CR3EM

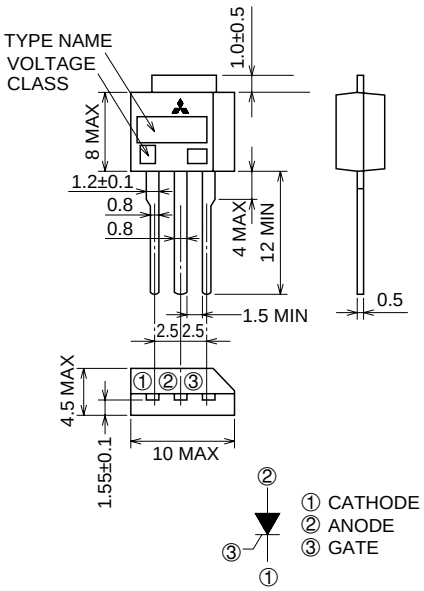
LOW POWER USE

NON-INSULATED TYPE, GLASS PASSIVATION TYPE

CR3EM

- $I_{T\ (AV)}$ 0.6A
- V_{DRM} 400V
- I_{GT} 30mA

OUTLINE DRAWING Dimensions in mm



TO-202

APPLICATION

Automatic strobe flasher

MAXIMUM RATINGS

Symbol	Parameter	Voltage class	Unit
		8	
V_{RRM}	Repetitive peak reverse voltage	400	V
V_{RSM}	Non-repetitive peak reverse voltage	500	V
$V_{R\ (DC)}$	DC reverse voltage	320	V
V_{DRM}	Repetitive peak off-state voltage	400	V
V_{DSM}	Non-repetitive peak off-state voltage	600	V

Symbol	Parameter	Conditions	Ratings	Unit
$I_{T\ (RMS)}$	RMS on-state current		0.94	A
$I_{T\ (AV)}$	Average on-state current	Commercial frequency, sine half wave, 180° conduction, T_a=43°C	0.6	A
I_{TSM}	Surge on-state current	60Hz sine half wave 1 full cycle, peak value, non-repetitive	70	A
I^2t	I^2t for fusing	Value corresponding to 1 cycle of half wave 60Hz, surge on-state current	20	A^2s
P_{GM}	Peak gate power dissipation		2.0	W
$P_{G\ (AV)}$	Average gate power dissipation		0.2	W
V_{FGM}	Peak gate forward voltage		6	V
V_{RGM}	Peak gate reverse voltage		6	V
I_{FGM}	Peak gate forward current		1	A
T_j	Junction temperature		–40 ~ +125	°C
T_{stg}	Storage temperature		–40 ~ +125	°C
—	Weight	Typical value	1.1	g

