

# CR8AM

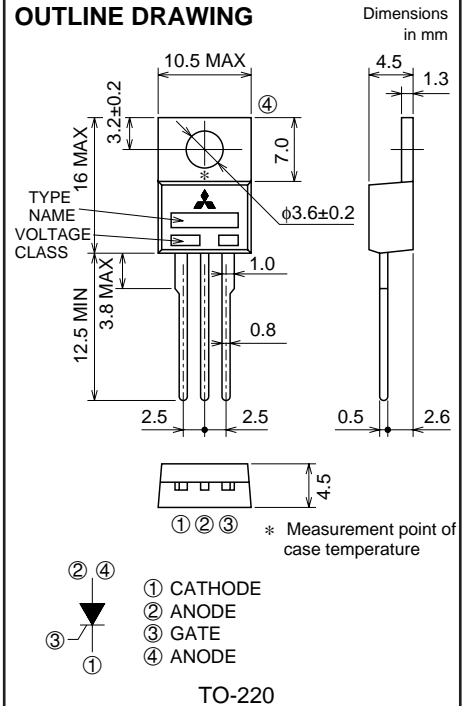
MEDIUM POWER USE  
NON-INSULATED TYPE, GLASS PASSIVATION TYPE

## CR8AM



- $I_T$  (AV) ..... 8A
- $V_{DRM}$  ..... 400V/600V
- $I_{GT}$  ..... 15mA

## OUTLINE DRAWING



## APPLICATION

Switching mode power supply, ECR, regulator for autocycle, motor control

## 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		12.6	A
$I_T$ (AV)	Average on-state current	Commercial frequency, sine half wave, 180° conduction, $T_c=88^\circ\text{C}$	8	A
$I_{TSM}$	Surge on-state current	60Hz sine half wave 1 full cycle, peak value, non-repetitive	120	A
$I^2_t$	$I^2_t$ for fusing	Value corresponding to 1 cycle of half wave 60Hz, surge on-state current	60	A <sup>2</sup> s
PGM	Peak gate power dissipation		5	W
PG (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	°C
$T_{stg}$	Storage temperature		-40 ~ +125	°C
—	Weight	Typical value	2.0	g

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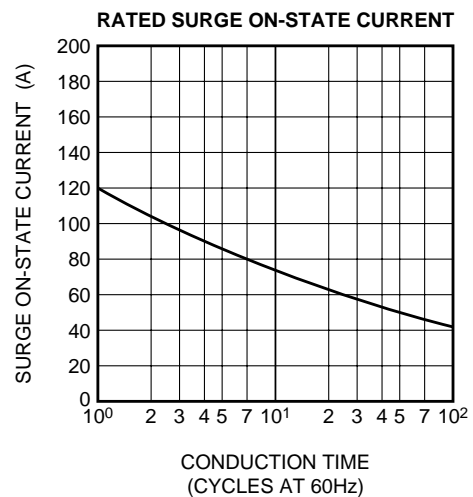
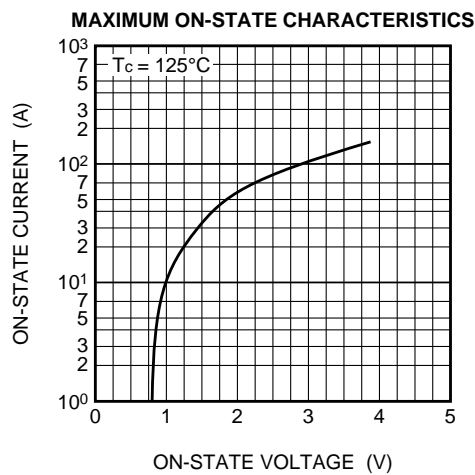
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## ELECTRICAL CHARACTERISTICS

Symbol	Parameter	Test conditions	Limits			Unit
			Min.	Typ.	Max.	
IRRM	Repetitive peak reverse current	$T_J=125^{\circ}\text{C}$ , $V_{RRM}$ applied	—	—	2.0	mA
IDRM	Repetitive peak off-state current	$T_J=125^{\circ}\text{C}$ , $V_{DRM}$ applied	—	—	2.0	mA
$V_{TM}$	On-state voltage	$T_C=25^{\circ}\text{C}$ , $I_{TM}=25\text{A}$ , instantaneous value	—	—	1.4	V
$V_{GT}$	Gate trigger voltage	$T_J=25^{\circ}\text{C}$ , $V_D=6\text{V}$ , $I_T=1\text{A}$	—	—	1.0	V
$V_{GD}$	Gate non-trigger voltage	$T_J=125^{\circ}\text{C}$ , $V_D=1/2V_{DRM}$	0.2	—	—	V
$I_{GT}$	Gate trigger current	$T_J=25^{\circ}\text{C}$ , $V_D=6\text{V}$ , $I_T=1\text{A}$	—	—	15	mA
$I_H$	Holding current	$T_J=25^{\circ}\text{C}$ , $V_D=12\text{V}$	—	15	—	mA
$R_{th(j-c)}$	Thermal resistance	Junction to case	—	—	3.0	$^{\circ}\text{C/W}$

\*1. The contact thermal resistance  $R_{th(j-c)}$  is  $1.0^{\circ}\text{C/W}$  with greased.

