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捷多邦, 专业PCB打样工厂, 24小时加急出货

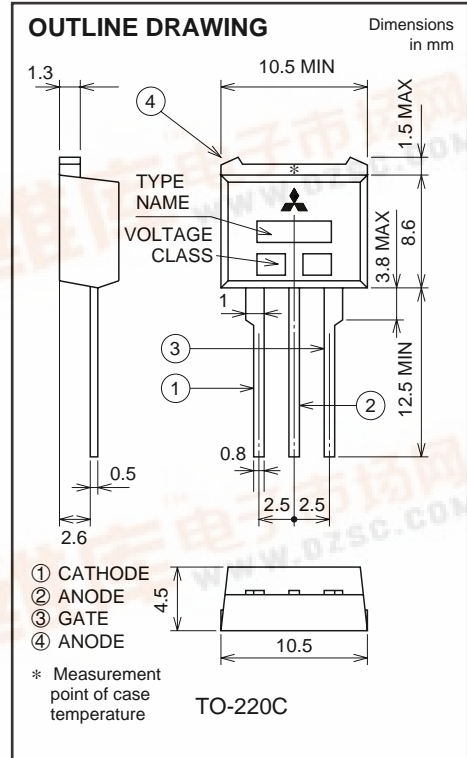
MITSUBISHI SEMICONDUCTOR (THYRISTOR)

# CR12BM

MEDIUM POWER USE  
NON-INSULATED TYPE, GLASS PASSIVATION TYPE

**CR12BM**

- $I_T$  (AV) ..... 12A
- $V_{DRM}$  ..... 400V/600V
- $I_{GT}$  ..... 30mA



## APPLICATION

Automatic strobe flasher

## MAXIMUM RATINGS

Symbol	Parameter	Voltage class		Unit
		8	12	
$V_{RRM}$	Repetitive peak reverse voltage	400	600	V
$V_{RSM}$	Non-repetitive peak reverse voltage	500	720	V
$V_R$ (DC)	DC reverse voltage	320	480	V
$V_{DRM}$	Repetitive peak off-state voltage	400	600	V
$V_D$ (DC)	DC off-state voltage	320	480	V

Symbol	Parameter	Conditions	Ratings	Unit
$I_T$ (RMS)	RMS on-state current		18.8	A
$I_T$ (AV)	Average on-state current	Commercial frequency, sine half wave, 180° conduction, $T_c=91^\circ\text{C}$	12.0	A
$I_{TSM}$	Surge on-state current	60Hz sine half wave 1 full cycle, peak value, non-repetitive	360	A
$I^2_t$	$I^2_t$ for fusing	Value corresponding to 1 cycle of half wave 60Hz, surge on-state current	544	$\text{A}^2\text{s}$
$P_{GM}$	Peak gate power dissipation		5	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		10	V
$I_{FGM}$	Peak gate forward current		2	A
$T_j$	Junction temperature		-40 ~ +125	$^\circ\text{C}$
$T_{stg}$	Storage temperature		-40 ~ +125	$^\circ\text{C}$
—	Weight	Typical value	1.5	g



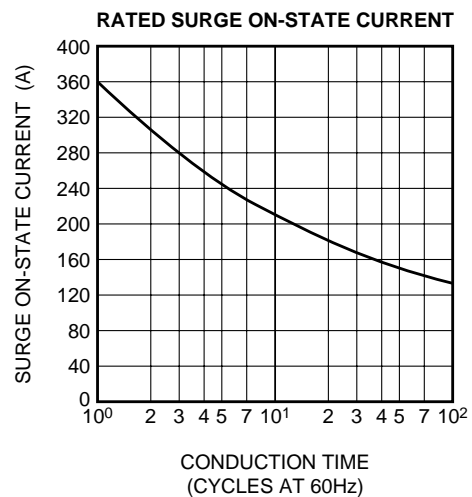
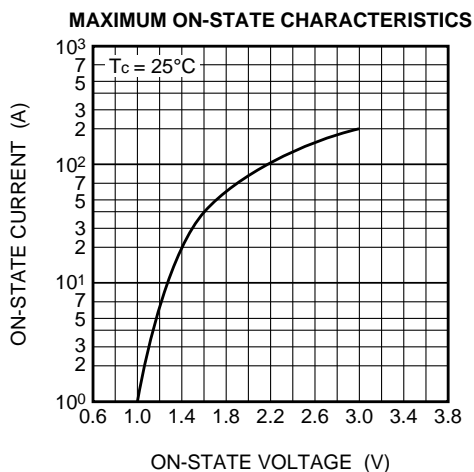
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## ELECTRICAL CHARACTERISTICS