MITSUBISHI ELECTRIC

CR3EM

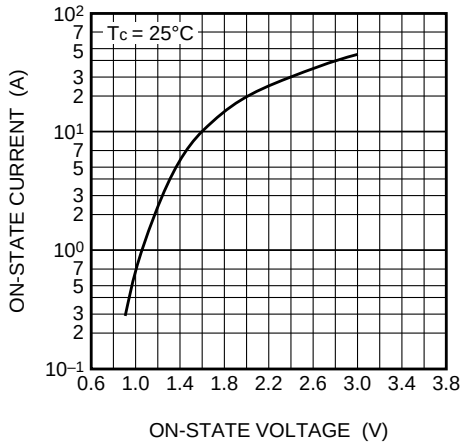
LOW POWER USE
NON-INSULATED TYPE, GLASS PASSIVATION TYPE

ELECTRICAL CHARACTERISTICS

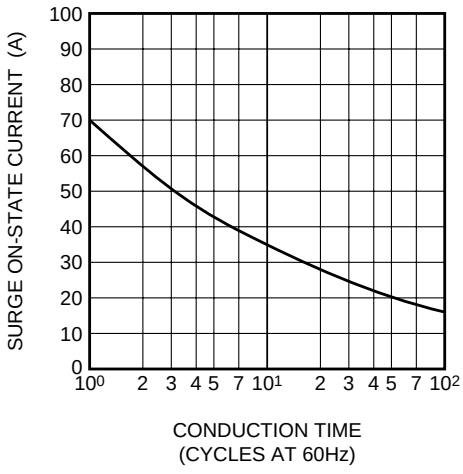
Symbol	Parameter	Test conditions	Limits			Unit
			Min.	Typ.	Max.	
I_{RRM}	Repetitive peak reverse current	T_j=125°C, V_{RRM} applied	—	—	0.1	mA
I_{DRM}	Repetitive peak off-state current	T_j=125°C, V_{DRM} applied	—	—	0.1	mA
V_{TM}	On-state voltage	T_C=25°C, I_{TM}=10A, instantaneous value	—	—	1.6	V
V_{GT}	Gate trigger voltage	T_j=25°C, V_D=6V, I_T=0.5A	—	—	1.5	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=0.5A	—	—	30	mA
I_H	Holding current	T_j=25°C, V_D=12V	25	45	—	mA
$R_{th\ (j-a)}$	Thermal resistance	Junction to ambient	—	—	120	°C/W

PERFORMANCE CURVES

MAXIMUM ON-STATE CHARACTERISTICS



RATED SURGE ON-STATE CURRENT



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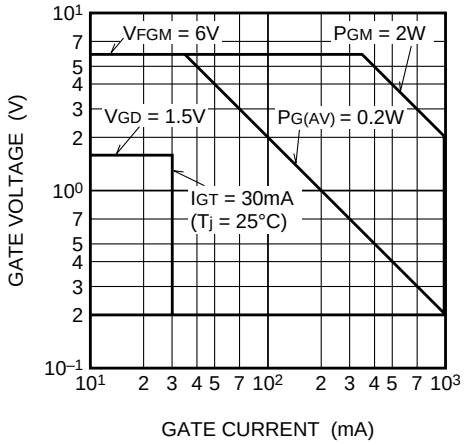
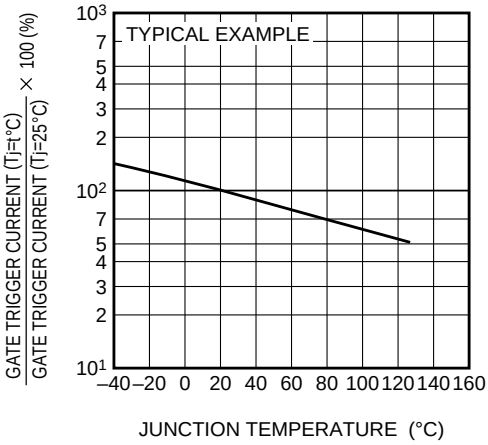
LOW POWER USE
NON-INSULATED TYPE, GLASS PASSIVATION TYPE

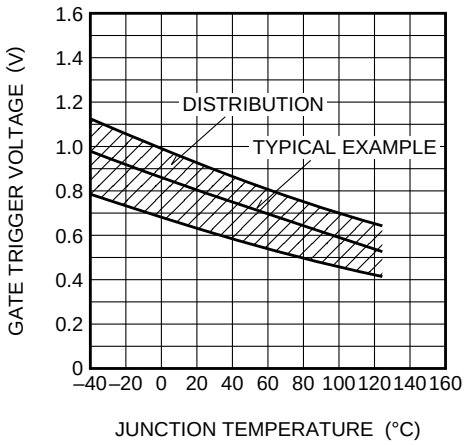
GATE CHARACTERISTICS



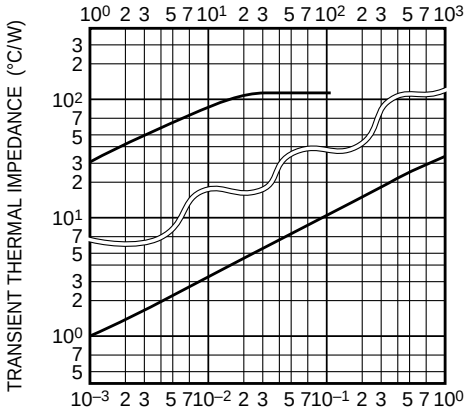
GATE TRIGGER CURRENT VS. JUNCTION TEMPERATURE