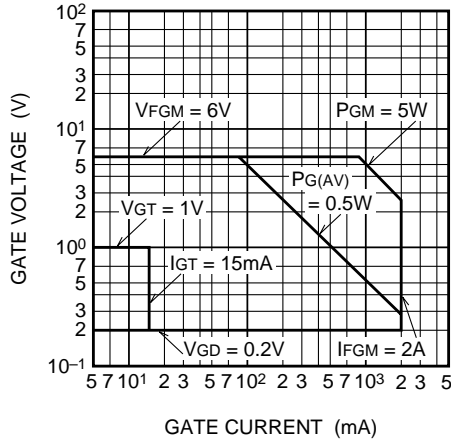
## PERFORMANCE CURVES



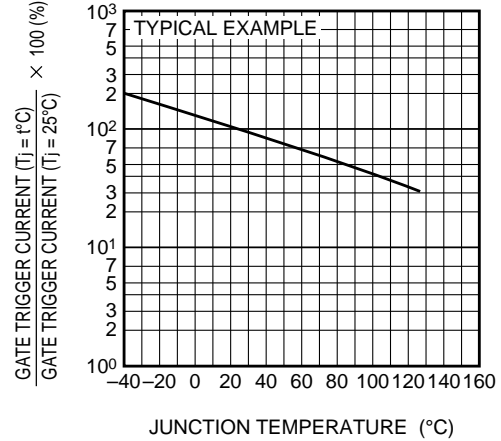
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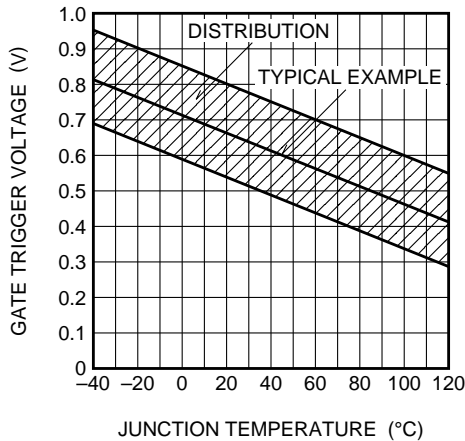
**GATE CHARACTERISTICS**



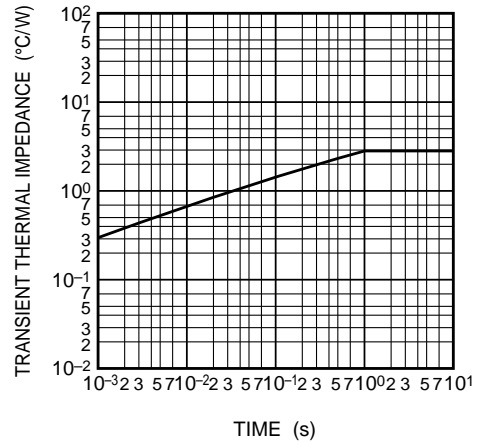
**GATE TRIGGER CURRENT VS. JUNCTION TEMPERATURE**



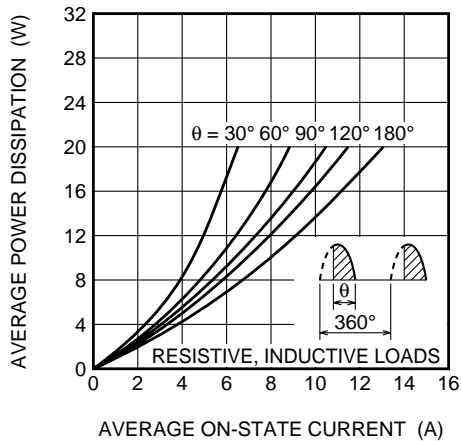
**GATE TRIGGER VOLTAGE VS. JUNCTION TEMPERATURE**



