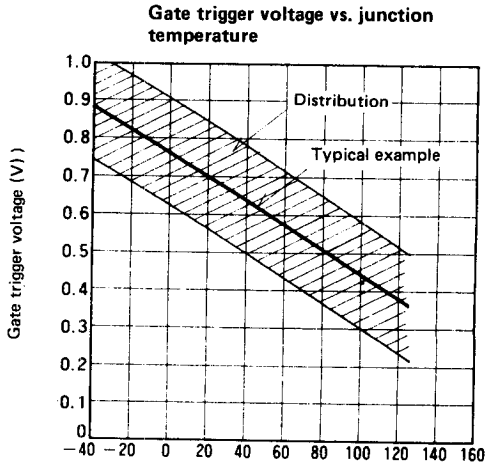
Rated surge on-state current



Gate characteristics



Gate trigger voltage vs. junction temperature



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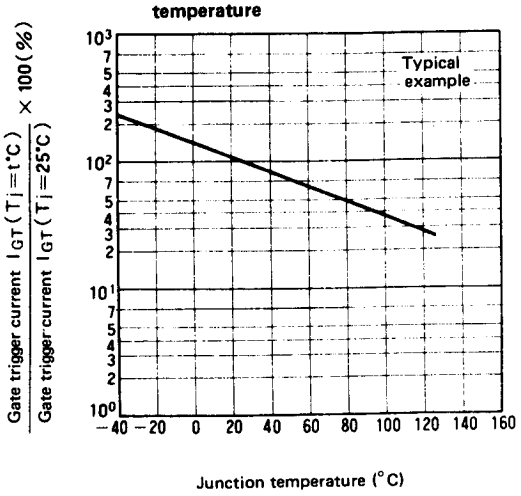
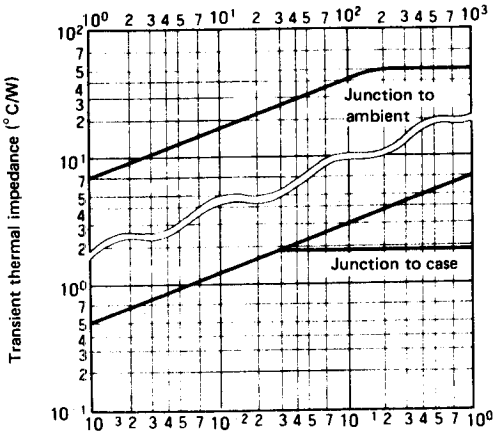
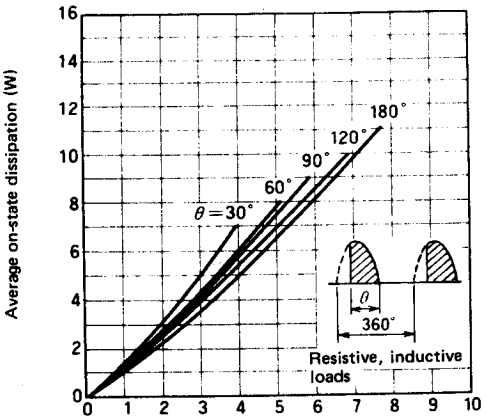
Gate trigger current vs. junction temperature



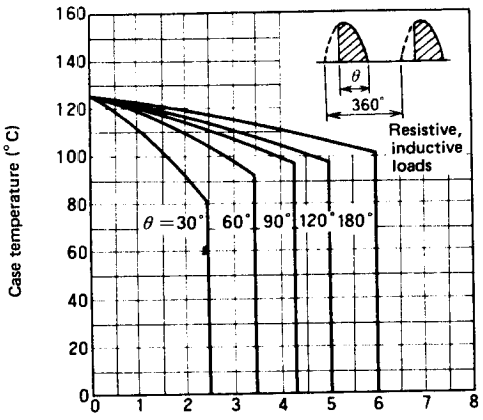
Maximum transient thermal impedance characteristics (Junction to case, junction to ambient)



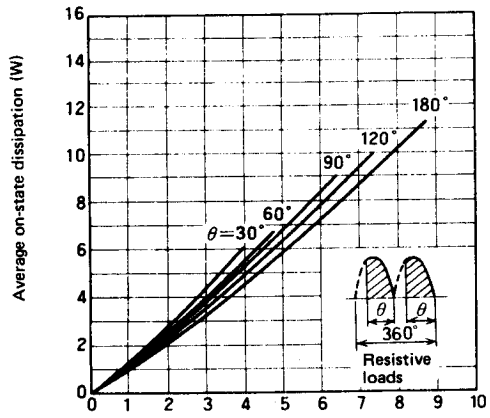
Maximum average power dissipation characteristics (Single-phase half-wave operation)



