CR8PM

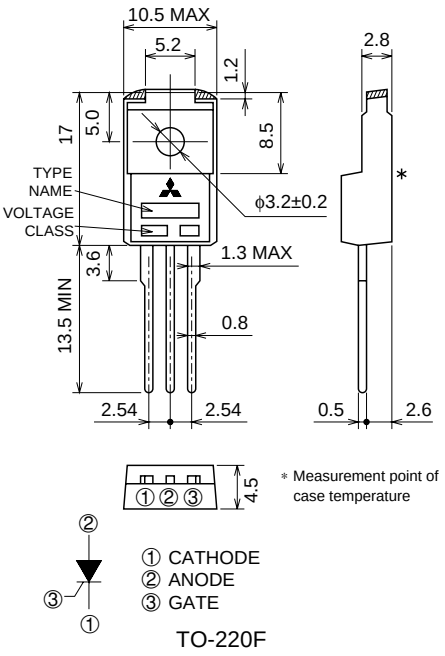
MEDIUM POWER USE

INSULATED TYPE, GLASS PASSIVATION TYPE

CR8PM

- **$I_{T\ (AV)}$ 8A**
- **V_{DRM} 400V/600V**
- **I_{GT} 15mA**
- **V_{iso} 1500V**
- **UL Recognized: File No. E80276**

OUTLINE DRAWING Dimensions in mm



APPLICATION

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

MAXIMUM RATINGS (T_a=25°C, unless otherwise noted)

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=81°C	8.0	A
I_{TSM}	Surge on-state current	60Hz sine half wave 1 full cycle, peak value, non-repetitive	120	A
I^2t	I^2t for fusing	Value corresponding to 1 cycle of half wave 60Hz, surge on-state current	60	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		6.0	V
V_{RGM}	Peak gate reverse voltage		10	V
I_{FGM}	Peak gate forward current		2.0	A
T_j	Junction temperature		–40 ~ +125	°C
T_{stg}	Storage temperature		–40 ~ +125	°C
—	Weight	Typical value	2.0	g
V_{iso}	Isolation voltage	T_a=25°C, AC 1 minute, each terminal to case	1500	V

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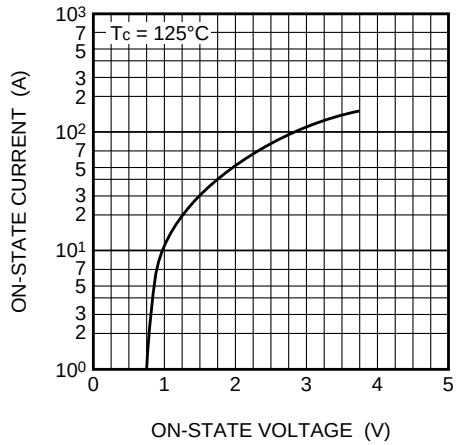
ELECTRICAL CHARACTERISTICS

Symbol	Parameter	Test conditions	Limits			Unit
			Min.	Typ.	Max.	
I_{RRM}	Repetitive peak reverse current	T_j=125°C, V_{RRM} applied	—	—	2.0	mA
I_{DRM}	Repetitive 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}=25A, instantaneous value	—	—	1.4	V
V_{GT}	Gate trigger voltage	T_a=25°C, V_D=6V, I_T=1A	—	—	1.0	V
V_{GD}	Gate non-trigger voltage	Tj=125°C, VD=1/2VDRM	0.2	—	—	V
I_{GT}	Gate trigger current	T_j=25°C, V_D=6V, I_T=1A	—	—	15	mA
I_H	Holding current	T_j=25°C, V_D=12V	—	1.5	—	mA
$R_{th\ (j-c)}$	Thermal resistance	Junction to case ✻1	—	—	3.7	°C/W

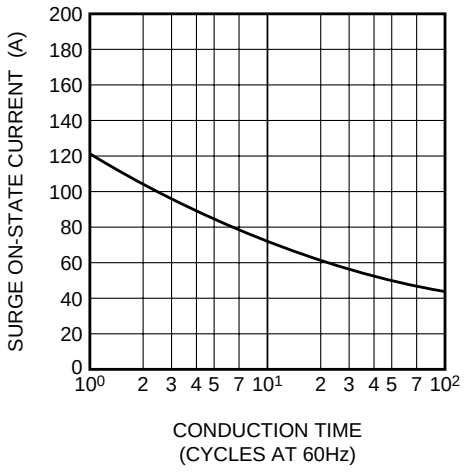
✻1. The contact thermal resistance $R_{th\ (j-c)}$ is 0.5°C/W with greased.