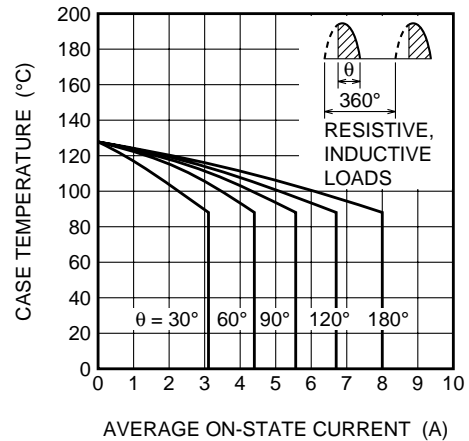
**MAXIMUM TRANSIENT THERMAL IMPEDANCE CHARACTERISTICS (JUNCTION TO CASE)**



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



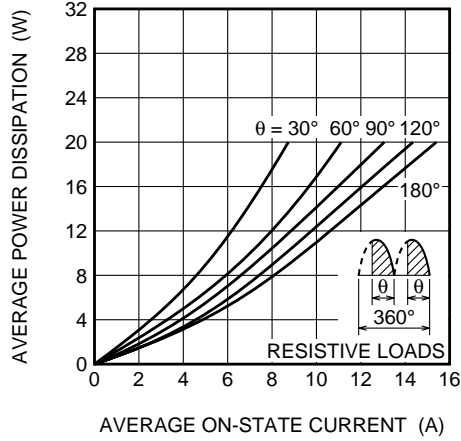
**ALLOWABLE CASE TEMPERATURE VS. AVERAGE ON-STATE CURRENT (SINGLE-PHASE HALF WAVE)**



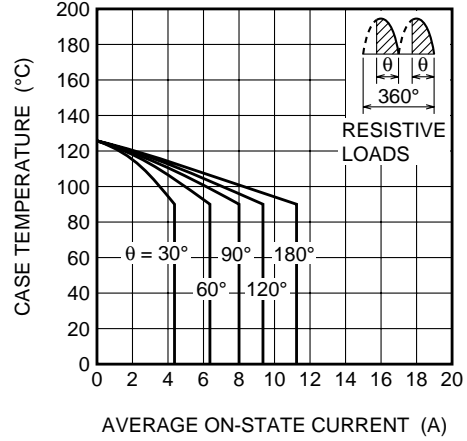
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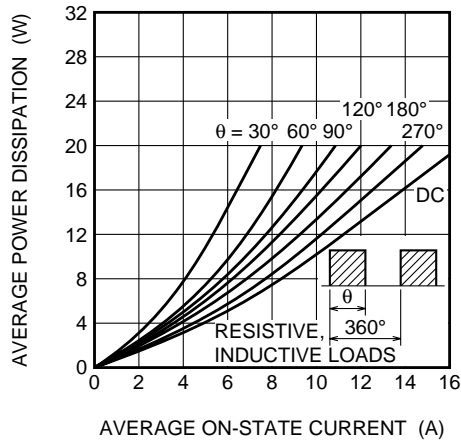
MAXIMUM AVERAGE POWER DISSIPATION  
(SINGLE-PHASE FULL WAVE)



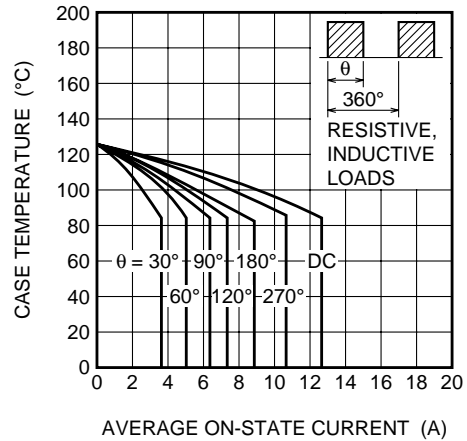
ALLOWABLE CASE TEMPERATURE VS.  
AVERAGE ON-STATE CURRENT  
(SINGLE-PHASE FULL WAVE)



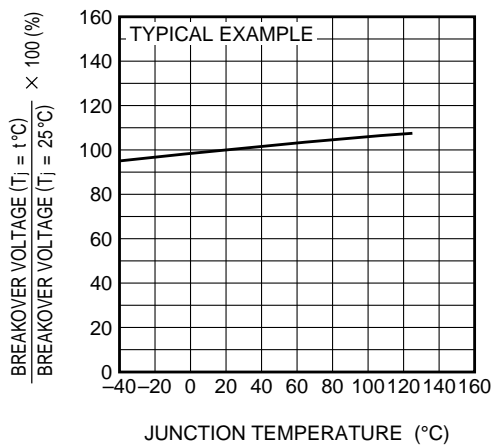
MAXIMUM AVERAGE POWER DISSIPATION  
(RECTANGULAR WAVE)



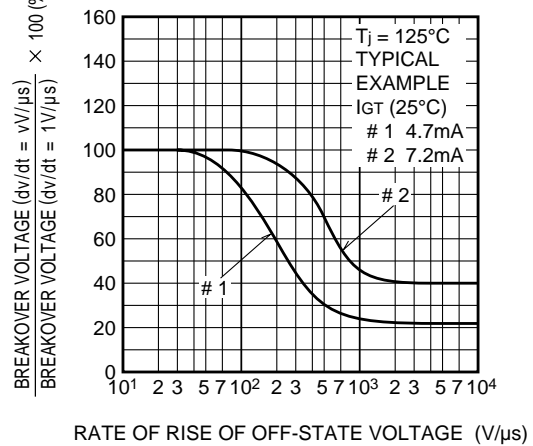
ALLOWABLE CASE TEMPERATURE VS.  
AVERAGE ON-STATE CURRENT  
(RECTANGULAR WAVE)



BREAKOVER VOLTAGE VS.  
JUNCTION TEMPERATURE



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



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