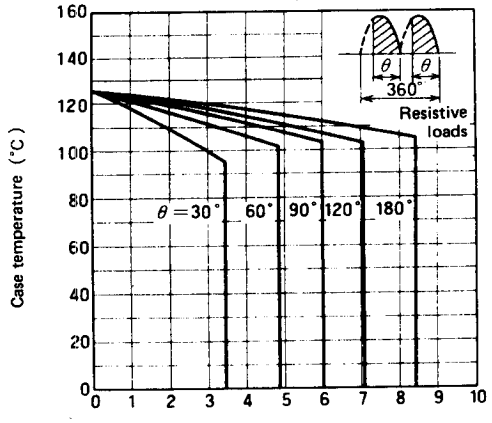
Allowable case temperature vs. average on-state current (Single-phase half-wave operation)



Maximum average power dissipation characteristics (Single-phase full-wave operation)



Allowable case temperature vs. average on-state current (Single-phase full-wave operation)



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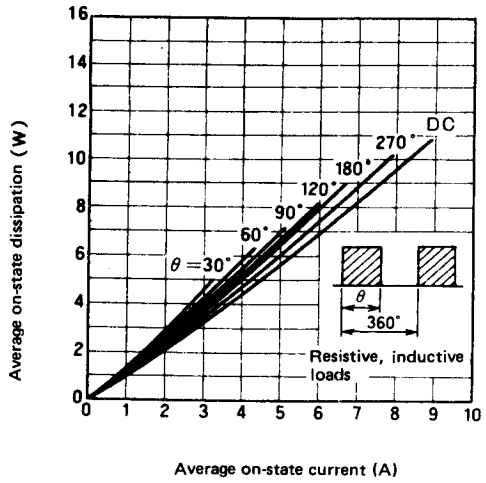
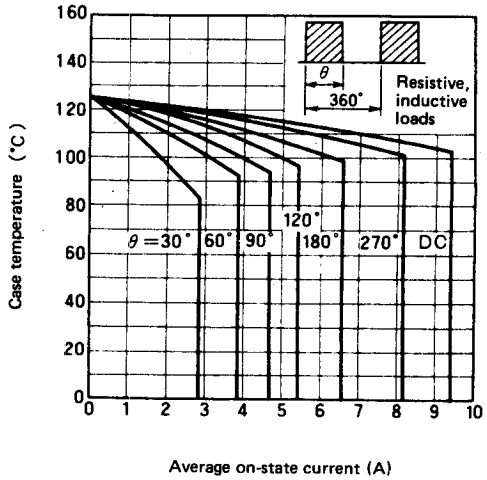
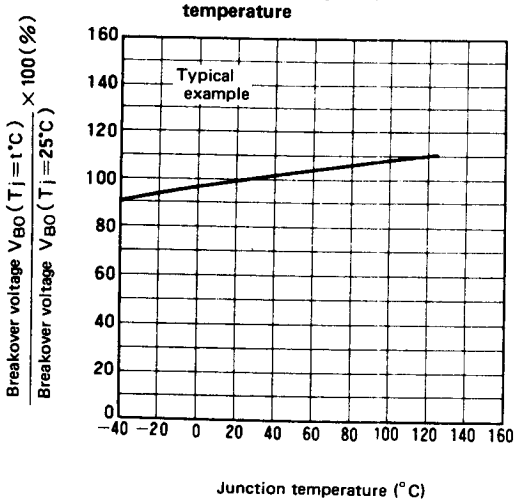
Maximum average power dissipation characteristics (Rectangular wave operation)



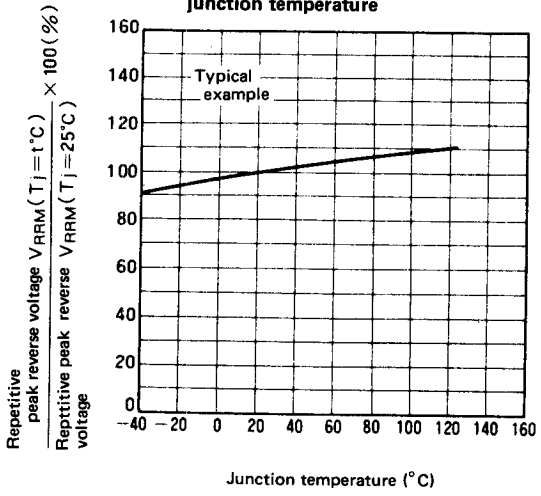
Allowable case temperature vs. average on-state current (Rectangular wave operation)



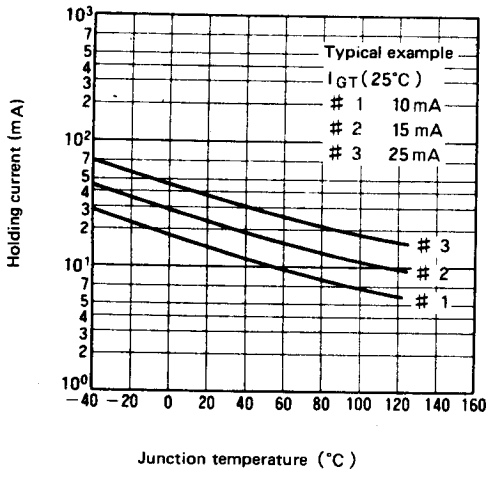
Breakover voltage vs. junction temperature



Repetitive peak reverse voltage vs. junction temperature



Holding current vs. junction temperature



Allowable peak on-state current vs. discharging capacitor