Symbol	Parameter	Test conditions	Limits			Unit
			Min.	Typ.	Max.	
I <sub>RRM</sub>	Repetitive peak reverse current	T <sub>j</sub> =125°C, V <sub>DRM</sub> applied	—	—	2.0	mA
I <sub>DRM</sub>	Repetitive peak off-state current	T <sub>j</sub> =125°C, V <sub>DRM</sub> applied	—	—	2.0	mA
V <sub>TM</sub>	On-state voltage	T <sub>c</sub> =25°C, I <sub>TM</sub> =40A	—	—	1.6	V
V <sub>GT</sub>	Gate trigger voltage	T <sub>j</sub> =25°C, V <sub>D</sub> =6V, I <sub>T</sub> =1A	—	—	1.5	V
V <sub>GD</sub>	Gate non-trigger voltage	T <sub>j</sub> =125°C, V <sub>D</sub> =1/2V <sub>DRM</sub>	0.2	—	—	V
I <sub>GT</sub>	Gate trigger current	T <sub>j</sub> =25°C, V <sub>D</sub> =6V, I <sub>T</sub> =1A	—	—	30	mA
I <sub>H</sub>	Holding current	T <sub>j</sub> =25°C, V <sub>D</sub> =12V	—	15	—	mA
R <sub>th(j-c)</sub>	Thermal resistance	Junction to case	—	—	1.2	°C/W
R <sub>th(j-a)</sub>		Junction to ambient	—	—	70	

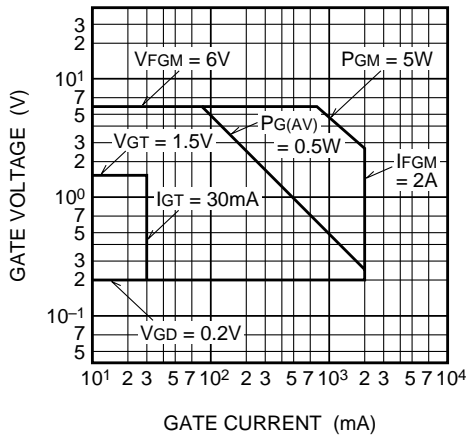
## PERFORMANCE CURVES



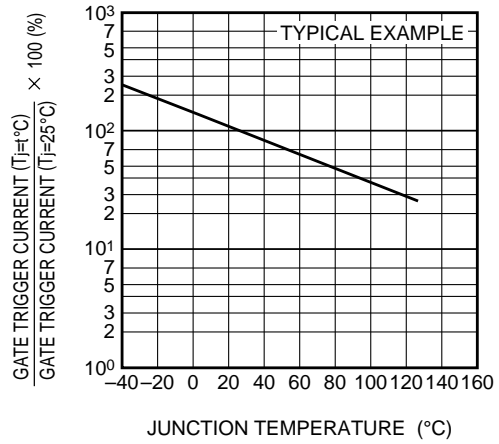
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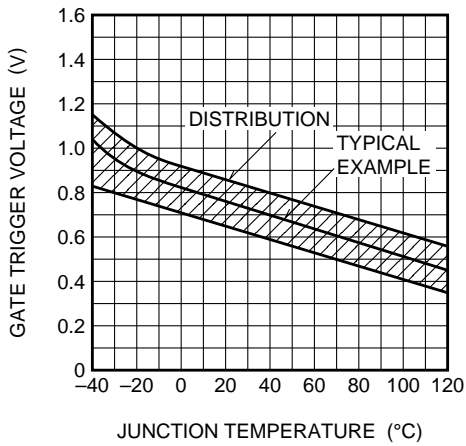
**GATE CHARACTERISTICS**