PERFORMANCE CURVES

MAXIMUM ON-STATE CHARACTERISTICS



RATED SURGE ON-STATE CURRENT



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MEDIUM POWER USE
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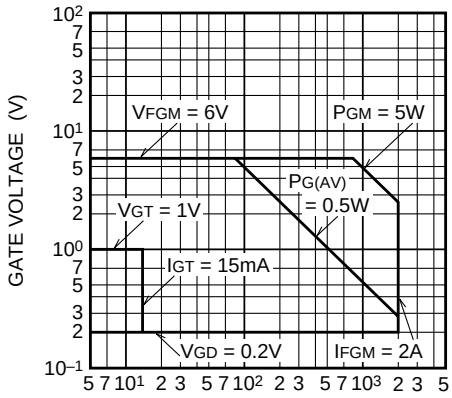
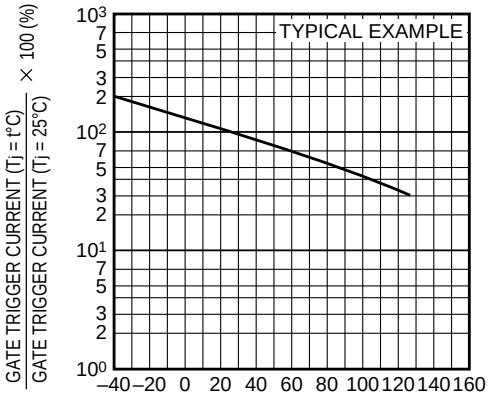
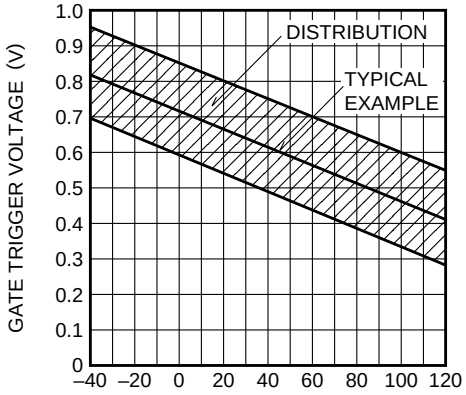
GATE CHARACTERISTICS



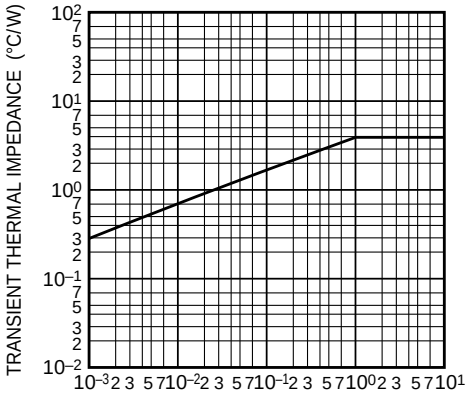
GATE TRIGGER CURRENT VS. JUNCTION TEMPERATURE



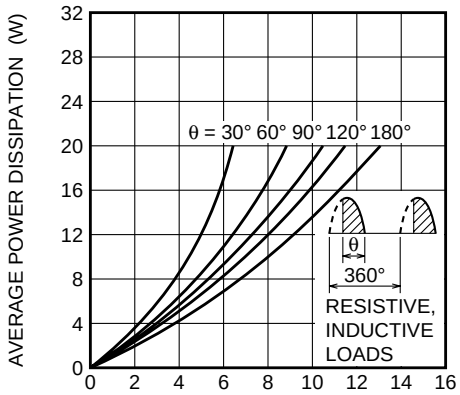
GATE TRIGGER VOLTAGE VS. JUNCTION TEMPERATURE



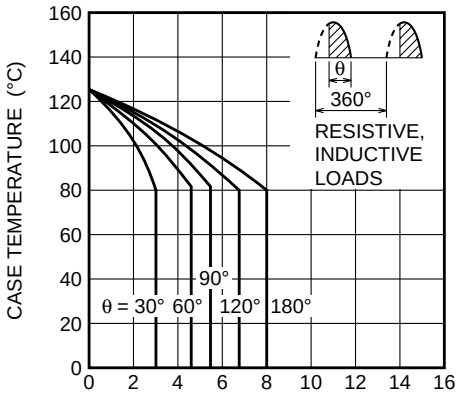
MAXIMUM TRANSIENT THERMAL IMPEDANCE CHARACTERISTICS (JUNCTION TO CASE)



MAXIMUM AVERAGE POWER DISSIPATION (SINGLE-PHASE HALF WAVE)