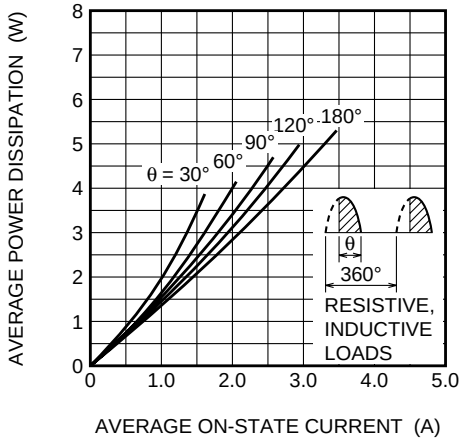
GATE TRIGGER VOLTAGE VS. JUNCTION TEMPERATURE



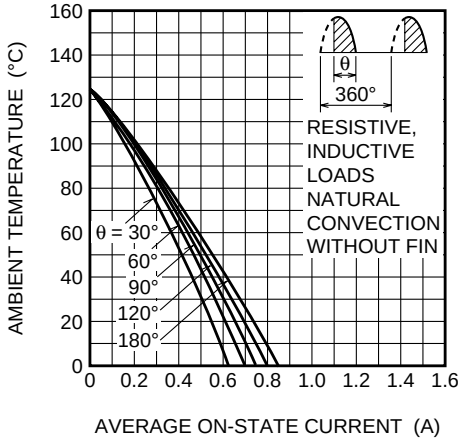
MAXIMUM TRANSIENT THERMAL IMPEDANCE CHARACTERISTICS (JUNCTION TO AMBIENT)



MAXIMUM AVERAGE POWER DISSIPATION (SINGLE-PHASE HALF WAVE)



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

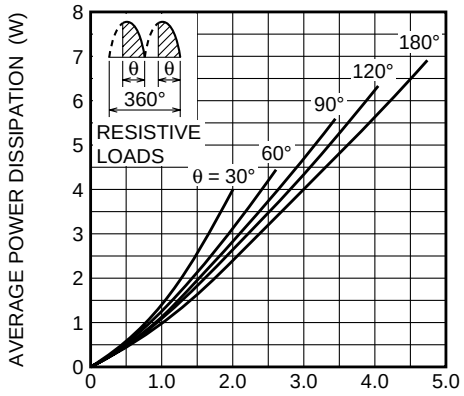


MITSUBISHI ELECTRIC

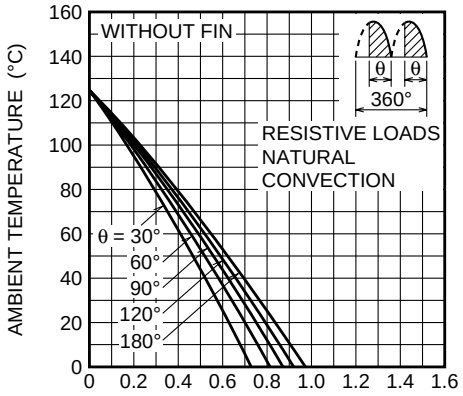
CR3EM

LOW POWER USE
NON-INSULATED TYPE, GLASS PASSIVATION TYPE

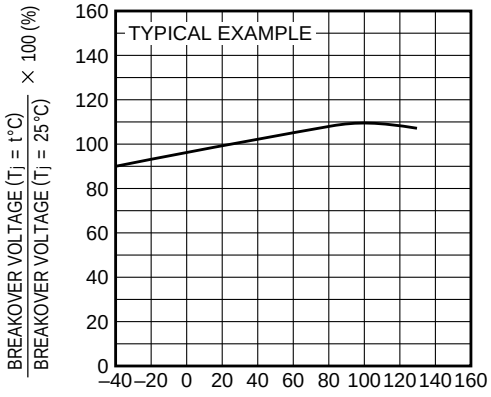
MAXIMUM AVERAGE POWER DISSIPATION (SINGLE-PHASE FULL WAVE)