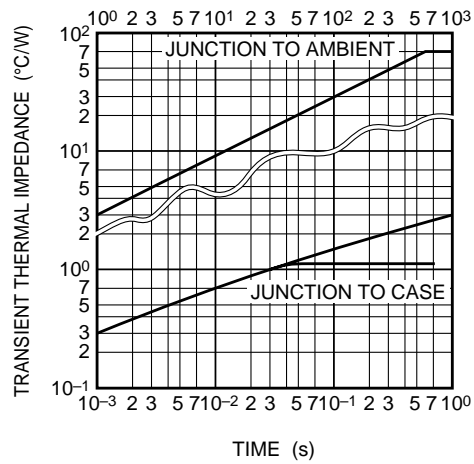
**GATE TRIGGER CURRENT VS. JUNCTION TEMPERATURE**



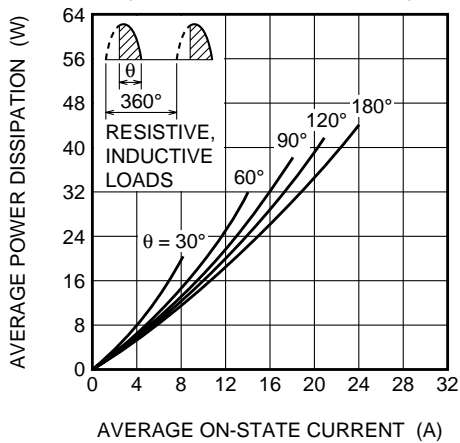
**GATE TRIGGER VOLTAGE VS. JUNCTION TEMPERATURE**



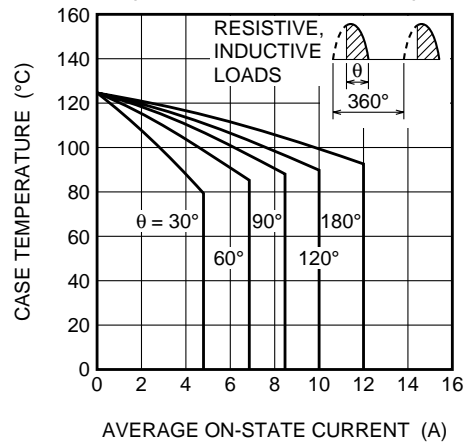
**MAXIMUM TRANSIENT THERMAL IMPEDANCE CHARACTERISTICS**



**MAXIMUM AVERAGE POWER DISSIPATION (SINGLE-PHASE HALF WAVE)**



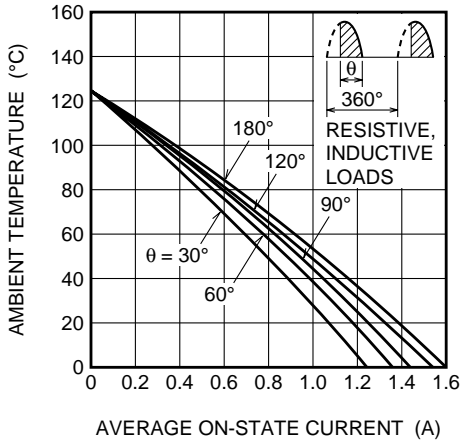
**ALLOWABLE CASE TEMPERATURE VS. AVERAGE ON-STATE CURRENT (SINGLE-PHASE HALF WAVE)**



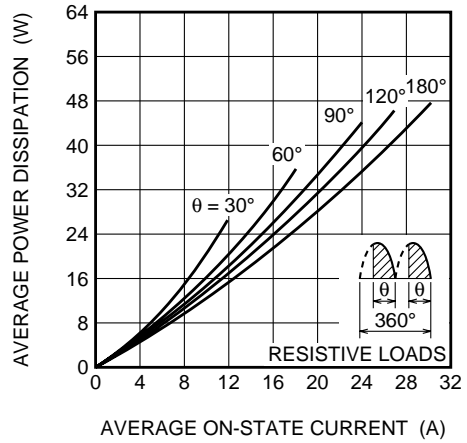
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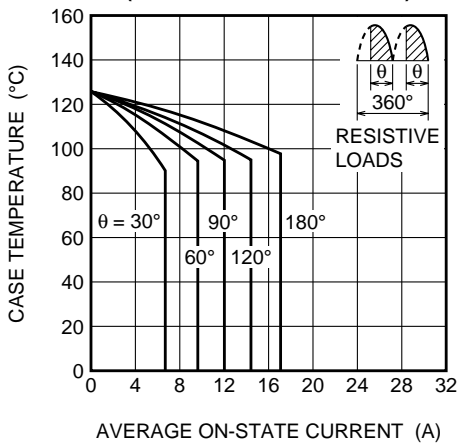
**ALLOWABLE AMBIENT TEMPERATURE VS. AVERAGE ON-STATE CURRENT (SINGLE-PHASE HALF WAVE)**