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



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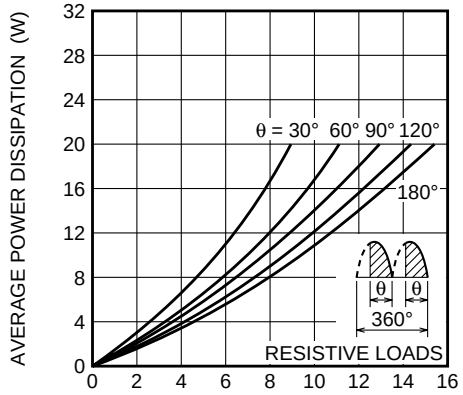
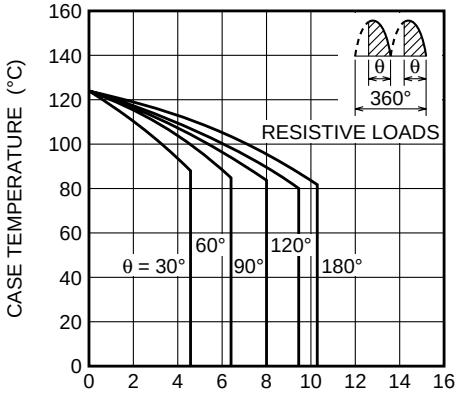
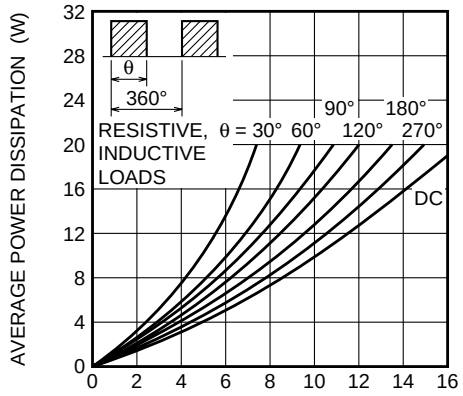
MAXIMUM AVERAGE POWER DISSIPATION (SINGLE-PHASE FULL WAVE)



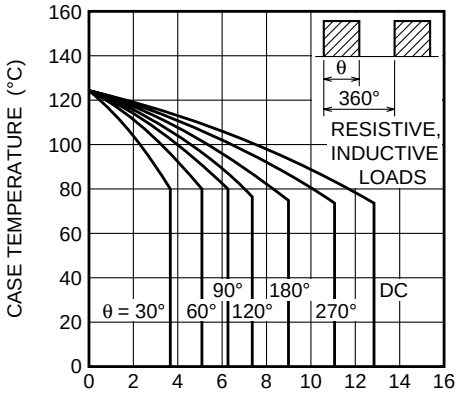
ALLOWABLE CASE TEMPERATURE VS. AVERAGE ON-STATE CURRENT (SINGLE-PHASE FULL WAVE)



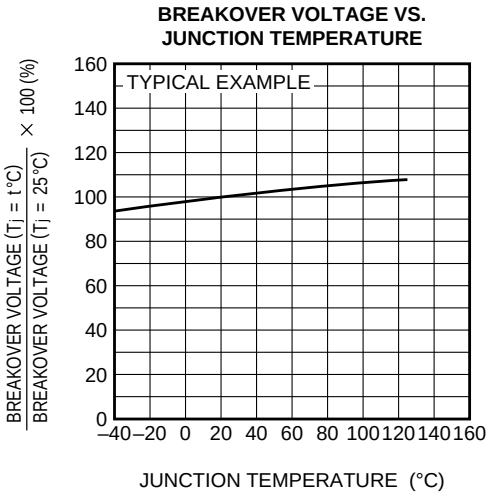
MAXIMUM AVERAGE POWER DISSIPATION (RECTANGULAR WAVE)



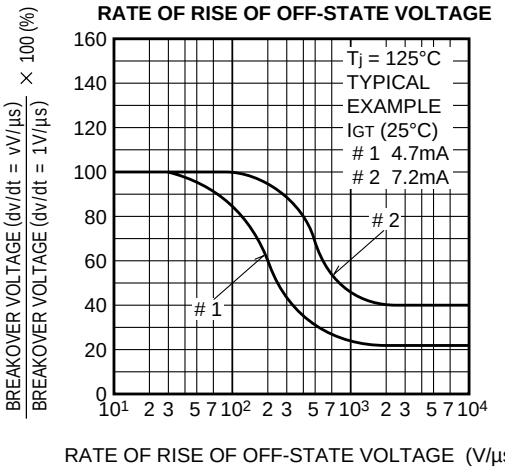
ALLOWABLE CASE TEMPERATURE VS. AVERAGE ON-STATE CURRENT (RECTANGULAR WAVE)