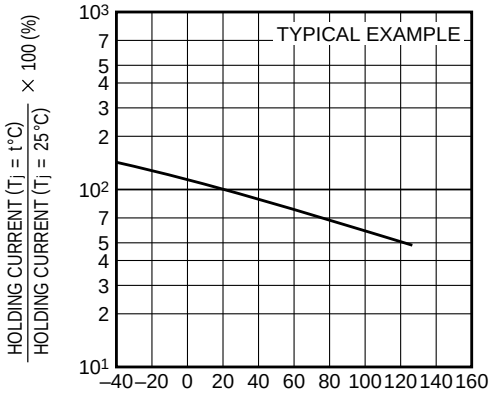
ALLOWABLE AMBIENT TEMPERATURE VS. AVERAGE ON-STATE CURRENT (SINGLE-PHASE FULL WAVE)



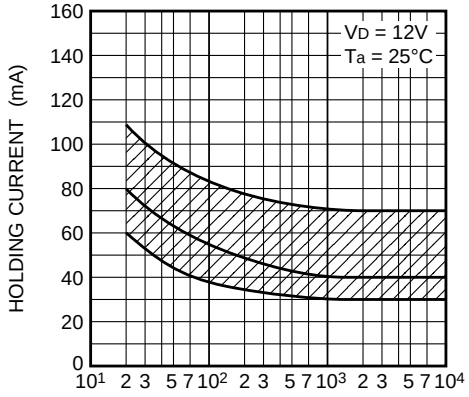
BREAKOVER VOLTAGE VS. JUNCTION TEMPERATURE



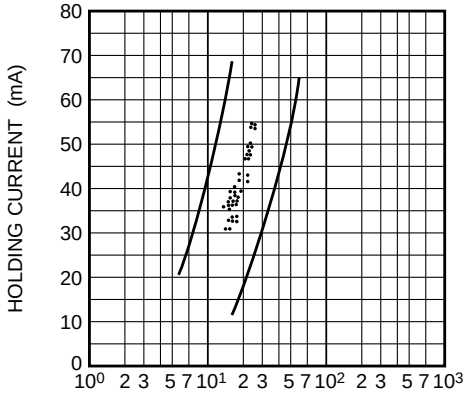
HOLDING CURRENT VS. JUNCTION TEMPERATURE



HOLDING CURRENT VS. GATE TO CATHODE RESISTANCE



HOLDING CURRENT VS. GATE TRIGGER CURRENT



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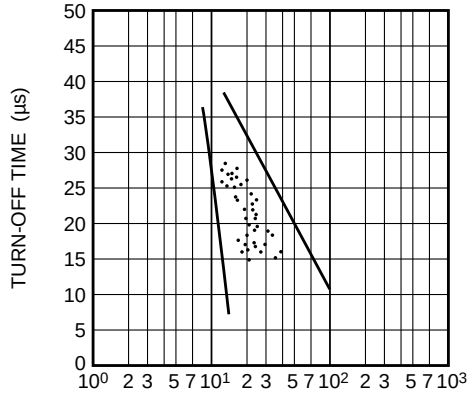
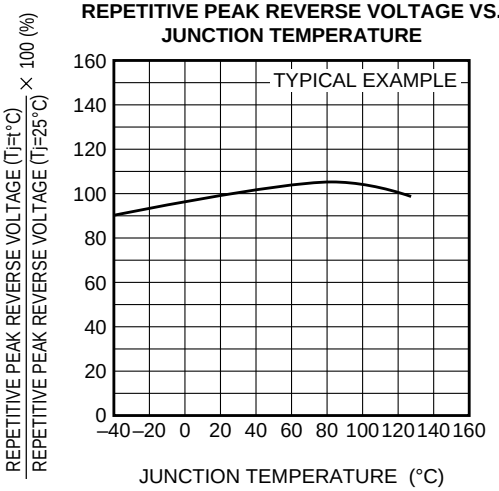
TURN-OFF TIME VS. GATE TRIGGER CURRENT



REPETITIVE PEAK REVERSE VOLTAGE VS. JUNCTION TEMPERATURE



GATE TRIGGER CURRENT VS. GATE CURRENT PULSE WIDTH