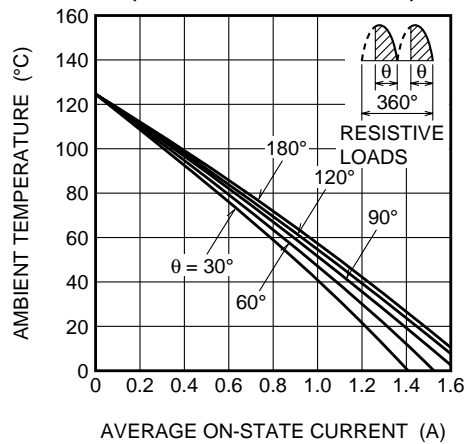
**MAXIMUM AVERAGE POWER DISSIPATION (SINGLE-PHASE FULL WAVE)**



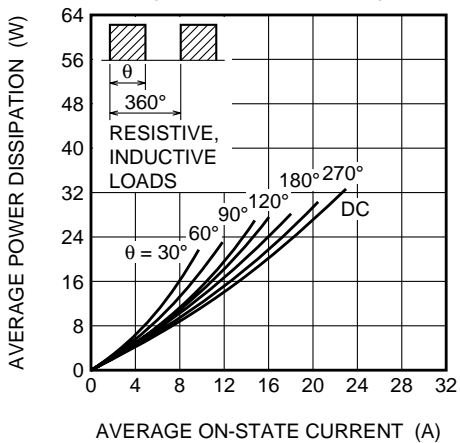
**ALLOWABLE CASE TEMPERATURE VS. AVERAGE ON-STATE CURRENT (SINGLE-PHASE FULL WAVE)**



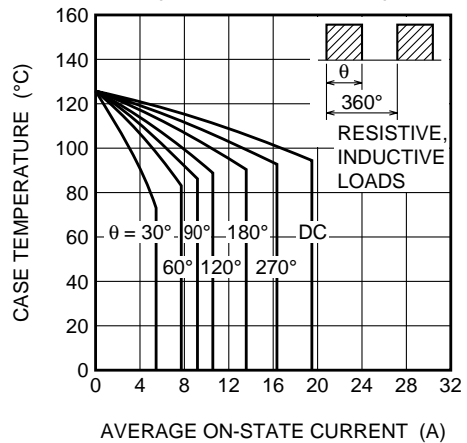
**ALLOWABLE AMBIENT TEMPERATURE VS. AVERAGE ON-STATE CURRENT (SINGLE-PHASE FULL WAVE)**