BREAKOVER VOLTAGE VS. JUNCTION TEMPERATURE



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



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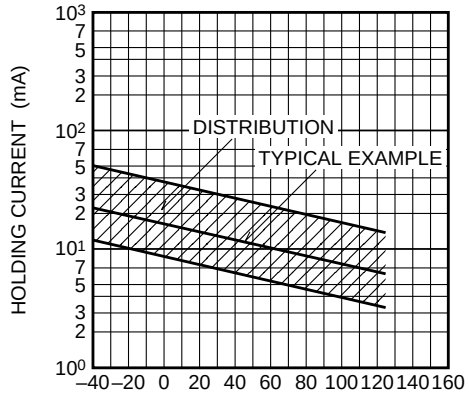
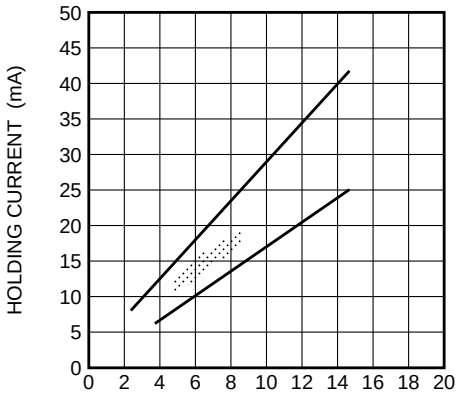
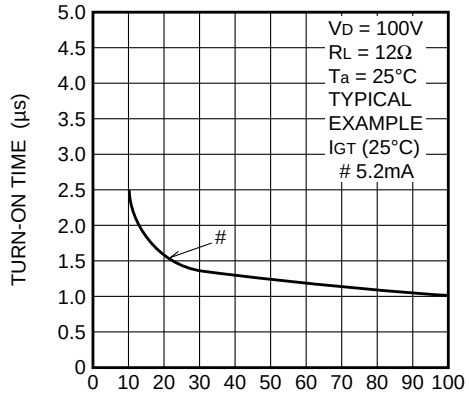
HOLDING CURRENT VS. JUNCTION TEMPERATURE



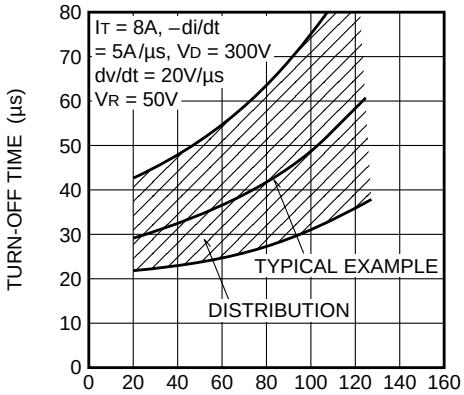
HOLDING CURRENT VS. GATE TRIGGER CURRENT



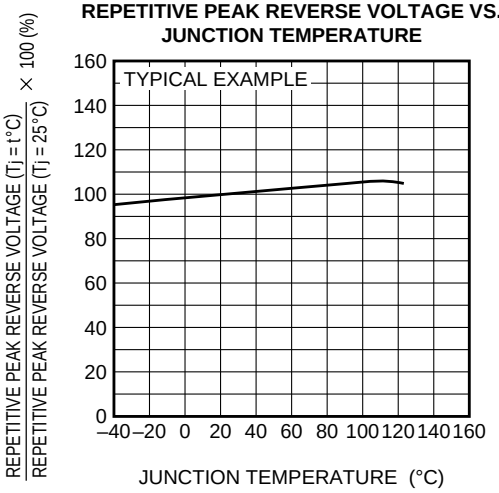
TURN-ON TIME VS. GATE CURRENT



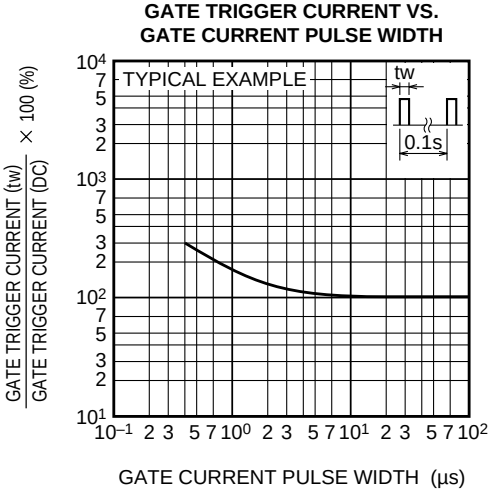
TURN-OFF TIME VS. JUNCTION TEMPERATURE



REPETITIVE PEAK REVERSE VOLTAGE VS. JUNCTION TEMPERATURE



GATE TRIGGER CURRENT VS. GATE CURRENT PULSE WIDTH



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