**MAXIMUM AVERAGE POWER DISSIPATION (RECTANGULAR WAVE)**



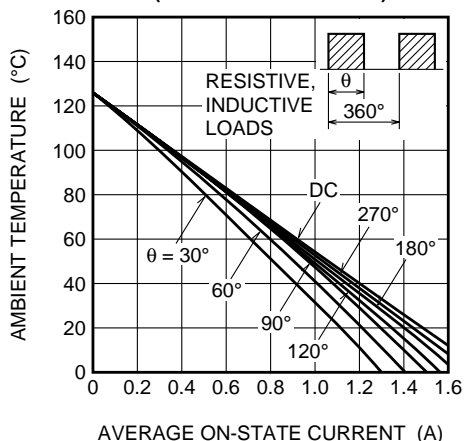
**ALLOWABLE CASE TEMPERATURE VS. AVERAGE ON-STATE CURRENT (RECTANGULAR WAVE)**



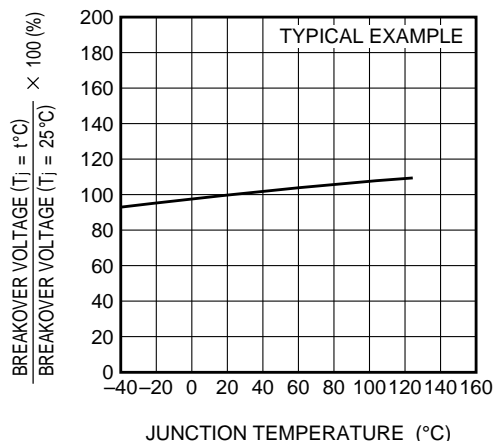
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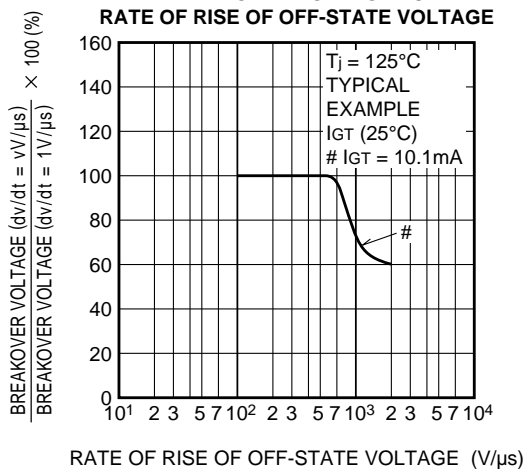
**ALLOWABLE AMBIENT TEMPERATURE VS. AVERAGE ON-STATE CURRENT (RECTANGULAR WAVE)**



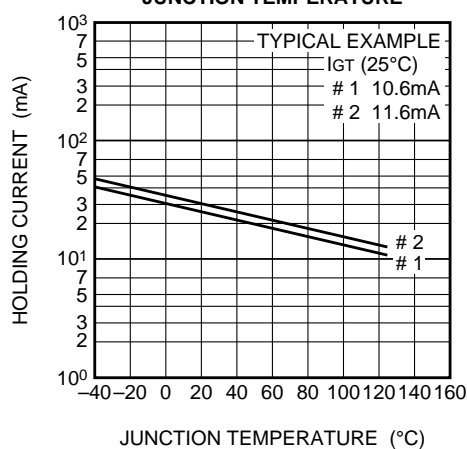
**BREAKOVER VOLTAGE VS. JUNCTION TEMPERATURE**



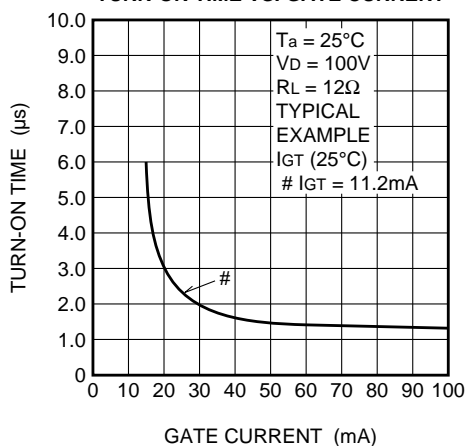
**BREAKOVER VOLTAGE VS. RATE OF RISE OF OFF-STATE VOLTAGE**



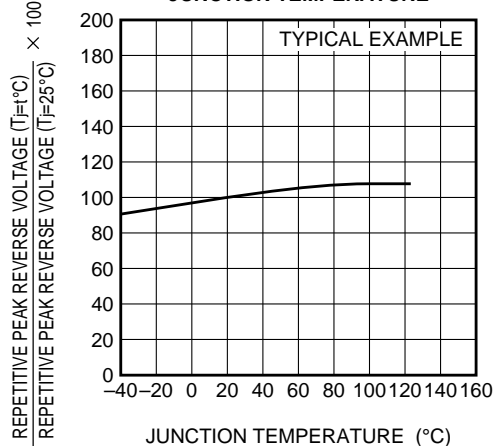
**HOLDING CURRENT VS. JUNCTION TEMPERATURE**



**TURN-ON TIME VS. GATE CURRENT**



**REPETITIVE PEAK REVERSE VOLTAGE VS. JUNCTION TEMPERATURE**



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